

# CONTAINERS



## BRANDS CARRIED

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[toplastics.com](http://toplastics.com)



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[landmarkplastics.com](http://landmarkplastics.com)



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With more than 50 years thermoforming experience in the horticulture market, T.O. Plastics offers superior plastic plant pots and trays that improve the growing process and growers' bottom line. They offer the highest quality, most competitively priced horticulture products on the market. After years of listening to their customers, they have developed one of the most diversified thermoformed container lines in the industry.



### SVD and SVT Pots and Trays

T.O. Plastics SVD (square vacuum deep), and SVT (square vacuum traditional) pots were designed with the growers' best interests in mind – time, efficiency and quality. They produce their pots and carry trays in a quality manner using high impact polystyrene. Be sure to recognize our Press-Fill features. Your time is valuable and T.O.P. Press-Fill systems are sure to save you time and money.

Pots	Code	Top (in)	Depth (in)	Quantity/Case	(US/Metric)
250 SVD	TOP2.5SVDC	2.5"	3.5"	800	8.45 fl oz / 250 mL
325 SVD	TOP3.25SVDC	3.19"	3.54"	900	15.82 fl oz / 468 mL
350 SVD	TOP3.5SVDC	3.5"	3.5"	450	1.08 pt / 515 mL
355 Deep Pot	TOP3.55SVDC	3.5"	5.0"	450	1.5 pt / 712 mL
400 SVT	TOP4.0SVTC	3.75"	3.25"	500	1.13 pt / 538 mL
450 SVD	TOP4.5SVDC	4.125"	5.0"	300, 375, 500	1.13 qt / 1.07 L
450 SVT	TOP4.5SVT	4.125"	3.75"	375, 500	1.72 pt / 815 mL

Trays	Code	Width (in)	Length (in)	Depth	QTY/Case
250 SVD 32 PF	TOP2.5SVDC32	10.75"	21.19"	2.50"	100
325 SVD 20 PF	TOP3.25SVD-20	13.5"	16.75"	1.88"	45
350 SVD 18 PF	TOP3.5SVD-18	10.75"	21.19"	1.88"	100
355 SVD 18 Deep	TOP3.55SVD-18	10.81"	21.28"	2.50"	100
400 S-12	TOP4.0SVD-12	11.75"	15.50"	2.50"	100
400 S-20	TOP4.0SVD-20	15.00"	18.75"	1.88"	50
450 S-12 PF	TOP4.5S12PF	12.88"	17.13"	2.19"	50
450 S-12 Heavy	TOP4.5S12H	13.25"	17.25"	3.19"	50
450 S-15 PF	TOP4.5S15	12.88"	12.13"	2.13"	50

#### Press-Fill Made Easy

Simply place a tray, press firmly and lift a fully loaded tray of pots. Repeat the process.





## Plug Trays

T.O. Plug trays are designed in many standard configurations. This includes standard, square, star and hexagonal cell shapes. Please check the chart below for information on cell configurations and dimensions. Please call ACW Supply with any questions.



Plug Trays	Code	Cell Config.	Length x Width	Cell Top	Cell Bottom	Cell Depth
50 Square Plug Tray	TOPPT50	5x10	11" x 21.5"	1.902	1.346	2.375
72 Square Plug Tray	TOPPT72	6x12	11" x 21.5"	1.527	1.002	2.25
98 Square Plug Tray	TOPPT98	7x14	11" x 21.5"	1.34	0.889	2.00
128 Square Plug Tray	TOPPT128	8x16	11" x 21.5"	1.193	0.729	2.00
162 Square Plug Tray	TOPPT162	9x18	11" x 21.5"	1.079	0.677	1.75
200 Square Plug Tray	TOPPT200	10x20	11" x 21.5"	0.863	0.616	1.5
200 Deep Plug Tray	TOPPT200SD	10x20	11" x 21.5"	0.907	0.616	1.75
200 X-Deep Plug Tray	TOPPT2002	10x20	11" x 21.5"	0.972	0.616	2.125
288 Square Plug Tray	TOPPT288	12x24	11" x 21.5"	0.76	0.51	1.25
288 Deep Plug Tray	TOPPT288D	12x24	11" x 21.5"	0.76	0.50	1.5
392 Square Plug Tray	TOPPT392	14x28	11" x 21.5"	0.70	0.518	1.155
406 Square Plug Tray	TOPPT406	14x29	11" x 21.5"	0.67	0.488	1.155
512 Square Plug Tray	TOPPT512CE	16x32	11" x 21.5"	0.55	0.32	0.94
36 Star Plug Tray	TOPPT36S	4x9	10.94" x 21.44"	2.125	1.25	3.00
38 Star Plug Tray	TOPPT38S	3x8,2x7	10.94" x 21.44"	2.136	1.62	5.00
58 Star Plug Tray	TOPPT58S	3x12,2x11	11" x 21.5"	1.53	0.82	2.38
72 Star Plug Tray	TOPPT72S	6x12	11" x 21.5"	1.563	0.879	2.25
72 Star Deep Plug Tray	TOPPT72SD	6x12	10.94" x 21.44"	1.563	1.00	3.00
105 Star Plug Tray	TOPPT105S	7x15	11" x 12.5"	1.243	0.902	1.50
105 Hex Plug Tray	TOPPT105H	7x15	11" x 12.5"	1.243	0.902	1.50
105 Hex C/E Plug Tray	TOPPT512CEH	16x32	11" x 12.5"	0.54	0.37	0.94

## Propagation Trays

T.O. Propagation Trays come in many standard configurations. See chart below.



Prop Trays	Code	Trim Length/Width	Cell Top	Cell Bottom	Cell Depth
24 Prop Seedling Tray	TOPPRO24	10.94" x 21.44"	2.375" x 3.25"	1.25" x 2.125"	4.5"
38 Prop Tray	TOPPRO38	10.5" x 20.875"	2.215"	1.663"	2.313"
50 Prop Tray	TOPPRO50	10.5" x 20.875"	1.938"	1.264"	2.313"
72 Prop Tray	TOPPRO72	10.5 x 20.875"	1.465"	0.826"	2.313"
98 Prop Tray	TOPPRO98	10.5" x 20.875"	1.34"	0.88"	1.5"



## Standard Inserts

Engineered to de-nest easily, our standard inserts have straight walls that offer greater soil capacity for a larger, healthier crop. Combined with our standard flats, T.O. Plastics standard inserts create an efficient system for your growing operation.



Plug Trays	Code	Cell Dimensions (Width x Length x Depth) inches	Max Dry Vol. (per-pack) cubic inches	Max Liquid Vol. (per-pack) US/Metric	Trays Per-Case
STI-201	715345C	10.13 x 10.13 x 2.30	111.00	1.92 qt / 1.82 l	100
STI-601	715347C	4.88 x 6.63 x 2.33	68.58	1.19 qt / 1.12 l	100
STI-606	715348C	1.94 x 2.23x2.23	42.42	1.47 pt / 695.00 ml	100
STI-801	715352C	4.86 x 4.86 x 2.27	45.66	1.58 pt / 747.91 ml	100
STI-804	715353C	2.40 x 2.40 x 2.23	35.52	1.23 pt / 582.00 ml	100
STI-806	715357C	1.50 x 2.38 x 2.25	37.68	1.30 pt / 618.00 ml	100
STI-809	715362C	1.50 x 1.50x 2.28	34.47	1.23 pt / 564.00 ml	100
STI-812	715364C	1.15 x 1.59 x 2.25	29.29	1.01 pt / 480.00 ml	100
STI-1001	715366C	3.73 x 4.80 x 2.25	33.56	1.16 pt / 550.00 ml	100
STI-1004	715367C	2.35 x 1.81 x 2.24	26.85	14.88 fl oz / 440.00 ml	100
STI-1006	715369C	1.50 x 1.77 x 2.25	21.97	12.17 fl oz / 360.00 ml	100
STI-1201	715371C	3.13 x 4.88 x 2.25	30.50	1.05 pt / 500.00 ml	100
STI-1202	715373C	3.10 x 2.28 x 2.27	25.02	13.86 fl oz / 410.00 ml	100
STI-1203	715374C	3.38 x 1.50 x 2.27	22.27	12.34 fl oz / 365.00 ml	100
STI-1204	715377C	1.50 x 2.38 x 2.26	23.48	13.00 fl oz / 385.00 ml	100
STI-1206	715382C	1.50 x 1.50 x 2.23	21.36	11.82 fl oz / 349.98 ml	100
STI-1206-LC	715420C	1.38 x 1.47 x 2.38	22.27	12.34 fl oz / 365.00 ml	100
STI-1801	715385C	3.11 x 3.11 x 2.25	17.70	9.80 fl oz / 290.00 ml	100
STI-1802	715387C	1.49 x 3.11 x 2.27	14.04	7.78 fl oz / 255.00 ml	100
STI-1803-Tri Pack	715389C	2.42 x 1.59 x 2.27	14.65	8.12 fl oz / 240.00 ml	100
STI-1803-Strip	715392C	1.50 x 1.88 x 2.26	13.89	7.71 fl oz / 228.00 ml	100
STI-1804	715394C	1.55 x 1.55 x 2.27	13.60	7.54 fl oz / 222.86 ml	100
STI-1804-LC	715425C	1.48 x 1.48 x 2.31	17.69	9.80 fl oz / 290.00 ml	100
STI-2401	715399C	2.19 x 3.00 x 2.25	12.50	6.93 fl oz / 205.00 ml	100
STI-3601	715401C	1.94 x 2.23 x 2.23	7.32	4.05 fl oz / 120.00 ml	100
STI-606-DP	715405C	2.00 x 2.25 x 3.25	75.16	1.30 qt / 1.23 l	100
STI-806-DP	715408C	1.56 x 2.36 x 3.13	45.77	1.60 pt / 750.00 ml	100

## True & Flat Inserts

Slim series inserts offer serration between packs for easy separation, clean edges for easy handling and accurate drainage holes



Plug Trays	Code	Cell Dimensions (Width x Length x Depth) inches	Max Dry Vol. (per-pack) cubic inches	Max Liquid Vol. (per-pack) US/Metric	Trays Per-Case
TRI-804	715320C	2.15 x 2.18 x 2.63	38.40	1.33 pt / 629.26 ml	100
TRI-1204	715325C	1.43 x 1.75 x 2.76	18.76	10.40 fl oz / 308.00 ml	100
TRI-606-DP	715335C	1.87 x 2.00 x 3.25	48.66	1.58 pt / 798.00 ml	100



### Special Features

- Handcrafted, indestructible, heavy duty quality, eliminates breakage problems.
- Looks more like clay than clay itself - without the breakage problems.
- Weighs 80% less than clay or Terra-Cotta for easier handling.
- Will not leach salts or acids as clay products do.
- No discoloration or leakage problems.
- Available with solid flat bottoms or drainage risers.
- Can be bolted to surface to deter theft/other problems.

### Venus Polyspun Planters, Saucers and Trays

Lightweight and indestructible, these planters have the look of terra cotta clay - with three standard available colors: Solid and Granite in various shades. Please call ACW Supply for more information on Venus Colors.

Made of 100% Pure Virgin Polyethylene

### Vase Planters

Item Number	Matching Saucer	Top O.D.	Top I.D.	Base I.D.	Height	Gallon	Lbs.
VVVP-A	VVPS-1	15"	13"	9.5"	14"	5	6
VVVP-B	VVPS-2	15"	13"	11"	8"	3	3.5
VVVP-C	VVPS-3	21"	18.5"	13"	18"	14	9
VVVP-D	VVPS-4	26"	23"	15"	21"	25	14
VVVP-E	VVPS-5	29"	26"	15.5"	24"	34	20
VVVP-F	VVPS-6	34"	30.5"	18"	27"	59	30
VVVP-G	VVPS-7	38"	34.5"	20.5"	29"	81	36
VVVP-H	VVPS-8	42"	39"	23"	33"	109	47



### Vase Planter Saucers

Item Number	Matching Planter	Diameter	Height	Lbs.
VVVPS-1	WVP-A	13"	1.5"	1
VVVPS-2	WVP-B	14"	1.5"	1.5
VVVPS-3	WVP-C	16"	1.5"	2
VVVPS-4	WVP-D	18"	2"	3
VVVPS-5	WVP-E	19"	2"	4
VVVPS-6	WVP-F	22.5"	2"	4.5
VVVPS-7	WVP-G	24.5"	2"	6
VVVPS-8	WVP-H	26.5"	2"	7



### Square Planters

Item Number	Top O.D.	Top I.D.	Base I.D.	Height	Gallon	Lbs.
VVSP-A	17"	12"	10"	15"	8	8
VVSP-B	20"	15"	13.5"	19"	16	12
VVSP-C	24"	19"	16.5"	24"	33	18
VVSP-D	30"	25"	22"	27"	66	36
VVSP-E	36"	31"	28"	30"	113	60



### Square Planter Trays

Item Number	Matching Planter	Length	Width	Height	Lbs.
WSPT-1	WSP-A	15.5	15.5"	1.5"	2
WSPT-2	WSP-B	18.5	18.5"	1.5"	3.5
WSPT-3	WSP-C	22"	22"	2"	5
WSPT-4	WSP-D	28"	28"	2"	7.5
WSPT-5	WSP-E	34"	34"	2"	11



For 30 years Landmark Plastic has been making life easier and less chaotic for growers, from propagation to patio. Their wide range of plastic containers, trays, packaging and growing systems for the horticultural industry were all designed with a deep understanding of what growers need. And what they don't.



**L Series Packs**

Product Name	Part Code	Cell					Pack		PCS/CTN
		Length (in)	Width (in)	Depth (in)	Liquid Vol (U.S. / metric)	Dry Vol (cu. in.)	Liquid Vol (U.S. / metric)	Dry Vol (cu. in.)	
L 601 Pack	L-601	6.44	4.85	2.33	1.13 qt/1.1 L	65.05	1.13 qt/1.1 L	65.05	100
L 606 Pack	L-606	2.35	2.15	2.33	5.09 fl oz/150.3 mL	9.18	1.91 pt/903.8 mL	55.1	100
L 804 Pack	L- 804	2.35	2.35	2.33	5.92 fl oz/175.1 mL	10.68	1.48 pt/700.3 mL	42.72	100
L 806 Pack	L- 806	2.35	1.55	2.33	3.58 fl oz/105.9 mL	6.47	1.34 pt/634.1 mL	38.81	100
L 809 Pack	L-809	1.15	1.15	2.33	2.17 fl oz/64.2 mL	3.92	1.22 pt/577.3 mL	35.31	100
L 1004 Pack	L-1004	2.4	1.85	2.33	4.36 fl oz/128.9 mL	7.86	1.09 pt/515.8 mL	31.44	100
L 1006 Pack	L-1006	1.85	1.75	2.33	2.64 fl oz/78.1 mL	4.77	15.87 fl oz/469.3 mL	28.63	100
L 1201 Pack	L-1201	4.85	3.15	2.33	1.01 pt/477.9 mL	29.29	1.01 pt/477.9 mL	29.29	100
L 1203 Pack	L-1203	3.15	1.55	2.33	4.77 fl oz/141.1 mL	8.6	14.30 fl oz/422.9 mL	25.81	100
L 1204 Pack	L-1204	2.35	1.45	2.33	3.48 fl oz/102.9 mL	6.29	13.93 fl oz/412.0 mL	25.14	100
L 1206 Pack	L-1206	1.55	1.55	2.33	2.00 fl oz/59.1 mL	3.6	11.97 fl oz/354.0 mL	21.6	100
L 1801 Pack	L-1801	3.1	3.1	2.33	10.28 fl oz/304.0 mL	18.55	10.28 fl oz/304.2 mL	18.55	100
L 1803 Pack	L-1803	3	1.7	2.33	2.51 fl oz/74.2 mL	4.53	7.54 fl oz/223.0 mL	13.6	100
L 1804 Recessed Cell Pack	L-1804RC	1.38	1.38	2.33	1.02 fl oz/30.2 mL	1.84	4.08 fl oz/120.7 mL	7.36	100
L 2401 Pack	L-2401	3.1	2.25	2.33	7.07 fl oz/209.1 mL	12.75	7.07 fl oz/209.1 mL	12.75	100
L 3601 Pack	L-3601	2.25	1.96	2.33	4.16 fl oz/123.0 mL	7.51	4.16 fl oz/123.0 mL	7.51	100
L 1020 Center Rib Tray Deep	L-1020CRD	21.22	10.8	2.72	-	-	-	-	100

**L Series Super Jumbo/Deep Packs**

Product Name	Part Code	Cell					Pack		PCS/CTN
		Length (in)	Width (in)	Depth (in)	Liquid Vol (US/Metric)	Dry Vol (cu.in)	Liquid Vol (US/Metric)	Dry Vol (cu.in.)	
L 606 Super Jumbo Pack	L-606SJ	2.35	2.15	3.13	6.90 fl oz/204.1 mL	12.45	1.29 qt/1.2 L	74.69	100
L 804 Super Jumbo Pack	L- 804SJ	2.46	2.47	3.05	6.20 fl oz/183.4 mL	11.11	1.55 pt/733.4 mL	44.44	100
L 806 Super Jumbo Pack	L- 806SJ	2.35	1.6	3.12	4.37 fl oz/129.2 mL	7.88	1.64 pt/776.0 mL	47.27	100
L 1204 Deep Pack	L-1204D	2.63	1.72	2.75	4.10 fl oz/121.3 mL	7.4	1.02 pt/482.6 mL	29.41	100



### L Series Trays



Product Name	Part Code	Tray			Packaging	
		Length (in)	Width (in)	Depth (in)	PCS/CTN	Full pallet only
L 1020 Center Rib Tray	L-1020CR	21.22	10.8	2.33	100	-
L 1020 NCR Tray (with or w/o drainage holes)	L-1020NCR(N)	21.22	10.8	2.33	100	-
L 1020 R6	L-1020R6	21.22	10.8	2.33	100	Yes
L 1020 R8	L-1020R8	21.22	10.8	2.33	100	Yes
L 1020 R12 Tray	L-1020R12	21.22	10.8	2.33	100	Yes
L 1020 R18 Tray	L-1020R18	21.22	10.8	2.33	100	-
L 1020 R18 - Individual	L-R18IND	21.22	10.8	2.33	100	-
L 1020 Injection Molded Web Tray - Solid Side	I-L1020SS	21.13	10.67	2.39	50	Yes
L 1020 Injection Molded Web Tray - ALT Solid Side	I-L1020ISS	21.13	10.63	2.31	50	Yes
L 1020 Injection Molded R6 Web Solid Side	I-LR6ISS	20.88	10.45	2.12	100	Yes

### T Series Packs (10" x 20")



Product Name	Part Code	Cell					Pack		PCS/CTN
		Length (in)	Width (in)	Depth (in)	Liquid Vol (US/Metric)	Dry Vol (cu.in.)	Liquid Vol (US/Metric)	Dry Vol (cu.in.)	
T 209 Tray/Pack	C-T209	3.08	3.02	3.5	13.9 fl oz/411.1 mL	25.1	3.91 qt/3.7 L	-	100
T 804 Pack	C-T804	2.28	2.24	2.61	6.10 fl oz/180.4 mL	11	1.52 pt/719.2 mL	44	100
T 806 Pack	C-T806	2.28	1.5	2.61	3.78 fl oz/111.8 mL	6.82	1.42 pt/671.9 mL	40.9	100
T 1203 Pack	C-T1203	3.03	1.53	2.61	5.18 fl oz/153.2 mL	9.35	15.55 fl oz/459.9 mL	28.06	100
T 1204 Pack	C-T1204	2.25	1.45	2.61	3.76 fl oz/111.2 mL	6.79	15.05 fl oz/445.1 mL	27.16	100
T 1206 Pack	C-T1206	1.45	1.44	2.61	2.16 fl oz/63.9 mL	3.9	12.96 fl oz/383.3 mL	23.4	100

### T Series Super Jumbo Packs



Product Name	Part Code	Cell					Pack		PCS/CTN
		Length (in)	Width (in)	Height (in)	Liquid Vol (US/Metric)	Dry Vol (cu.in.)	Liquid Vol (US/Metric)	Dry Vol (cu.in.)	
T 606 Super Jumbo Pack	C-T606SJ	2.21	2.03	3.25	6.05 fl oz/178.9 mL	10.92	1.14 qt/1.1 L	65.54	100
T 1202 Super Jumbo Pack	C-T1202SJ	3	2.13	3.25	9.35 fl oz/276.5 mL	16.87	1.17 pt/553.6 mL	33.75	100

### T Series Trays

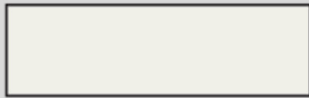


Product Name	Part Code	Seasonal	Tray			PCS/CTN
			Length (in)	Width (in)	Depth (in)	
T Tray R6 - Extra Deep	C-TR6NXD	-	20	10	2.71	100
T Tray R8 - Extra Deep	C-TR8XD	-	20	10	2.71	100
T Tray R12 - Extra Deep	C-TR12NXD	-	20	10	2.71	100
T Tray R18 - Extra Deep	C-TR18IXD	-	20.00"	10.00"	2.71"	100
T Tray NCR - Extra Deep	C-TNCRXD	Yes	20	10	2.71	100
T Injection Molded Tray	I-TIM	-	20	10	2.63	100

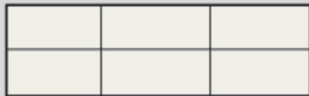


# TRAY CONFIGURATIONS

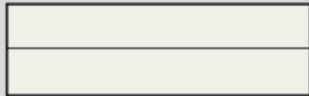
# PACK CONFIGURATIONS



L-L1020SS, I-L1020ISS, I-TIM,  
L-1020NCR(N), C-TNCRXD  
Compatible with all corresponding pack trims



I-LR6ISS, I-LSIM, I-TSIM  
Compatible with 600 and 1200 series packs



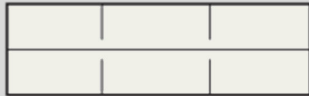
L-1020CR, L-1020CRD  
Compatible with 600, 800, 1000, 1200 series packs



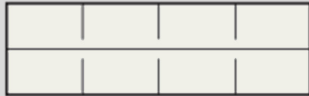
L-1020R18  
Compatible with L 1800 series packs  
(excluding rectangular packs)



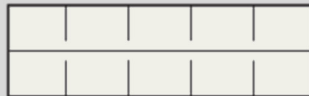
C-TSSR6NCR  
Compatible with 200 series packs and C-TSS306



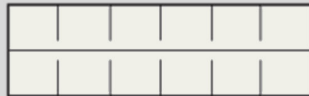
L-1020R6, C-TR6NXD, C-TSR6XD, C-TSSR6  
Compatible with 600 and 1200 series packs



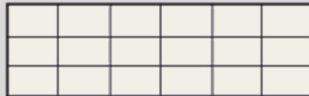
L-1020R8, C-TR8XD, C-TSR8JD, C-NPR8  
Compatible with 800 series packs  
(excluding C-NP803LSQ)



C-LSR10, C-TSSR10  
Compatible with 500 and 1000 series packs

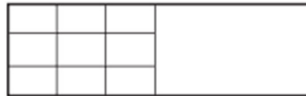


L-1020R12, C-TR12NXD, C-NPR12  
Compatible with 1200 series packs

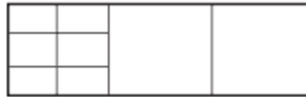


L-R18IND, C-TR18IXD  
Compatible with 1800 series packs, individual cells

## 200-500 Series Packs



C-TS 209, C-TSS209



C-TSS306



C-TSS508

## 600 Series Packs



L 601

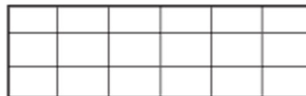


L 606, L 606SJ, LS 606SJ, VS 606  
T 606SJ, TS 606SJ



L 612

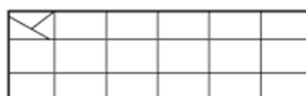
## 1800 Series Packs



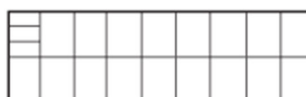
L 1801  
T 1801SP



L 1802 Rect  
T 1802 SQ



L 1803



L 1803 Rect  
T 1803 Rect

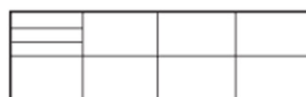


L 1804

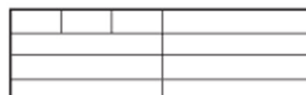
## 800 Series Packs



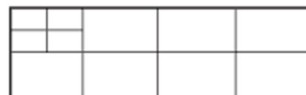
L 801



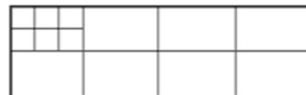
C-NP803



C-NP803LSQ



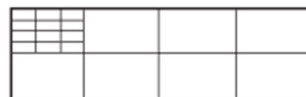
L 804  
T 804, T 804SJ



L 806, L 806SJ  
T 806, T 806SJ, TS 806SJ

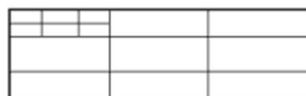


L 808



L 812

## 900 Series Packs



T 906

## 1000 Series Packs



L 1001

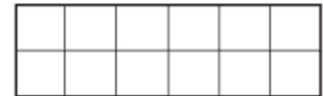


L 1004  
VS 1004



L 1006

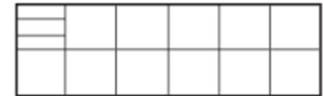
## 1200 Series Packs



L 1201



L 1202  
T 1202SJ



L 1203

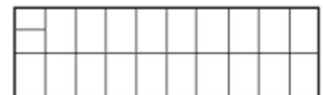


L 1204, L 1204D, LS 1204, VS 1204  
T 1204, TS 1204



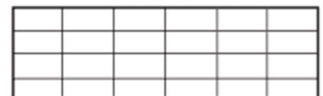
L 1206  
T 1206

## 2000 Series Packs



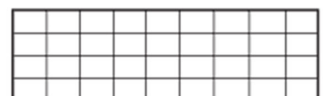
T 2002

## 2400 Series Packs



L 2401

## 3600 Series Packs

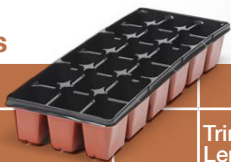


L 3601





## Landscape Trays



			Tray			Cell			Pack		
			Trim Length	Trim Width	Trim Depth	Cell dim.	Liquid Vol	Dry Vol	Liquid Vol	Dry Vol	
Product Name	Part Code	Handle	(in)	(in)	(in)	(in)	(US/Metric)	(cu.in.)	(US/Metric)	(cu.in.)	PCS/CTN
T 18 Count Landscape Tray	C-TLF18		20	10	3.47	2.98 x 2.90	13.10 fl oz /387.4 mL	23.6	1.84 gal /7.0 L	424.45	100
T 124 Tray/Pack	C-T124TP	Yes	15.15	10.14	2.75	2.13 x 2.13	5.14 fl oz /152.0 mL	9.28	3.86 gal /14.6 L	222.61	100
T 124 Deep	C-T124D	Yes	15	10	3.25	2.28 x 2.26	6.22 fl oz /184.0 mL	11.23	1.17 gal /4.4 L	269.48	100
TSS 18 Count Landscape Tray	C-TSSLF18		19.88	7.5	3.25	3.12 x 2.24	8.90 fl oz /263.2 mL	16.1	1.25 gal /4.7 L	289.8	100
TSS 24 Count Landscape Tray	C-TSSLF24		19.88	7.5	3.06	2.32 x 2.20	2.90 fl oz /174.5 mL	10.6	1.12 gal /4.2 L	254.4	100
TSS 32 Count Landscape Tray	C-TSSLF32	Yes	19.88	7.5	2.77	2.32 x 1.79	3.90 fl oz /115.3 mL	6.92	3.90 qt /3.7 L	221.18	100
18 Count Tray / 70mm Paper Pot Tray	X-70PT18		21.2	10.8	3.25	3.3" width	-	-	12.7 oz. /375 mL	-	-

## Market Packs



			Tray					Cell				
			Trim Length	Trim Width	Depth	Liquid Vol	Dry Vol	Cell dim.	Liquid Vol	Dry Vol		
Product Name	Part Code	Handle	(in)	(in)	(in)	(US/Metric)	(cu.in)	(in)	(US/Metric)	(cu.in.)	PCS/CTN	
T 24 Tray/Pack	C-T24TP	Yes	10	10	2.61	2.33 qt/ 2.2 L	134.74	1.38 x 2.13	3.11 fl oz /92.0 mL	5.61	200	
T 9 Tray/Pack	C-T9TP	Yes	10	10	3.5	3.49 qt /3.3 L	201.56	3.00 x 3.00	12.41 fl oz /367.0 mL	22.4	200	
T 209 Tray/Pack (2 packs/sheet)	C-T209	Yes	20	10	3.5	3.91 qt /3.7 L	225.9	3.02 x 3.08	13.90 fl oz /411.1 mL	25.1	100	
TSS 209 Pack	C-TSS209	Yes	19.88	7.5	3.8	2.68 qt /2.5 L	165.6	2.29 x 3.10	10.18 fl oz /301.1 mL	18.4	100	
TSS 306 Pack (3 packs/sheet)	C-TSS306	Yes	19.88	7.5	3.34	1.73 qt /1.6 L	99.6	3.10 x 2.30	9.20 fl oz /272.1 mL	16.6	100	
3.50 Round Basket/Pack (306 Pack)	X-3.5RPP	Yes	10.88	7.13	3.38	2.14 qt /2.0 L	123.39	3.38 RD	11.40 fl oz /337.1 mL	20.57	300	
T Pot/Pack 6 (306 Pack)	C-TPP6	Yes	10.11	6.73	3.5	2.16 qt /2.0 L	124.48	3.13 x 3.16	11.05 fl oz /340.1 mL	20.75	300	
LS Half Flat Pack 20 (2 packs/sheet)	C-LSH-FP20	Yes	20.94	8.44	3	2.51 qt /2.4 L	144.75	1.87 x 1.67	4.01 fl oz /118.6 mL	7.24	100	
T Half Flat Pack 24 (2 packs/sheet)	C-THP24	Yes	19.87	9.87	3.23	2.64 qt /2.5 L	152.31	2.19 x 1.34	3.52 fl oz /104.1 mL	6.35	100	
T Half Flat Pack 20 (2 packs/sheet)	C-THP20	Yes	19.87	9.87	3.23	2.77 qt /2.6 L	159.88	2.20 x 1.55	4.43 fl oz /131.0 mL	7.99	100	
12 Count Market Pack	C-T12P	Yes	10	10	4	3.45 qt /3.3 L	198.94	3.00 x 2.25	9.4 fl oz /278 mL	16.54	100	

Handle	Part Code	Length (in)	Width (in)	PCS/CTN	CTN/SKID
19" Split End Locking Handle	X-19SEH	19	1	1200	24





## Seeder Trays

			Length	Width	Depth		
Product Name	Product Code	Seasonal	(in)	(in)	(in)	PCS/CTN	CTN/SKID
10 Row Seeder Tray	P-SEED10	Yes	21.5	11	1.25	100	32
20 Row Seeder Tray	P-SEED20	Yes	21.5	11	1.25	100	32
Open Seeder Tray	P-OPENST	Yes	21.23	10.8	1.38	100	32



## Square Pots



Product Name	Part Code	Seasonal	Dimensions		Volume		Packaging		
			Diameter (in)	Depth (in)	Liquid (US/Metric)	Dry (cu.in)	PCS/CTN	CTN/SKID	Bulk
2.25 Square Pot	X-225P1920	-	2.19	3	4.90 fl oz/145.0 mL	8.85	1920	36	-
3.00 Square Press Fit Pot	X-3P800	Yes	2.63	2.25	6.00 fl oz/177.4 mL	10.8	800	52	-
3.00 Square Pot Deep (root channels)	X-3PD	-	2.63	3.5	9.50 fl oz/281.0 mL	17.09	800	48	24480
3.00 Square Pot Extra Deep	X-3PXD400	-	3	4.25	13.30 fl oz/393.3 mL	23.98	400	72	16660
3.00 Square Pot	X-325P	Yes	3	3.25	10.36 fl oz/306.4 mL	18.7	1000	72	-
True 1.00 pt T Pot Deep	X-325TPD	-	3.25	4.2	1.00 pt/473.2 mL	29.02	1,200	36	21,710
T-Pots (3.25" sq.)	C-TP900	-	3.25	3.5	14.40 fl oz/425.9 mL	25.94	900	36	15236
4.00 Individual Econ Pot	X-4IPE900	-	3.5	3.5	1.08 pt/511.0 mL	31.12	900	48	26640
4.00 Square Press Fit Pot	X-4P	-	3.5	3.5	1.05 pt/496.8 mL	30.33	450	48	12768
4.00 Square Pot Extra Deep (root channels)	X-4PXD	-	3.5	5.02	1.52 pt/719.2 mL	43.94	450	32	10560
4.50 Square Press Fit Pot	X-4.5P	-	4.19	3.63	1.69 pt/799.7 mL	48.82	375	28	7450
4.50 Square Pot Deep	X-4.5PD	-	4.19	4.88	1.15 qt/1.1 L	66.64	375	28	6800
4.50 Square Extra Deep Pot	X-4.5PXD	-	4.2	5.38	1.25 qt/1.2 L	72.4	250	40	6,500
3.00 Square Press Fit Pot	X-3IPE992	-	2.63	2.25	6.00 oz. / 177.4 mL	10.8	992	48	23,040

## Sheet of Pots



Product Name	Part Code	Seasonal	Dimensions		Volume		Packaging		
			Diameter (in)	Depth (in)	Liquid (US/Metric)	Dry (cu.in)	PCS/CTN	CTN/SKID	Bulk
3.00 Square Sheet of Pots (32)	X-3SQSP	-	2.45 x 2.47	3.05	6.20 fl oz/183.4 mL	11.17	100	24	2400
3.50 Sheet of Pots (18)	X-3.5SPWB	-	3.53 x 3.51	3	13.40 fl oz/396.2 mL	24.2	100	32	-
3.50 Sheet of Pots Deep (18)	X-3.5SPD	-	3.49 x 3.46	3.23	13.60 fl oz/402.2 mL	24.47	100	32	-
3.50 Sheet of Pots Extra Deep (18)	X-3.5SPXD	Yes	3.48 x 3.47	3.5	14.70 fl oz/434.7 mL	26.55	100	20	-
3.50 Sheet of Pots Deep (12 - 3 x 4 config)	X-3.5SPD3X4	-	3.49x3.46	3.23	13.6 fl oz/402.2 ml	24.7	100	32	-
3.50 Sheet of Pots Deep (12 - 2 x 6 config)	X-3.5SPD2X6	-	3.49x3.46	3.23	13.6 fl oz/402.2 ml	24.7	100	32	-
3.50 Sheet of Pots Deep (20)	X-3.5SPD20	Yes	3.40 x 3.40	3.25	14.20 fl oz/419.9 mL	25.63	100	20	-
4.50 Sheet of Pots (15)	X-4.5SP15	-	4.09 x 4.09	3.65	1.55 pt/733.4 mL	44.85	100	16	1600
4.50 Sheet of Pots Deep (15)	X-4.5SPD	Yes	4.24 x 4.24	4.88	1.97 fl oz/932.2 mL	56.75	100	16	-
LS 2101 Sheet of Pots (21)	C-LS2101SP	Yes	2.68 x 2.86	3.25	8.90 fl oz/263.2 mL	16.05	100	36	3600
T 1801 Sheet of Pots (18)	C-T1801SP	-	3.14 x 3.18	3.27	12.50 fl oz/369.7 mL	22.58	100	36	3600
T 1801 Sheet of Pots (18) Economy	C-T1801SPE	-	3.14 x 3.18	3.27	12.50 fl oz/369.7 mL	22.58	100	36	3600
2001 T Pot Sheet of Pots (20)	C-T2001SP	Yes	3.00 x 3.00	3.31	12.50 fl oz/369.7 mL	22.58	100	24	-



### Square Pot Trays



Product Name	Part Code	Seasonal	Dimensions			Packaging		
			Length (in)	Width (in)	Depth (in)	PCS/CTN	CTN/SKID	Bulk
2.25 Square Pot Tray (32)	X-2SPT32	-	18.1	9.12	2.25	100	40	4050
3.00 Square Pot Deep Tray (14)	X-3PDT14	Yes	18.28	5.28	2.25	150	54	8100
3.00 Square Pot Extra Deep Tray (20)	X-3PXDT20	Yes	15.19	12.19	2	100	36	3600
3.00 Sheet of Pots Tray (32)	X-3SPT32	-	21.23	10.79	2	100	32	-
3.00 Press-Fit Tray (32)	L-PF32TRAY	-	21.23	10.79	1.5	100	32	3200
LS Tray R21 Individual Economy	C-LSR21IE	Yes	21	8.5	1.88	100	40	-
4.00 Square Press-Fit Tray (12) (2 X 6 config)	L-PF122X6	-	21.05	7.24	1.94	100	40	6000
4.00 Square Press-Fit Tray (12)	L-PF12TRAY	-	13.82	10.4	2.31	100	48	2000
4.00 Press Fit Tray (18)	L-PF18TRAY	-	21.23	10.79	2.31	100	32	3200
4.00 Square Maxi-Grow Pot Tray (15)	X-T15S40MG	-	19.5	11.63	1.63	-	-	1,920
LS R10 Tray (4.5" Sq. Pot Tray) (10)	C-LSR10	-	20.94	8.44	1.88	100	40	4000
4.50 Square Press-Fit Tray (12)	L-4.5PF12	-	16.97	12.75	2.31	100	20	2000
4.50 Square Pot Tray (10)	X-45SPT10	-	20.94	8.44	2.02	90	30	2,600
4.50 Square Pot Tray (12)	X-4.5SPT12	Yes	16.88	12.68	2.38	100	20	2,000
4.50 Square Press-Fit (15)	L-PF15TRAY	-	21.1	12.71	2.31	50	32	1600
4.50 Square Maxi-Grow Pot Tray (15)	X-T15S45MG	Yes	-	-	-	50	40	2000

### Co-Extruded Thermoformed Pots



Product Name	Part Code	Dimensions		Volume		Packaging		
		Diameter (in)	Depth (in)	Liquid (US/Metric)	Dry (cu.in)	PCS/CTN	CTN/SKID	Bulk
3.50 Standard Round Pot	X-3.5P450	3.5	3.25	12.27 fl oz/363 mL	22.15	450	48	11,176
4.00 Standard Rd Maxi-Grow TF Pot	X-4RMGT	4	3.49	1.00 pt/482 mL	29.4	825	42	24192
4.33 (11 cm) Standard Rd Maxi-Grow TF Pot	X-43RMGT	4.33	3.9	1.25 pt/591 mL	35.64	900	36	17000
4.33 Deep Round Maxi-Grow TF Pot	X-43DRMG	4.33	5	1.58 pt/748 mL	45.6	540	36	12000
4.50 Round Geranium Maxi-Grow TF Pot	X-45RMGT	4.5	4.02	1.37 pt/651 mL	39.7	675	48	15000
5.00 Standard Rd Maxi-Grow TF Pot	X-5RMGT	5	4.57	1.06 qt/1.00 L	61.02	360	48	9792
Trade 6.00 Maxi-Grow TF Pot	X-T600	5.3	4.51	1.25 qt/1.18 L	72.3	240	48	20160
True Quart Maxi-Grow TF Pot with Tag Slot	X-TQTMGT	4.75	5.27	1.02 qt/0.97 L	59.1	600	24	8640
8.00 Mum Pan Maxi-Grow TF	X-8MPMGT	8	5	3.04 qt/2.88 L	175.44	300	20	7800
9.00 Mum Pan Maxi-Grow TF	X-9MPMGT	9	5.9	1.18 gal/4.46 L	271.9	100	40	3000
5.00 Azalea Maxi-Grow TF Pot	X-5AMGT	5	3.61	1.67 pt/790mL	48.21	440	48	12000
6.00 Azalea Maxi-Grow TF Pot	X-6AMGT	6	4.38	1.40 qt/1.33 L	81.04	220	48	15000
6.50 Azalea Maxi-Grow TF Pot	X-65AMGT	6.5	5	2.08 qt/1.97 L	120.12	240	48	10500
7.50 (19 cm) Azalea Maxi-Grow TF Pot	X-75AMGT	7.5	5.71	3.02 qt/2.86 L	174.5	220	27	7200
6.50 Nursery Trade Gallon	X-65NTGT	6.5	6.5	2.50 qt/2.37 L	144	200	48	11,550
8.50 Nursery Trade 2 Gallon	X-85NT2G	8.5	8.5	1.50 gal/5.67 L	346.2	100	24	5800



### Injection Molded Pots



Product Name	Part Code	Drainage	Dimensions	Volume		PCS/CTN
			Width x Depth (in)	Liquid (US/Metric)	Dry (cu.in)	
3.00 Standard Round Pot - Maxi-Grow	I-R300MG	Bi-Level	3.00 x 2.63	5.90 fl oz/174.5 mL	10.62	1440
3.50 Standard Round Pot - Maxi-Grow	I-R350MG	-	3.50 x 3.06	9.50 oz / 280 mL	17.09	1500
3.50 Standard Round Pot Tall - Maxi-Grow	I-R350MGT	-	3.50 x 3.38	11.30 oz. / 335 mL	20.44	1200
4.00 Standard Round Pot - Maxi-Grow	I-R400MG	Bi-Level	4.00 x 3.50	15.60 fl oz/461.4 mL	28.07	912
4.00 Azalea Pot - Maxi-Grow	I-A400MG	Bi-Level	3.88 x 2.88	12.50 fl oz/369.7 mL	22.58	1800
4.50 Geranium Pot - Maxi-Grow	I-G450MG	Bi-Level	4.50 x 4.00	1.27 pt/600.9 mL	36.74	900
6.00 Azalea Pot	I-A600	Traditional Single	6.00 x 4.50	1.51 qt/1.4 L	87.26	200
Trade 6.00 Pot - Maxi Grow Plus	I-T600MP	Side - Bottom	5.25 x 4.50	1.28 qt/1.2 L	73.72	216
6.00 Azalea Pot - Maxi-Grow Plus	I-A600MP	Side-Bottom / Bi-Level	6.00 x 4.75	1.57 qt/1.5 L	90.8	252
6.00 Standard Round Pot - Maxi-Grow	I-R600MG	Bi-Level	6.00 x 5.50	1.78 qt/1.7 L	102.79	204
6.50 Azalea Pot - Maxi-Grow Plus	I-A650MP	Side-Bottom / Bi-Level	6.50 x 5.13	2.03 qt/ 1.9 L	117.2	260
7.00 Azalea Pot - Maxi-Grow	I-A700MG	Bi-Level	6.88 x 5.00	2.20 at/2.1 L	-	264
7.50 Azalea Pot - Maxi-Grow	I-A750MG	Bi-Level	7.50 x 5.00	2.75 qt/2.6 L	158.66	248
8.00 Standard Round Pot- Maxi-Grow Plus	I-R800MP	Side-Bottom / Bi-Level	8.00 x 6.56	1.01 gal/3.8 L	233.9	136
8.00 Standard Round Pot (Hanging Version)	I-R800H	Maxi-Mizer	8.00 x 6.56	1.01 gal/3.8 L	233.9	136
8.00 Mum Pan	I-MP800	Side-Bottom/ Bi-Level	8.00 x 5.00	3.09 qt/2.9 L	178.49	258
8.00 Azalea Pot - Maxi-Grow	I-A800MG	Bi-Level	7.75 x 5.75	3.33 qt/3.2 L	192.35	282
8.50 Azalea Pot	I-A850	Traditional	8.38 x 6.00	1.08 gal/4.1 L	248.67	185
10.00 Azalea Pot	I-A10	Traditional	9.75 x 7.25	1.71 gal/6.5 L	395.3	50
2.25 Square Rose Pot	I-SR225	Side	2.25 x 3.00	5.50 fl oz/162.7 mL	10	1584
3.00 Square Rose Pot	I-SR300	Side - Bottom	2.69 x 2.78	8.50 fl oz/251.4 mL	15.3	1176
3.25 Square Rose Pot	I-SR325	-	-	-	-	850
4.00 Maxi-Lock Square (tag slot)	I-S400MGX	Bi-Level	3.50 x 3.00	13.00 fl oz/384.5 mL	23.49	1260
4.00 Square Pot True - Maxi-Grow	I-S400MG	Bi-Level	4.00 x 3.50	1.15 pt/544.2 mL	33.07	900
4.50 Square Pot - Maxi-Grow	I-S450MG	Bi-Level	4.50 x 3.63	1.35 fl oz/638.8 mL	-	870

### Saucers

Product Name	Part Code	Seasonal	PCS/CTN	CTN/SKID	Bulk
4.50 Saucer	I-AS4450X	Yes	640	24	-
4.50 Deco Pot Saucer	I-DPS450	Yes	585	50	23400
Saucer for I-A600 & I-A650	I-SCSP6X	Yes	240	48	-
6.50 Deco Pot Saucer	I-DPS650	Yes	280	40	4500
8.00 Saucer	I-SCP8	Yes	136	36	-
8.50 Deco Pot Saucer	I-DPS850	Yes	260	36	-
11.50 Deco Pot Saucer	I-DPS1150	Yes	100	32	-





### Nursery Containers



		Seasonal	Dimensions		Volume		Packaging		
			Diameter (in)	Depth (in)	Liquid (US/Metric)	Dry (cu.in)	PCS/SLV	PCS/CTN	Full pallet only
Product Name	Part Code		(in)	(in)	(US/Metric)	(cu.in)	PCS/SLV	PCS/CTN	Full pallet only
100 Nursery Container	I-NC1QT	Yes	4.4	4.75	1.80 pt/851.7 mL	51.87	-	408	-
300 Nursery Container	I-NCTGAL	-	6.13	6.87	2.64 qt/2.5 L	152.06	68	-	Yes
400 Nursery Container	I-NCSGAL	-	7.15	7	1.01 gal/3.8 L	232.38	75	-	Yes
600 Nursery Container	I-NCT2GAL	-	8.04	8.5	1.47 gal/5.6 L	339.17	65	-	Yes
1000 Nursery Container	I-NCT3GAL	-	10.41	9.5	2.79 gal/10.6 L	644.41	59	-	Yes

### Nursery Carrying Trays



		Seasonal	Dimensions			PCS/CTN
			Length (in)	Width (in)	Depth (in)	
Product Name	Part Code		(in)	(in)	(in)	PCS/CTN
300 Nursery Cont. Carrying Tray (S/B drainage)	X-3QTCTPP	-	19.5	12.75	2.5	50
300 Nursery Cont. Carrying Tray	X-3QTCHOPP	Yes	19.5	12.75	2.5	50
400 Nursery Cont. Carrying Tray (S/B drainage)	X-4QTCTPP	-	22.5	14.89	2.5	50
400 Nursery Cont. Carrying Tray	X-4QTCHOPP	Yes	22.5	14.89	2.5	50

### Nursery Transport Trays



		Seasonal	Dimensions			PCS/CTN
			Length (in)	Width (in)	Depth (in)	
Product Name	Product Code		(in)	(in)	(in)	PCS/CTN
True Qt/100 NC Transport Tray PP (12)	X-QTPWL12	-	19	14.12	4.81	60
300 Nursery Cont. Trans Tray Wide Lip (3)	X-3QTTWL3	-	19.88	6.63	5.78	75
300 Nursery Cont. Trans. Tray (6)	X-65NGTPB	-	19.63	13	6.71	50

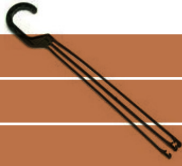
### Hanging Baskets



		Drainage	Dimensions		Volume		PCS/CTN
			Diameter (in)	Depth (in)	Liquid (US/Metric)	Dry (cu.in)	
Product Name	Part Code		(in)	(in)	(US/Metric)	(cu.in)	PCS/CTN
Smooth Bowl, with Saucer	I-HPS600	Side - Bottom	6.88	4.5	1.40 qt/1.32 L	19.53	3750
Hanging Basket, with Saucer	I-HPS800	Side - Bottom	8.44	5	3.06 qt/2.90 L	176.8	90
8.00 Fluted Basket	I-FHB8	Single Cone	8.25	5.25	2.81 at/2.66 L	162.3	50
10.00 Imperial Decorative, Saucerless	I-IHB10	Maxi-Mizer	10	6.85	1.50 gal/5.68 L	346.5	50
Dlx Trad., Saucerless Textured	I-DT10	Maxi-Mizer	10.5	5.21	1.25 gal/4.75 L	289.9	50
Dlx Trad., with Saucer Textured - NO HANGER	I-DTS10NH	Side - Bottom	10.5	5.44	1.25 gal/4.75 L	289.9	50
Dlx Trad., with Saucer Textured (21" WIRE HANGER INC.)	I-DTS10	Side - Bottom	10.5	5.44	1.25 gal/4.75 L	289.9	50
Deco - Swirl, Saucer less	I-DS12	Maxi-Mizer	11.81	7.22	2.25 gal/8.53 L	520.23	25
Deco - Swirl, w/Saucer	I-DSS12	Maxi-Mizer	11.81	7.22	2.25 gal/8.53 L	520.23	25
12.00 Serene Hanging Basket	K-SDB12		12	7.5	2.0 gal/7.57 L	464	50



## Hangers



Product Name	Product Code	Seasonal	Dimensions		Packaging	
			Number of strands	Length	PCS/CTN (Case/Bulk)	CTN/SKID (Case/Bulk)
13" Snap Clip Hanger for 6.00 basket	I-13HP	Yes	3	13"	500 / 625	30 / 30
16" Double Clip Auto Hanger	I-16ACL	-	3	16"	50 / 450	108 / 24
19" Snap Clip Hanger	I-19SPCL	-	3	19"	50 / 450	80 / 28
22" Double Clip Auto Hanger (4 prong)	K-22ACL	-	4	22"	25 / 500	80 / 24
18" Wrapped Wire Hanger	Z-18MLH50	-	3		50	400
21" Wrapped Wire Hanger	Z-21LH50	-	3	21"	50	400
24" Wrapped Wire Hanger	Z-24164STW	-	4	24"	50	200

## Botanica Collection



Product Name	Part Code	Dimensions		Volume		Packaging	
		Diameter (in)	Depth (in)	Liquid (US/Metric)	Dry (cu.in)	PCS/CTN	CTN/SKID
10.00 Inspiration Container	K-INS10	10	7	1.39 gal/5.25 L	320	75	24
11.50 Inspiration Bowl	K-CI1303	11.6	5.5	1.5 gal / 5.7 L	352	30	48
12.00 Fluted Oval Planter	K-OVL12	13.00 x 4.875	4	2.48 qt/2.35 L	143.41	100	32
12.00 Fluted Oval Saucer	K-OVSL12	11.84 x 4.34	0.9	-	-	100	64
14.00 FLUTED Decorative Container	K-FPN14	14.25	9.5	3.62 gal/13.71 L	837	30	16
16.00 Fluted Oval Planter	K-OVL16	16 x 6.75	6	1.82 gal/6.89 L	419.5	50	36
16.00 Fluted Oval Saucer	K-OVSL16	14.64 x 5.76	1	-	-	50	72
10.00 Treasure Series Bowl	K-TSB10	10	5.34	1.00 gal/3.79 L	231.3	tbd	tbd
12.00 Treasure Series Bowl	K-TSB12	12	5.67	1.55 gal/5.89 L	359.1	50	48
14.00 Treasure Series Bowl	K-TSB14	14	5.75	2.09 gal/7.9 L	482.1	50	36
8.00 Saturn Decorative Container	K-SAT8	8.78	5.73	3.42 qt/3.24 L	197.4	100	40
True 10.00 Saturn Decorative Container	K-TSAT10	10	7.94	1.60 gal/6.06 L	369.8	50	32
10.00 Saturn Decorative Container	K-SAT10	11.48	7.86	2.0 gal/7.75 L	473.6	50	40
12.00 Saturn Decorative Container	K-SAT12	13.45	9.27	3.45 gal/13.07 L	797.3	40	30
14.00 Saturn Decorative Container	K-SAT14	15.87	11.19	5.75 gal/21.80 L	1330.6	30	16
7.50 Serene Series Square	K-SMSQ75	7.5	7.25	1.11 gal/ 4.21 L	256.7	100	72
12.00 Serene Series Round - True	K-SDC12	12	9.11	2.5 gal/ 9.46 L	577.8	50	36
11.50 Serene Series Square	K-SMQ115	11.5	10	3.5 gal/13.23 L	807.5	25	48
10.00 Serene Series Round	K-SDC10	10	7.62	1.50 gal/5.68 L	346.6	tbd	tbd
10.00 Serene Series Square	K-SMQ100	10	7.93	2.10 gal/7.57 L	462	tbd	tbd

The Botanica Collection of pots and containers are a premium decorative series without premium prices.

- Great for container gardens, combination planters, patios and house plants
- Diversified variety of planters
- Standard colors: terra cotta, tan, chocolate brown, martini olive, black, slate
- Textured matte finish





## Transport Trays

			Dimensions			
			Length	Width	Depth	
Product Name	Part Code	Seasonal	(in)	(in)	(in)	PCS/CTN
3.50 Transport Tray (10) (handle available)	X-35TPP10B	Yes	17.83	7	3.73	100
3.50 Transport Tray (12)	X-35TP12B	-	21.25	7	3.78	50
3.50 Transport Tray (18) (Polystyrene Only)	X-3.5TPB	-	21.14	10.43	3.38	100
4.00 Transport Tray (6) (handle available)	X-4TP6B	Yes	12.04	7.94	3.5	200
4.00 Transport Tray (14)	X-4TP14B	Yes	21.13	10.63	3.5	100
4.00 Transport Tray (15) (Polystyrene Only)	X-4TP15B	-	20.25	12.13	3.5	85
4.00 Azalea Transport Tray (15)	X-4AZTP15B	Yes	20.38	12.44	3.5	100
4.00 Transport Tray (10)	C-LN4TP10B	-	20.38	8.13	3.72	75
4.33 (11 cm) Transport Tray (10)x	X-43TPB	-	21.63	8.63	4.06	100
4.33 (11 cm) Transport Tray (12)	X-43TP12B	-	17.22	13	4.12	100
4.33 Deep High Side Transport Tray (8)	X-43DTHS8	-	17	8.5	5.21	140
4.33 Deep High Side Transport Tray (10)	X-43DTH10B	-	21.63	8.63	5.21	75
4.50 Transport Tray (8)	X-45TPP8	-	19.5	10	4.25	50
4.50 Transport Tray (10) (Polystyrene Only)	X-4.5TP10B	-	22.4	8.9	4.19	75
4.50 Offset Transport Tray (10)	X-45TPS10B	-	21.23	10.8	4.06	175
4.50 Transport Tray (12)	X-4.5TPB12	-	18.99	14.11	3.96	75
4.50 Transport Tray (15)	X-4.5TPPPB	-	23.06	14.06	3.94	90
4.50 Square Transport Tray (8)	X-45ST8SBB	-	21.23	10.79	3.63	75
5.00 Azalea Transport Tray (8)	X-T5TPPB	-	20	10	3.75	100
5.00 Round Standard (13 cm) Transport Tray (8)	X-T13TPPPB	-	20	10	4.74	100
Trade 6.00 Offset Tray (6)	X-T6TOS6B	-	19.82	9.75	4.63	50
Trade 6.00 Transport Tray (8)	X-T6TPPB	-	21.56	10.76	4.56	50
6.00 Round Standard Transport Tray (6)	X-6TPRGPPB	Yes	17.64	11.5	-	100
6.00 Azalea Transport Tray (6)	X-6TPPPB	-	17.64	11.5	-	100
6.50 Transport Tray (6)	X-6.5TPPPB	-	19.63	13	5.25	100
7.50 (19 cm) Transport Tray (3)	X-75TPPP3B	-	22.5	7.5	5.87	60
True Quart Transport Tray (8)	X-QTPP8	-	19.5	10	5.3	75
True Quart Transport Tray (9) Spacer	X-QTTN9	Yes	19.77	15.15	5.46	70
300 Nursery Cont. (Trade Gallon) Trans Tray Wide Lip (3)	X-3QTTWL3	-	19.88	6.63	5.78	75
300 Nursery Cont. (Trade Gallon) Trans. Tray (6)	X-65NGTPB	-	19.63	13	6.71	50

Our transport trays are designed for easy filling, growing, transporting and retail sales.

- Durable, tear-resistant materials available on most sizes
- Bottom drainage and easy fingertip extraction
- De-nesting notches for automation equipment (selected items)
- Compatible with Landmark's injection molded and thermoformed pots
- Available in a wide array of sizes to meet all your marketing and retailing needs





### Injection Molded Containers

Poly-tainer cans are injection molded for strength and rigidity. The sturdy container is strong enough for shipping and attractively styled for selling. Available in #1 to #6 sizes and a variety of shapes including square, squat and round. Poly-tainer baskets are our most rugged injection molded containers, available up to #15. This powerhouse of a pot is perfect for shipping and selling. Convenient handles on the baskets make handling a breeze.

Poly-Tainer	Trade Size	Diameter (ID*)	Height	Containers /Cubic Yard**	Cubic cm	Cubic in	Gallon	Liter
NCARP	#1 Square	6" Square	7"	1.902	2,732	167	.72	2.73
Azalea Pot	-	6"	5"	1.527	2,269	138	.60	2.30
LC700	#1	6"	6 7/8"	1.34	2,800	170	.742	2.809
NC1GBK	#1	6"	7"	1.193	2,481	151	.66	2.48
NC2G	#2	8 1/2"	8 1/2"	1.079	6,189	377	1.6	6.19
NC3G	#3	10"	9 1/4"	0.863	10,440	637	2.8	10.44
NC3GS	#3 Squat	9 1/2"	8"	0.907	7,637	466	2.0	7.64
NC4G	#5 Egg Can	10"	12"	0.972	13,735	838	3.6	13.74
NC5GS	#5 Squat	11"	10"	0.76	13,909	848	3.7	13.91
NC6G	#6	12"	9"	0.76	15,652	955	4.1	15.65
NC7GT	#7 Tall	12"	14 1/2"	0.70	23,274	1,420	6.2	23.27
NC7GS	#7 Squat	14"	11 1/2"	0.67	22,765	1,389	6.0	22.77
NC10	#10	15"	15"	0.55	37,861	2,310	10.0	37.86
NC15GTT	#15 Tall Taper	14 1/2"	17 1/2"	2.125	41,504	2,532	11.0	41.50
NC15GT	#15 Tall	15"	18"	2.136	45,417	2,771	12.0	45.42
NC15GS	#15 Squat	17 1/4"	15"	1.53	46,777	2,854	12.4	46.78

\*All blow-molded containers are measured OD. All Grip-Lip, Dec-Grow and Poly-tainers are measured ID.

\*\*Number of containers necessary to hold a cubic yard of soil.







## Blow-Molded Containers

Blow-Molded Containers are the workhorses of the nursery industry. They offer exceptional durability, strength and value. Nursery Supplies offers blow-molded containers in a large variety of sizes; from #SP-4 all the way up to large #45 and #65.

Code	Container	Trade Size	Diameter (OD*)	Height	Containers /Cubic Yard**	Cubic cm	Cubic in	Gallon	Liter
NCBM1Q	100	#SP-4	4 3/4"	4 3/4"	850	900	54.9	.24	.90
NCBM1.5Q	150	#SP-4	4 Sq."	5"	885	865	52.7	.23	.87
NCBM2Q	200	#SP-5	6"	6"	400	1,916	116.9	.51	1.9
NCBM2.5Q	250	#SP-5	5 1/4 Sq."	6 1/4"	385	1,986	121.2	.52	2.0
NCBM2.75Q	275	#1	6 3/4"	5 1/2"	342	2,250	153.0	.59	2.25
NCBM1GS	300S	#1	6 3/4"	6 1/2"	300	2,555	155.9	.68	2.6
NCBM1G	300	#1	6 3/4"	7 1/4"	270	2,838	173.2	.75	2.8
NCBM3.5Q	350	Sm. Mum Pan	8"	5"	260	2,951	180.1	.78	3.0
NCBM4Q	400	#1	7 3/4"	7"	210	3,691	225.2	.98	3.7
NCBM4.14Q	414	-	4 Sq."	14"	281	2,721	166.1	.72	2.7
NCBM4.75Q	475	-	7 1/4"	8 1/2"	187	4,090	249.6	1.1	4.1
NCBM5Q	500	-	8"	8 1/2"	165	4,655	284.0	1.2	4.7
NCBM5.5Q	550	Lg. Mum Pan	9"	6"	166	4,589	280.6	1.2	4.6
NCBM2G	600	#2	9"	8 1/2"	125	6,064	374.6	1.6	6.1
NCBM3GS	1000S	-	10"	7 3/4"	104	7,371	450.0	1.9	7.4
NCBM3G	1000	10" Foliage	10"	9"	90	8,629	540.0	2.3	8.6
NCBM4GS	1200S	-	11"	7 1/2"	89	8,557	522.0	2.3	8.6
NCBM4G	1200	#3	11"	9 1/2"	70	10,784	699.0	3.0	10.8
NCBM4GEC	1400	#5 Egg Can	10 1/2"	12"	60	13,058	796.0	3.5	13.1
NCBM1600S	1600S	-	12"	7 3/4"	68	11,226	685.0	3.0	11.2
NCBM1600	1600	#5 Handles	12"	10 1/4"	54	14,175	864.0	3.7	14.2
NCBM5G	2000	#5 Handles	12"	11 1/4"	52	14,628	893.0	3.9	14.6
NCBM2100	2100	#5 Sqt. Handles	13 3/4"	10"	43	17,700	1,080.0	4.7	17.7
NCBM7G	2800	#7 Handles	15"	12 1/2"	27	28,415	1,734.0	7.5	28.4
NCBM10GS	4000S	#10 Sqt. Handles	15 3/4"	15"	21	36,550	2,230.0	9.7	36.6
NCBM15GS	6900S	#15 Sqt. Handles	18 1/2"	12"	18	42,071	2,567.3	11.1	42.1
NCBM15G	6900	#15 Handles	18 1/2"	15"	15	50,576	3,086.3	13.4	50.6
NCBM15GT	6900T	#15 Tall Handles	18 1/2"	17"	14	55,650	3,396.0	14.7	55.7
NCBM45GS	18000	#45 Forklift Slots	30"	20"	4.5	171,458	10,463.0	45.3	171.5
NCBM65G	26000	#65 Forklift Slots	30 3/4"	23"	3.3	229,699	14,017.0	60.7	229.7

\*All blow-molded containers are measured OD. All Grip-Lip, Dec-Grow and Poly-tainers are measured ID.

\*\*Number of containers necessary to hold a cubic yard of soil.

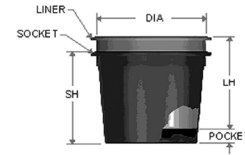




## Pot-in-Pot System

Nursery Supplies was one of the originators of the Pot-in-Pot System and our Grip-Lip containers remain the best container designs for this method of in-ground growing.

Please refer below to the many variations available.



Liner Code	Size	Liner	Diameter (DIA)	LH	Socket	SH	Pocket
NCBM4GS	#3 Squat	C 1200 S	11"	7 1/2"	Polytainer 4	12"	4 1/2"
NCBM4GLS	#3 Squat	EG/GL-1250S	10"	7 1/2"	GL-1250S	7 1/2"	1"
NCBM4GLS	#3 Squat	EG/GL-1250S	10"	7 1/2"	GL-1250	9 1/2"	3"
NCBM4G	#3	C-1200	11"	9 1/2"	Polytainer 4	12"	2 1/2"
NCBM4GL	#3	EG/GL-1200	9 3/4"	9 1/2"	GL-1200	9 1/2"	1"
NCBM4GL	#3	EG/GL-1200	9 3/4"	9 1/2"	GL-1400	12"	3 1/2"
NCBM4GLS	#3 Squat	EG/GL-1250	10"	9 1/2"	GL-1250	9 1/2"	1"
NCBM5GS	#4 Squat	C-1600S	12"	7 3/4"	Polytainer 5S	10"	3 1/2"
NCBM5G	#4	C-1600	12"	10 1/4"	Polytainer 5S	10"	1 1/4"
NCBM5GL	#4	EG/GL-1600	10 3/4"	10 1/4"	GL-1600	10 1/4"	1 1/4"
NCBM5GL	#4	EG/GL-1600	10 3/4"	10 1/4"	GL-2000	13"	2"
NCBM5G	#5	C-2000	12"	11"	Polytainer 5S	10"	1/2"
NCBM5GL	#5	EG/GL-2000	10 3/4"	11"	GL-2000	11"	1 1/4"
NCBM4EC	#5 Egg Can	EG/GL-1400	9 3/4"	12"	GL-1400	12"	1"
NCBM7GLS	#7 Squat	EG/GL-2800S	13 3/4"	10"	GL-2800S	10"	1"
NCBM7GLS	#7 Squat	EG/GL-2800S	13 3/4"	10"	GL-2800	12"	3"
NCBM7GLS	#7 Squat	EG/GL-2800S	13 3/4"	10"	GL-4000	14 1/4"	5 1/4"
NCBM7GLS	#7 Squat	EG/GL-2800S	13 3/4"	10"	GL-6000	17"	8"
NCBM7GLS	#7 Squat	EG/GL-2800S	13 3/4"	10"	Polytainer 7S	11 1/2"	2"
NCBM7G	#7	C-2800	14"	11 1/2"	GL-2800	12"	1 1/2"
NCBM7G	#7	C-2800	14"	11 1/2"	Polytainer 7S	11 1/2"	1/2"
NCBM7GL	#7	EG/GL-2800	13 3/4"	12"	GL-2800	12"	1"
NCBM7GL	#7	EG/GL-2800	13 3/4"	12"	Polytainer 7S	11 1/2"	0
NCBM7GL	#7	EG/GL-2800	13 3/4"	12"	GL-4000	14 1/4"	3 1/4"
NCBM7GL	#7	EG/GL-2800	13 3/4"	12"	GL-6000	17"	6 1/2"
NCBM10G	#10	C-4000	15 3/4"	15"	Polytainer 10	15"	2 1/2"
NCBM10G	#10	C-4000	15 3/4"	15"	Polytainer 15T	18"	5 1/2"
NCBM10GL	#10	EG/GL-4000	14 1/2"	14 1/4"	C-4000	15"	1"
NCBM10GL	#10	EG/GL-4000	14 1/2"	14 1/4"	GL-4000	14 1/4"	2 1/2"
NCBM10GL	#10	EG/GL-4000	14 1/2"	14 1/4"	GL-4000 Socket	14 1/4"	2 1/2"
NCBM10GL	#10	EG/GL-4000	14 1/2"	14 1/4"	GL-6000	17"	5 1/4"
NCBM10GL	#10	EG/GL-4000	14 1/2"	14 1/4"	GL-6000 Socket	17"	5 1/4"
NCBM15GS	#15 Squat	C-6900S	18 1/2"	12"	C-6900	15 1/4"	5 1/2"
NCBM15GS	#15 Squat	C-6900S	18 1/2"	12"	C-6900T	17 1/4"	7 1/2"
NCBM15GLS	#15 Squat	EG/GL-6900S	17 1/4"	12 1/4"	GL-6900S	12 1/4"	2 1/4"
NCBM15GLS	#15 Squat	EG/GL-6900S	17 1/4"	12 1/4"	GL-6900	15 1/4"	5 1/4"
NCBM15GLS	#15 Squat	EG/GL-6900S	17 1/4"	12 1/4"	GL-6900T	17 1/4"	7 1/4"
NCBM15GLS	#15 Squat	EG/GL-8000S	19 1/4"	12"	GL-8000S	12"	2 1/4"
NCBM15GLS	#15 Squat	EG/GL-8000S	19 1/4"	12"	GL-8000	17"	7 1/4"
NCBM15GLS	#15 Squat	EG/GL-8000S	19 1/4"	12"	GL-8000T	19 1/2"	9 3/4"
NCBM15G	#15	C-6900	18 1/2"	15"	GL-6900	15 1/4"	2 1/2"
NCBM15G	#15	C-6900	18 1/2"	15"	GL-6900T	17 1/4"	4 1/2"
NCBM15GL	#15	EG/GL-6900	17 1/4"	15 1/4"	GL-6900	15 1/4"	2 1/4"
NCBM15GL	#15	EG/GL-6900	17 1/4"	15 1/4"	GL-6900T	17 1/4"	4 1/4"
NCBM15GT	#15 Tall	C-6900T	18 1/2"	17"	C-6900T	18 1/2"	2 1/2"
NCBM15GLT	#15 Tall	EG/GL-6900T	17 1/4"	17 1/4"	GL-6900T	17 1/4"	2 1/4"
NCBM20GL	#20	EG/GL-8000	19 1/4"	17"	GL-8000	17"	2 3/4"
NCBM20GL	#20	EG/GL-8000	19 1/4"	17"	GL-8000T	19 1/2"	5 1/4"
NCBM20GLT	#20 Tall	EG/GL-8000T	19 1/4"	19 1/2"	GL-8000T	19 1/2"	2 3/4"
NCBM25GLS	#25 Squat	EG/GL-10,000S	22 3/4"	13 1/4"	GL-10,000S	13 1/4"	2 1/4"
NCBM25GLS	#25 Squat	EG/GL-10,000S	22 3/4"	13 1/4"	GL-10,000	18 1/4"	7 1/4"
NCBM25G	#25	EG/GL-10,000	22 3/4"	18 1/4"	GL-10,000	18 1/4"	2 1/4"
NCBM45S	#45	C-18,000	30"	20"	C-18,000	20"	1 3/4"



## Grip-Lip

Grip-Lip containers are designed to provide maximum stacking and shipping strength. They ease the strain of maneuvering plants and trees because the lip becomes a rigid handle. This unique lip design makes the Grip-Lip extremely comfortable to lift, yet strong enough to be carried by a forklift. Available in sizes #1 to #25. Grip-Lip containers are available in our standard weight as well as an economy weight, The Econo-Grip series, which is perfect for Pot-in-Pot applications.



Grip-Lip Code	Grip-Lip Desc.	Econo-Grip Code	Econo-Grip Desc.	Diameter (ID)	Height	Containers/ Cubic Yard	Cubic cm	Cubic in	Gallon	Liter
NCBM4QG	GL-400 (SS)	NCBM4QEC	EG-400	7"	7"	204	3,747	228	1.0	3.7
NCBM2G	GL-600 (SS)	NCBM2EC	EG-600	8"	8 1/2"	127	6,010	367	1.6	6.0
NCBM3G	GL-1000 (SS)	NCBM3EC	EG-1000	9 1/4"	9 1/4"	89	8,577	523	2.3	8.6
NCBM4G	GL-1200 (SS)	NCBM4EC	EG-1200	9 3/4"	9 1/2"	72	10,604	647	2.8	10.6
NCBM4GS	GL-1250S (SS)	NCBM4ECS	EG-1250S	10"	7 1/2"	88	8,611	525	2.28	8.6
NCBM1250GL	GL-1250 (SS)	NCBM1250EC	EG-1250	10"	9 1/2"	72	10,604	647	2.8	10.6
NCBM4GECEG	GL-1400 (SS)	NCBM4GECEC	EG-1400	9 3/4"	12"	60	12,860	785	3.4	12.9
NCBM7GS	GL-2800S (SS)	NCBM7ECS	EG-2800S	13 3/4"	10"	36	21,092	1,287	5.6	21.1
NCBM7G	GL-2800 (SS)	NCBM7EC	EG-2800	13 3/4"	12"	31	24,607	1,502	6.5	24.6
NCBM4000GL	GL-4000 (SS)	NCBM4000EC	Eg-4000	14 1/2"	14 1/4"	22	34,090	2,080	9.0	34.1
NCBM6000GL	GL-6000 (SS)	NCBM6000EC	EG-6000	14 1/2"	17"	19	40,877	2,494	10.8	40.9
NCBM6900SGL	GL-6900S (SS)	NCBM6900SEC	EG-6900S	17 1/4"	12 1/4"	19	40,852	2,492	10.8	40.9
NCBM6900GL	GL-6900 (SS)	NCBM6900EC	EG-6900	17 1/4"	15 1/4"	14	49,967	3,049	13.2	50.0
NCBM6900TGL	GL-6900T (SS)	-	-	17 1/4"	17 1/4"	16	54,880	3,350	14.5	54.9
NCBM20SGL	GL-8000S	NCBM20ECS	EG-8000S	19 1/4"	12"	15	51,783	3,160	13.7	51.8
NCBM20GL	GL-8000	NCBM20EC	EG-8000	19 1/4"	17"	10	74,193	4,520	19.6	74.2
NCBM20GLT	GL-8000T	NCBM20ECT	EG-8000T	19 1/4"	19 1/2"	9	81,935	5000	21.6	81.9
NCBM25GLS	GL-10000S (SS)	NCBM20ECS	EG-10000S	22 3/4"	13 1/4"	10	77,672	4,738	20.5	77.7
NCBM25GL	GL-10000 (SS)	NCBM25EC	EG-10000	22 3/4"	18 1/4"	7	104,475	6,373	27.6	104.5

## Lerio® Brand Containers

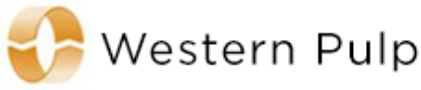
Lerio vacuum-formed containers are perfect for water plants. As a type of large-scale thermoforming process, they offer exceptional strength, durability and are available in a wide range of sizes.

Lerio Code	Nur. Supplies Code	Trade Size	Diameter (ID)*	Height	Containers/ Cubic Yard**	Gallon	Liter
NCSW35	SW35	#35	24	18	7	30.15	114.15
NCSW45	SW45	#45	28	19	5	42.81	162.06
NCSW65	SW65	#65	30	21	4	53.46	202.40
NCLER65	LER65	#65	30	21	4	52.03	196.95
NCSW95	SW95	#95	36	24	2	88.48	334.94
NCLER95	LER95	#95	36	24 3/8	2	93.28	353.10
NCSW100S	SW100S	#95/#100 Squat	42	18 1/4	2	98.07	371.26
NCLER150	LER150	#150	42	26 1/4	2	133.08	503.78
NCSW200	SW200	#200	48	26 1/2	1	186.07	704.38
NCLER300	LER300	#300	58	26	1	259.70	983.08

\*All blow-molded containers are measured OD. All Grip-Lip, Dec-Grow and Poly-tainers are measured ID.

\*\*Number of containers necessary to hold a cubic yard of soil.





To help your Bare Root plants look and sell better in Biodegradable Containers.

- Superior Plant Growth
- Plantable "Pot and All"
- Insulates from Temperature Extremes
- Made From 100% Recycled Paper
- Biodegradable
- Inexpensive and Economical



### Best Practices

The safest advice is to completely remove the container prior to planting if the plant has an established rootball. For recently "canned" material like bareroot roses, planting of part of the container is necessary to keep the roots from exposure. If planting of the container is required, the customer should be careful to:

- 1.) Remove the bottom of the container completely;
- 2.) Slit the sides in several places to permit root development and;
- 3.) Bury the container completely, or tear off the rim so no portion of the pot is exposed above the ground.



### Nursery Pots

Ideal for potting bareroot roses and small fruit, shade or flowering trees. Also used for round covers, liners, berries, deciduous and evergreen shrubs, perennials, broad leaf evergreens, conifers and other field-dug plants. Packaged in cartons (except as noted), and available in bulk for large orders.

Item Number	Description	Quantity	Weight	US/Metric
WPP1001	6 round x 6 deep	100 each	30 lbs.	2.48 qt / 2.35 l
WPP1003	7 round x 7 deep	48 each	18 lbs.	1.03 gal / 3.90 l
WPP1005	7 round x 9 deep	40 each	17 lbs.	1.28 gal / 4.87 l
WPP1009	8 round x 6 deep	68 each	26 lbs.	1.04 gal / 3.94 l
WPP1011	8 round x 8 deep	46 each	22 lbs.	1.62 gal / 6.14 l
WPP1012	9 round x 9 deep	40 each	28 lbs.	1.80 gal / 6.83 l
WPP1013	9 square x 9 deep	50 each	37 lbs.	1.99 gal / 7.55 l
WPP1014	10 round x 7 deep	40 each	26 lbs.	1.80 gal / 6.84 l
WPP1016	10 round x 10 deep	36 each	31 lbs.	2.55 gal / 9.68 l
WPP1019	11 square x 11 deep	40 each	45 lbs.	3.77 gal / 14.3 l
WPP1021	12 round x 8 deep	40 each	36 lbs.	2.74 gal / 10.4 l
WPP1023	12 round x 11 deep	32 each	35 lbs.	3.40 gal / 12.9 l
WPP1027	13 round x 9 deep	38 each	41 lbs.	4.12 gal / 15.6 l
WPP1029	13 round x 12 deep	30 each	45 lbs.	5.52 gal / 20.9 l

### Medium Containers

Great for medium size evergreen shrubs, shade trees and conifers. Used for small specimen trees and or displaying B & B stock. Popular for patio plants and patio pot gardening. Used by many city dwellers for balcony greenery.

Item Number	Description	Quantity	Weight	US/Metric
WPP1031	15 round x 10 deep	20 each	30 lbs.	4.28 gal / 16.2 l
WPP1033	15 round x 13 deep	16 each	31 lbs.	6.55 gal / 24.8 l
WPP1035	15 round x 16 deep	16 each	32 lbs.	7.97 gal / 30.2 l



### Large Containers

Specially designed for displaying larger B&B stock and year-round specimen tree sales. Used for large evergreen shrubs, living Christmas trees, conifers, shade trees and other large field grown plant material. Top rims and bottoms are fully wax-impregnated to provide extra durability and strength. Packaged in plastic sleeves for convenient outdoor storage, and available in bulk for large orders.

Item Number	Description	Quantity	Weight	US/Metric
WPP1001	18 round x 12 deep	14 each	41 lbs.	2.48 qt / 2.35 l
WPP1003	18 round x 16 deep	12 each	40 lbs.	1.03 gal / 3.90 l
WPP1005	21 round x 16 deep	12 each	46 lbs.	1.28 gal / 4.87 l
WPP1041	21 round x 16 deep	8 each	38 lbs.	16.11 gal / 61.01 l
WPP1043	24 round x 18 deep	Bulk Only	800 lbs.	23.38 gal / 88.5 l



### Western's Garden Baskets

Impressive large basket combinations: consisting of a 18 round x 10 deep or 16 round x 8 deep Patio Planter and sturdy companion hanger assembly. New improved pre-assembled 16 hanger assembly makes installation simple and fast. Perfect for large hanging gardens of mixed plantings that last the whole summer long. Both the 16 x 8 and the 18 x 10 can be used alone as attractive large Patio Planters. Ideal for container gardening vegetables, herbs, etc.

Item Number	Description	Quantity	Weight / Case	U.S./Metric
WPP1069	16 Garden Basket	20 each	35 lbs	4.43 gal / 16.8 l
WPP1038	18 Garden Basket	20 each	39 lbs.	5.99 gal / 22.7 l
WPP8881	16 Hanger Assembly	20 each	23 lbs.	-
WPP8882	18 Hanger Assembly	20 each	23 lbs.	-



### Cascade Baskets

Ideal for impressive hanging garden displays. 10 cascade basket features 5 pre-molded side access holes for easy planting. 12 features 7 access holes. Large holding capacity for both baskets. 10 Cascade Basket is compatible with Western's easy-to-install 4-strand Plastic Hanger. Use of heavy duty 4 strand wire hanger recommended with 12.

Item Number	Description	Quantity	Weight / Case	U.S./Metric
WPP6842	10" Cascade Basket	22 each	800 lbs.	1.37 gal / 5.20 l
WPP6602	12" Cascade Basket	24 each	26 lbs	2.34 gal / 8.87 l



### Western Garden Planters

Western Pulp's new design for Seasonal Flower Containers. All of these new Garden Planters come in case quantities of 16.

- Attractive sculptured sides give a decorative appearance.
- Fully waxed for longevity & durability
- Made from 100% recycled paper.
- Breathable, insulates, and conserves water

Item Number	Description	Quantity	Weight / Case	U.S./Metric
WPP1073	10" Garden Planter	20 lb.	3.1	2.13 gal / 8.07 l
WPP1032	12" Garden Planter	26 lb.	3.9	3.30 gal / 12.5 l
WPP1034	14" Garden Planter	36 lb.	6.1	5.20 gal / 19.7 l





### Western Pulp Patio Planters

Great for “color spots” and patio planters. Popular for decks, patios, windows and balconies. Featured in Sunset Magazine for vegetable gardening. Ideal way to merchandise flowers, vegetable and shrubs. Empty containers displayed on retail shelves trigger larger impulse purchases. Also available with attractive retail labels at higher prices. Packaged in cartons, and available in bulk for large orders.

Item Number	Description	Quantity	Weight / Case	U.S./Metric
WPP1022	12 round x 5 deep	50	30 lbs	1.56 gal / 5.94 l
WPP1054	15 round x 6 deep	40	42 lbs.	2.98 gal / 11.3 l
WPP1036	18 round x 8 deep	24	42 lbs	5.65 gal / 21.4 l
WPP1060	21 round x 8 deep	18	47 lbs.	7.21 gal / 27.3 l
WPP1052	10 Clover Pot	36	22 lbs.	1.44 gal / 5.45 l
WPP1056	12 Clover Pot	20	-	2.30 gal / 8.70 l
WPP1072	14 Clover Pot	20	-	3.77 gal / 14.3 l
WPP1056	Dec-A-Pot	22	24 lbs.	3.93 gal / 14.3 l



### Western Pulp Hanging Baskets

Perfect for fuchsias, geraniums, begonias, impatiens and other annuals and perennials. Also used for foliage and interior landscaping. Fully wax-impregnated for extended life and strength. Fitted with attractive rust-resistant eyelets. Hangers sold separately.

Item Number	Description	Quantity	Weight / Case	U.S./Metric
WPP1045	10 Square Basket	30 each	31 lbs.	1.84 gal / 6.98 l
WPP1059	12 Square Basket	22 each	37 lbs.	2.80 gal / 10.6 l
WPP1051	10 Round Basket	22 each	18 lbs.	1.34 gal / 5.10 l
WPP1055	12 Round Basket	22 each	25 lbs.	2.09 gal / 7.93 l
WPP1078	12 XLII Round Basket	22 each	34 lbs.	2.69 gal / 10.2 l
WPP1071	14 XL Round Basket	20 each	27 lbs.	3.96 gal / 15.0 l



### Western Pulp’s 4-Strand Plastic Hanger and Heavy Duty Wire Hanger

Western’s Plastic Hangers are the perfect companion for its molded fiber Hanging Baskets. Easy to install! Simply “snap-in” the 1/4-inch diameter brass eyelets on its Hanging Baskets, saving time, labor and money. Their attractive twisted-strand design and the rich dark brown color compliment the natural look of the baskets.

Item Number	Description	Quantity
WPP8885	4-Strand Plastic Hanger	22
WPP8888	4-Strand Heavy Duty Wire Hanger	Bulk Only
WPP888612	Swivel Hanger	20





On the basis of 60 years experience with growing media for professional horticulture and farming, Jiffy Consumer Business is offering a full product range for the keen leisure gardener. Only high-grade products based on professional plant propagation are optimised for use in private gardens and offered in attractive and informative packaging for a broad range of consumers.



### Jiffy-Pots

Jiffy-Pots are available in round and square styles in sizes from 2” - 4”. All natural Jiffy-Pots are made from Canadian sphagnum peat moss and wood pulp and are 100% biodegradable. An easy way to grow great plants and reduce the number of plastic containers ending up in your local landfill. Each pot has a bottom hole for extra drainage unless slits are stipulated on the following charts.

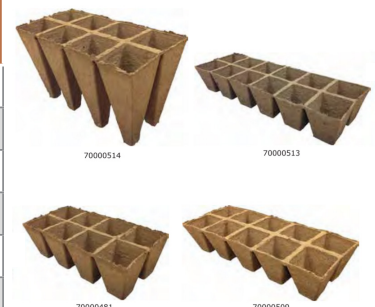
Item Code	WH - With Hole SL - Slit	Item Name	Weight / Case (lbs)
70000357	SL	JP Peat Pot 2x2/RD	29
70000504	WH	JP Peat Pot 2x2/SQ	34
70000494	WH	JP Peat Pot 2 1/4x2 1/4/RD	30
70000505	WH	JP Peat Pot 2 1/4x2 1/4/SQ	27
70000502	WH	JP Peat Pot 2 3/4x3 1/2/RD	21
70000503	WH	JP Peat Pot 3x3/RD	31
70000362	WH	JP Peat Pot 3x3/SQ	37
70000679	WH	JP Peat Pot 3x4 3/4/RD	32
70000461	SL	JP Peat Pot 3 1/2x4/SQ	27
70000725	WH	JP Peat Pot 4x3 1/2/SQ	37
70000293	WH	JP Peat Pot 4x3 3/4/RD	35
70000604	WH	JP Peat Pot 4 1/2x6/RD	39
70000871	WH	JP Peat Pot 4 1/3x4/RD	34
70000749	WH	JP Peat Pot 5x4/RD	31
70000479	WH	JP Peat Pot 6x5/RD	19



### Jiffy-Strips

Jiffy-Strips are designed for fast flat loading. Pot sizes range from 1 1/4” to 3”. Multiples of 6, 8, 10, and 12 cells are available depending on pot size. Pots are easily separated for transplanting.

Item Code	WH - With Hole SL - Slit	Item Name	Weight / Case (lbs)
70000509	WH	JP Peat STR 1 3/4x2/10 pots/cs (510 strips)	25
70000513	WH	JP Peat STR 2 1/4x2 1/4/12 pots/cs (210 strips)	32
70000552	WH	JP Peat STR 2 1/2x2 1/4/8 pots/cs (288 strips)	36
70000481	WH	JP Peat STR 2 1/2x3/8 pots/cs (320 strips)	40
70000514	NH	JP Peat STR 2 1/2x6/8 pots/cs (200 strips)	38
70000365	SL	JP Peat STR 3x3/6 pots/cs (210 strips)	27





### Jiffy Preforma

Preforma offers the ultimate in flexibility for growers worldwide seeding/rooting a wide array of crops. Preforma plugs are held together through a binder, making the plugs well suited for use in any type of automation solution, Another key benefit of Preforma; cutting rooting time significantly, as plugs will not crumble even when not fully rooted during an automated transplanting process.

- The Ultimate in flexibility
- Custom made to grower specs
- Fits all automated systems
- Uses any size or type of plug tray
- Reduce shrink on bench and during shipping



### Jiffy-7® Peat Pellets and Coco Pellets

The Jiffy-7® pellet: fine netting is filled with high-quality substrate and then compressed to form a handy pellet. Just add water, and the little planting wonder grows to up to seven times its size in a few moments. It is held together by fine netting, ensuring optimum air/water exchange. Also available in XXL, for larger plants.



Item Code	PP - Pellet Packs S - Single	Item Name	Weight / Case (lbs)
70000175	S	J7 Hort Peat Pel 30x35-Stacked	17
70000129	S	J7 Hort Peat Pel 30x35-Bulk	15
70000611	S	J7 Hort Peat Pel 30x40-Bulk	17
70000617	PP	J7 Hort Peat Pel 30x55WH-/25	20
70000737	PP	J7 Hort Peat Pel 30x65-50L&F	17
70000071	PP	J7 Hort Peat Pel 30x65-140L&F F	28
70000809	S	J7 Hort Peat Pel 36x43-Bulk	26
70000715	S	J7 Hort Peat Pel 36x55-Bulk	25
70000426	PP	J7 Hort Peat Pel 36x75-96	28
70000672	PP	J7 Hort Peat Pel 36-100-84 18l	38
70000755	PP	J7 Hort Peat Pel 36-100-84 18INW	38
70000116	S	J7 Hort Peat Pel 42x42-Bulk	18
70000121	S	J7 Hort Peat Pel 42x63-1Bulk	13
70000141	PP	J7 Hort Peat Pel 42x63-50	26
70000473	PP	J7 Hort Peat Pel 42x63-50	27
70000120	S	J7 Hort Peat Pel 42x63-Bulk	17
70000271	S	J7 Hort Peat Pel 42x75 Bulk	14

### Jiffy Growbag

Jiffy Growbag, made of 100% coco substrate at our own RHP production site, comes to you in the form as a dry plate enclosed in a plastic sleeve. After rapid expansion with a water and fertilizer solution these high quality buffered Jiffy Growbags are ready for use. Jiffy Growbags can be used for a broad range of crops as the product can be delivered in different standard sizes, with or without pre-cut planting and drainage holes.



### Jiffy Growblock

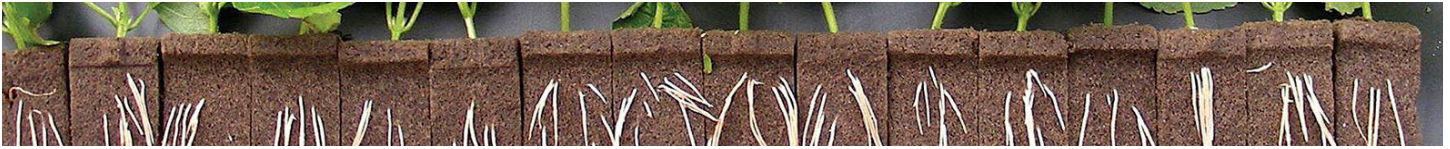
Jiffy Growblocks are manufactured from 100% RHP certified coco substrate derived from pithy tissues of the coconut husk at our own Jiffy production sites in Sri Lanka. Jiffy Growblocks offers you a renewable, environmentally friendly substrate with zero disposal issues. Jiffy Growblock is the only right choice for use in hydroponic systems, securing the highest yield no matter if you grow tomatoes, cucumbers, bell peppers or any other crop.







For nearly 60 years, OASIS® Grower Solutions has supplied growers of every size with quality propagation media for vegetative plants, flowers and seed germination. Today, just as when we started, our biggest motivator continues to be the customer's uncompromised success.



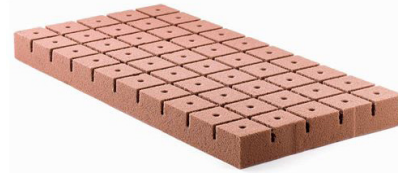
### Oasis Growing Medium Makes It Easy To Grow

Oasis Growing Mediums are rigid, open celled, water-absorbing foams specifically designed for optimal callus and rapid root formation. Outstanding performance is due, in part, to the unique cell structure which closely resembles the cellular structure of the plant itself. The composition of the foam anchors the plant and provides capillary action for feeding water to inserted cutting. These mediums offer the propagator many advantages.

- Engineered optimum balance of air and water
- Low cation exchange capacity allows rapid nutrient availability without danger of salt accumulation
- Stabilized pH (5.5-6.5)
- Inert and sterile when received, free of pathogens
- Faster rooting
- A small amount of 2-1-2 nutrition serves as a plant starter
- Special additive to enhance cation exchange

### Horticubes

Created for the specific needs of pro hydroponic growers, Horticube's modified cell structure and unique chemistry promote faster, stronger root growth. Specialized density and drainage properties in a fine-cell design provide uniform moisture throughout the media – whether you use overhead irrigation or sub-irrigation. (Horticubes XL also available)



### Oasis Wedge Strips

Wedge-type products are favored due to faster rooting and ease of transplanting. The products below are primarily used for vegetative propagation. For seeding, we recommend the use of LC-1 HHorticubes products.



### Root Cubes

Oasis Grower Products has a propagation product suitable for almost all foliage plants. Space and plant size will dictate the best product selection. As an example, Crotons root particularly well in the Oasis Wedge 10 strip, demonstrating superior results compared to other methods.



Item Number	Description	Units per sheet	Sheets per case	Weight
SO5005	Rootcubes Medium 1"	162 (9x18)	20	5.10 lbs
SO5010	Rootcubes Medium 1 1/4"	104 (8x13)	20	5.08 lbs
SO5015	Rootcubes Medium 1 1/2"	50 (5x10)	20	5.08 lbs
SO5020	Rootcubes Medium 10 Strip	10 (1x10)	190	6.12 lbs
SO5030	Rootcubes Medium 8 Strip	8 (1x8)	228	5.66 lbs
SO5220	Horticubes Medium 1" LC-1	162 (9x18)	10	2.05 lbs
SO5225	Horticubes Medium 1" LC-1	162 (9x18)	20	5.79 lbs
SO5231	Horticubes Medium 1" LC-1 - thin cut	276 (12x23)	20	6.08 lbs
SO5240	Horticubes Medium 1 1/4" LC-1	104 (8x13)	20	6.01 lbs
SO5245	Horticubes Medium 1 1/2" LC-1	50 (5x10)	20	6.04 lbs
SO5615	Wedge Medium Only - universal hole	17 (1x17)	120	4.88 lbs
SO5625	Wedge Double Strip - universal hole	34 (2x17)	75	9.22 lbs
SO5635	Wedge Strip - universal hole	10 (1x10)	280	16.88 lbs
SO5655	Wedge Strip - universal hole	13 (1x13)	280	20.00 lbs
SO5641	Wedge Tray - No Medium	102 (6x17)	102	13.75 lbs
SO5643	Wedge Tray and Medium - universal hole	102 (6x17)	102	5.25 lbs



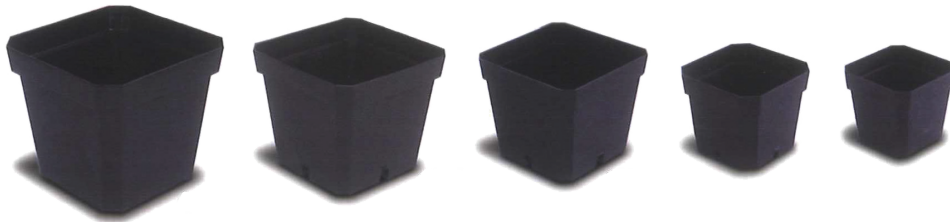
# National POLYMERS

National Polymers manufactures the highest quality line of polypropylene plastic containers available including square pots and hanging baskets. The high gloss finish displays an attractive pot and makes it easy to keep clean.



## Square Pots

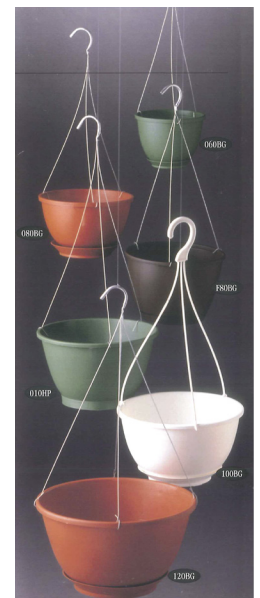
Code	Product	Drainage	Size	Case Pack	Case Cube	Case Weight
NP225SG	2 1/4 Square	4 Hole Bottom	2" ID x 1 7/8"	2000	1.92	30.0 lbs.
NP250SG	2 1/2 Square	4 Hole Bottom	2 5/16" ID x 2"	1000	1.42	17.75 lbs.
NP300SG	3 Square	8 Hole Side/Bottom	2 5/8" ID x 2 1/4"	1000	2.25	29.25 lbs.
NP350SG	3 1/2 Square	8 Hole Side/Bottom	3 5/16" ID x 2 3/4"	500	2.03	27.5 lbs.
NP400SG	4 Square	8 Hole Side/Bottom	3 3/4" ID x 3 3/16"	400	2.12	27.75 lbs.
NP450SG	4 1/2 Square	8 Hole Bottom	4 1/4" ID x 3 5/8"	400	2.78	28.5 lbs
NP525SG	5 1/4 Square	8 Hole Bottom	5 1/4" ID x 5 1/4"	200	2.85	30.5 lbs.



## Hanging Baskets

National baskets will save you labor dollars and complement your crop. Available in 4 colors (green, white, terra cotta and brown) manufactured with break resistant polypropylene, patented snap-on saucers or built-in saucers, with tip free flat bottoms. National can assist you in having the most profitable basket crop you've ever had. 8" Floral Basket holds a 4 pot, more soil than our regular 8 Basket - ideal for floral crops! Optional plastic hanger available for 8 and 10 Baskets - no additional charge.

Code	Product	Saucer Type	Size	Case Pack	Case Cube	Case Weight
NP060BG	6 Hanging Basket	Center Snap-On	5 1/2" ID x 4 1/8"	50	1.13	10.5 lbs.
NP080BG	8 Hanging Basket	Center Snap-On	7 1/2" ID x 4 3/4"	50	2.15	15.75 lbs.
NPF80BG	8 Floral Basket	Snap-On Flush	8" ID x 4 3/16"	50	2.51	20.5 lbs.
NP100BG	10 Hanging Basket	Center Snap-On	9 5/8" ID x 5 3/4"	50	2.38	25.5 lbs.
NP120BG	12 Hanging Basket	Center Snap-On	12" ID x 6 3/4"	25	2.27	25.25 lbs.





### Austram Progro Planters, Chains and Hangers - White

Item Code	Planter Size	Case Pack	Depth of Planter	Bottom Width	Cubic ft. Case	Lbs. Per Case	Chain Link Sz.	Chain Code
COC10	10	24	4.5"	5"	3	30	14	44882
COC12	12	24	5.5"	6"	4.3	32	14	44882
COC14	14	24	6"	7"	6.1	35	18	44883
COC16	16	24	6.75"	8"	7.7	42	22	44884
COC20	20	12	8"	10"	7.4	46	26	34885
COC24	24	6	8.5"	15"	6.1	29	28	24886



### Topiary Plus Pre Mossed Wire Hanging Baskets

Topiary Plus makes a high quality pre-mossed hanging basket with a chain hanger. Each basket is tied with UV treated 30 pound test monofilament line and are ready to plant out of the box.



Item Code	Description
TAWSMB10	Spagnum moss basket with wire welded chain - 30
TAWSMB12	Spagnum moss basket with wire welded chain - 30
TAWSMB14	Spagnum moss basket with wire welded chain - 22
TAWSMB16	Spagnum moss basket with chain - 16
TAWSMB18	Spagnum moss basket with chain - 12
TAWSMB20	Spagnum moss basket with chain - 10
TAWSMB22	Spagnum moss basket with chain - 7

### Clear Vinyl Saucers

Item Number	Description	Poly Bag Inner Pack	Master Pack
CPPVS4	4" Clear	50	1000
CPPVS5	5" Clear	50	1000
CPPVS6	6" Clear	50	1000
CPPVS7	7" Clear	50	1000
CCPVS8	8" Clear	50	600
CCPVS9	9" Clear	50	400
CCPVS10	10" Clear	50	300
CCPVS11	11" Clear	25	200
CCPVS12	12" Clear	25	200
CCPVS13	13" Clear	25	100
CCPVS14	14" Clear	25	100
CCPVS16	16" Clear	10	100
CCPVS17	17" Clear	10	100
CCPVS21	21" Clear	5	25

### Cocomoss Fiber Liners

Cocomoss fiber liners hold moisture required to keep your plants adequately watered. Save time and energy worrying about when and how much to water your plants



Item Code	Size of Liner	First Planter	Box Quantity
COCL10	15	10	18
COCL12	17	12	18
COCL14	20	14	18
COCL16	22.5	16	18
COCL18	24	18	12
COCL20	28	20	12
COCL24	32	24	12

### Deep Clear Vinyl Saucers

Item Number	Diameter	Height	Pack	Master Pack
CPPDL4	4"	2 3/8"	25	400
CPPDL5	5"	3 3/4"	25	400
CPPDL6	6"	3 1/4"	25	300
CPPDL7	7"	3 1/2"	25	300
CPPDL8	8"	3 1/2"	25	200
CPPDL9	9"	3 1/4"	25	50
CPPDL10	10"	2 5/8"	25	300
CPPDL11	11"	2 7/8"	25	100
CPPDL12	12"	3 1/4"	25	100
CPPDL14	14"	3 1/2"	25	100
CPPDL15	15"	3 1/2"	25	100
CPPDL17	17"	3 1/2"	10	100

### Twist-Ems

T-17 5/32" x 100'  
**Item Number: GIT-17**  
 each or 10 per case

T-9 1/4" x 250'  
**Item Number: GIT-9**  
 each or 10 per case





### Pylon Pot Labels

Indoors or out... the most popular marker for pricing or identifying

PLM-13 - A Large 3" x 5" of marking area. Fastened to the Ex-10 extension for an overall height of 13 1/4"

PLM-35 - The 3" x 5" marking area only. Can be nailed to wood lath for extra height or for rugged field use.

PLEX-10 - Extension unit. Used with PLM-35 as described above.

Item Number	Width x Length	Quantity per Box	Box Weight
PLM-5	2" x 5"	250	1.6 lbs
PLM-8	2 1/2" x 8"	100	1.3 lbs
PLM-12	3" x 12"	100	2.3 lbs
PLS-4 1/2	4 1/2" L	1000	4.0 lbs
PLS-6	6" L	500	2.8 lbs
PLS-12	12" L	100	2.4 lbs
PLT-1	1" x 3"	500	3.6 lbs
PLM-13	3" x 5" x 13"	100	4.8 lbs
PLM-35	3" x 5"	100	3.8 lbs
PLEX-10	10"	100	1.3 lbs

Have your company/store name printed on one side, use the other for the price, variety, etc. Your identification goes with each sale. Use for give-aways, advertising, etc.

Item Number	Size	Quantity per Box	Box Weight
PLL-4	4 inch	1000	3.5 lbs
PLL-5	5 inch	1000	4.6 lbs
PLL-6	6 inch	1000	5.7 lbs
PLL-8	8 inch	500	5.6 lbs

### Max Tapener

One squeeze of the handle stretches the tape between the jaws ready to wrap around the plant stem and support. A second squeeze staples the tape firmly and cuts it off neatly. Device is then ready to continue tying.

Item Code	Description
MTHT-B	Max Tapener Unit
MT10031	Max Tapener Blades
MT3441	Max Tapener Tape-10
MT604C	Max Tapener Staples - 5000

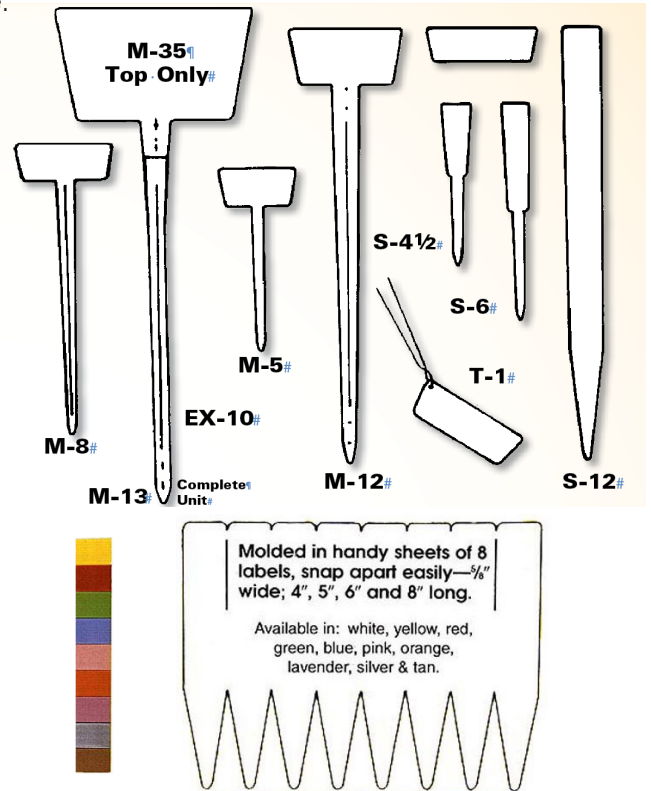
### Ellepot Cocopress

Compressed Coco Coir in an easy to expand starter plug.

Item Number	Description	Case Quantity
HA37009900	Tomato Twine 1200 Meter	1

### Bamboo Cane Stakes (treated)

Item Code	Size	MM Thick-ness	Bale Quantity
BG155 - Green Treated	18"	5-7	2000
BG204 - Green Treated	24"	5-7	2000
BG306 - Green Treated	36"	6-8	1000
BG408 - Green Treated	48"	8-10	1000
BG510 - Green Treated	60"	10-12	500
BG610 - Green Treated	72"	10-12	500



### Tomato / Pepper Twine and Hooks

Treated twine and hooks for long lasting use for greenhouse plant suspension for vining crops.

Item Number	Description	Case Quantity
HA37009900	Tomato Twine 1200 Meter	1
HA37011500	Pepper Twine 1500 Meter	1
HA50010012	18cm Hook w/ 10 Meter Fall	413
HA50010020	18cm Hook (No Twine)	1000

### Plant Clips

Bato Terra Cotta 25mm Mega Clips and 23mm Standard Clips

Item Number	Description	Case Quantity
HA37200858	23mm Clip	11,000
HA37200857	25mm Clip	9,000

### Bamboo Cane Stakes (untreated)

Item Code	Size	MM Thick-ness	Bale Quantity
BN408 - Untreated	48" Heavy	8-10	500
BN510 - Untreated	60" Heavy	10-12	500
BN618 - Untreated	72" Heavy	18-20	100
BN824 - Untreated	96" Heavy	24-26	50
BN1024 - Untreated	120" Heavy	24-26	50
BN1228 - Untreated	144" Heavy	28-30	25



HAWTHORNE GARDENING  
co

ACW Supply carries fabric pots, net pots, mesh pots and saucers shown below. For specific containers available from Hawthorne Gardening Company and Hydrofarm, please contact ACW Supply or visit the manufacturer's websites:

**Hawthorne:**  
[www.hawthornegc.com/shop](http://www.hawthornegc.com/shop)

**Hydrofarm:**  
[www.hydrofarm.com/catalog](http://www.hydrofarm.com/catalog)

 Sunlight Supply is now part of the Hawthorne Gardening Company

### Fabric Pots



These soft growing containers allow more air to reach the growing medium and roots, improving drainage and keeping the root system from overheating on hot days.

### Net Pots



Excellent quality net pots are thicker and more heavy-duty than most on the market. They offer a wider rim for better support.

### Saucers



Durable, hard plastic that is washable and reusable. New bigger sizes to accommodate larger nursery pots.

### Mesh Pots



These heavy duty plastic pots are designed specifically to snugly fit on standard 3.5 and 5 gallon buckets. They are mesh on the sides and/or bottom for maximum aeration. They work great in all hydroponic applications.

# APPLICATORS



## BRANDS CARRIED

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p. 2  
[solenotextile.com](http://solenotextile.com)



p. 3-4  
[dramm.com](http://dramm.com)



p. 6-13  
[dosatronusa.com](http://dosatronusa.com)



p. 14  
[demaeng.com](http://demaeng.com)



p. 15-33  
[netafimusa.com](http://netafimusa.com)



**Jain Irrigation Systems Ltd.**

p. 34  
[jains.com](http://jains.com)



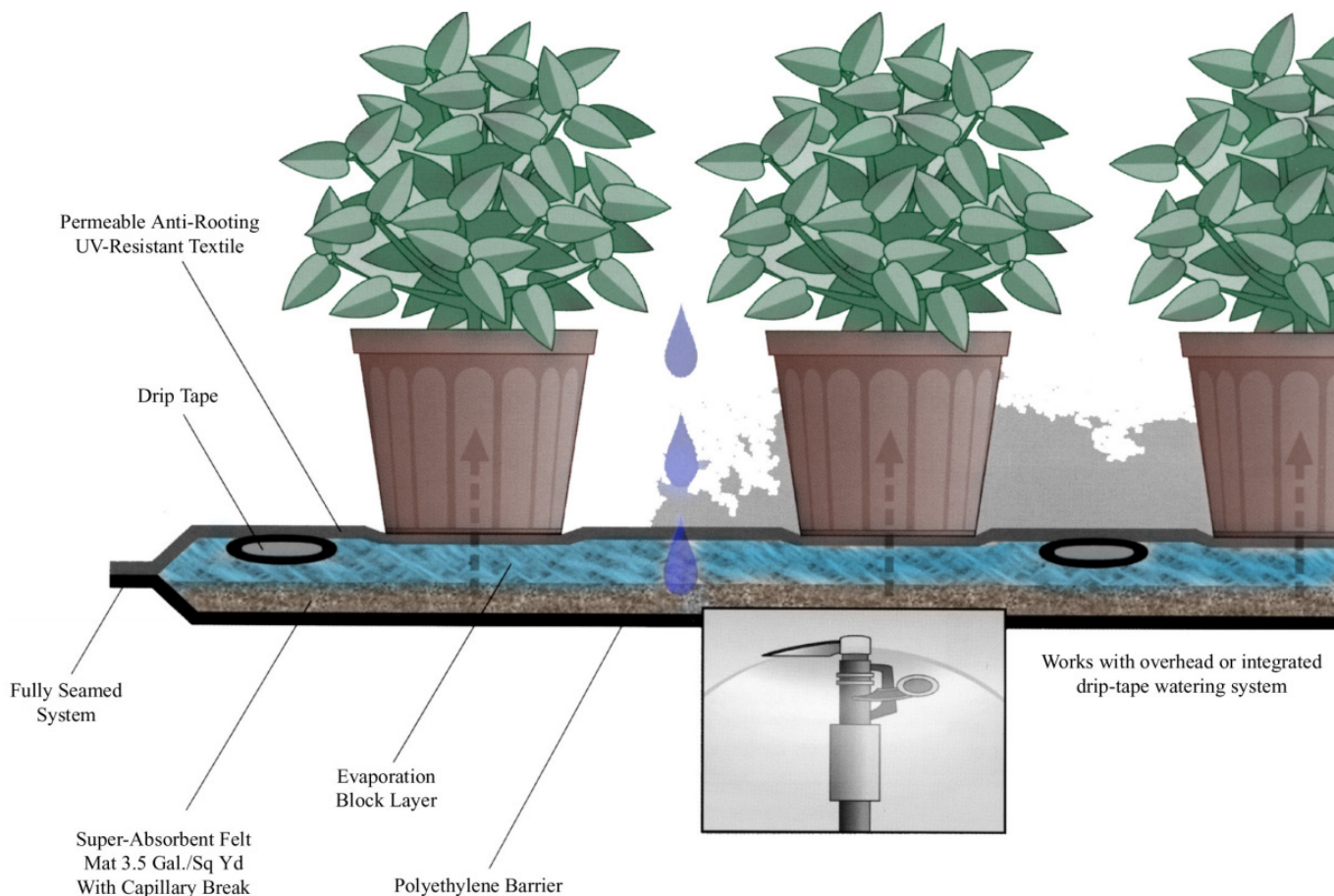
Today's horticultural industry faces many challenges. While it strives to decrease water and energy consumption in an effort to respect the environment, it also seeks to be economically viable. Aquamat® provide effective and sustainable solutions to this issue. Soleno products can significantly contribute to the conservation of resources as well as accelerate your return on investment.



### The Aquamat® Irrigation System: A Vision of Growth Rooted in Efficiency

*Introducing a new way to save water, accelerate crop growth and reduce labor costs*

Improving crop growth while saving water and labor costs is a key to success in today's highly competitive horticultural industry. In response to the needs of nursery growers for greater productivity and uniformity in an environment where saving water is an increasing concern, Soleno Textiles, a leader in innovative technical textile products, has developed - in conjunction with researchers at the Mid-Florida Research and Education Center of the University of Florida and Laval University in Quebec, Canada - a revolutionary irrigation system that effectively meets the needs of potted plant producers. This unique watering mat, available from American Clay Works in custom sizes, uses less than 50% of the water required by conventional systems. Most runoff is eliminated and labor costs are decreased. Call American Clay Works for more information about this extraordinary advancement in watering technology.





# DRAMM

Dramm offers a full line of chemical application equipment. They have produced and sold specialty spray equipment for greenhouses for over 30 years. Dramm believes that there is no "one-way" to spray. As a result, they manufacture and sell more than 35 different machines for the greenhouse and nursery industry.

## Heavy-Duty MSO Sprayer

The Dramm MSO Heavy Duty Sprayer is a powerful and compact hydraulic sprayer designed to apply all formulations of chemicals. The MSO offers a fully adjustable pressure regulator with a maximum pressure of 500psi. Combined with the MS-TG trigger gun and the pump output of 1/2 gpm, the MSO creates a very fine spray for even coverage. The included trigger gun offers an adjustable pattern that will spray from a 20 foot straight stream to a 10 foot mist cone.

The MSO is available in several models. The base unit includes the pump, 33 foot discharge hose and the suction and bypass hoses (model MSO). Additionally, the MSO is available with a 20 gallon cart and tank (pictured right). The 20 gallon model is available with either 33 feet of hose (model MS20-33) or with 100 feet of hose and a hose reel (modelMS20-100).

The hose reel and cart assembly may also be purchased independently (model MS-R and MS-20E). Finally, a telescoping spray wand (model L-5) is also available. Clean up is easy and maintenance is simple. The MSO uses oilless bearing and stainless steel pump parts. The Dramm MSO Heavy Duty Sprayer is backed by a 6 month parts and labor warranty. Let the Dramm Heavy Duty Sprayer be your workhorse.



- Fully adjustable pressure
- Trigger Gun with adjustable spray pattern and output rates
- Solid bronze pump construction with oilless bearings
- Applies most chemical formulations
- Optional cart, model MS-20E
- Bottom draw conversion kit
- Optional hose reel (on model MS20-33)
- Optional telescoping spray-wand
- 20 gallon solution tank
- 20 1/2 " wide with 10" rubber wheels

Power Supply	Horse Power	Maximum Pressure	Maximum Discharge Rate	RPM	Bearings	Drive Systems	Pump Type
110V 60 HZ 200 Watts	1/4 h p	500 psi	0.5 GPM	1800 (no load) / 1740 (under load)	Oilless	Direct Drive	Plunger Style
Plunger Size	Spray Gun	Discharge Hose Length	Suction & Return Hose Length	Power Cord Length	Spray Distance		
Cylinder bore .984" - Stroke .157"	Adjustable output 0.0-0.5 GPM	33 feet or 100 feet	6 feet	8 feet	Stream: 20 feet / Mist: 8 feet		

## Hydra Sprayer

The Dramm Hydra Multi-spray Hydraulic Sprayer is a high volume hydraulic sprayer capable of performing a variety of tasks. The Hydra is perfect for the application of insecticides, fungicides, growth regulators, fertilizers, disinfectants and other chemicals.

With a pump output of 4 gallons per minute, the Hydra offers enough volume to utilize a choice of guns and agitate the tank at the same time. The pump has a maximum operating pressure of 550 psi with a fully adjustable regulator. This allows for a variety of droplet sizes and spray distances. The Hydra uses a close-coupled pump to eliminate belt or chain maintenance and is run by a sealed 1.5 horse power electric motor.

The standard gun offers a choice of patterns with an output of 1.3 gallons per minute. Different nozzle tips are available for lower or higher flow rates. Other gun options include the Dramm L-5 Lance and the Dramm MS-Trigger Gun. The Hydra comes standard with a 50 gallon tank on a maneuverable cart with rear casters for easy turning when full. The unit includes 150 feet of hose on a variable drag reel.



- Close coupled pump & motor
- Triplex stainless steel piston
- Variable Tension Drag Convex Reel
- Click-Set pressure regulator
- Optional cart, model MS-20E
- Bottom draw conversion kit
- 50 gallon solution tank
- Solid Rubber Wheels
- Drain valve
- Anti-vortex baffle
- Forward motion gun
- 1.5 HP electric motor
- Long stroke length pump
- Sumped Tank

Voltage	Amperage	Maximum Pressure	Maximum Discharge Rate	RPM	Dimensions	Hose Length	Pump Type
115V/208-230v	13.6a/7.5-6.8a	500 psi	4 GPM	1750	L:50 W:27 H:50	150', 200', 250'	Triplex Piston Pump





## Pulse Fog Bio

The PulsFOG rapidly applies chemicals as a fog. The ultra-fine cloud of droplets penetrates deep into the plant canopy covering all surfaces, ensuring excellent control of greenhouse pests and diseases.

The PulsFOG advantage is speed. With models that can treat 150,000 square feet in as little as 45 minutes, the PulsFOG makes quick work of chemical application.

For the application of heat-sensitive products and biological formulations, Dramm offers the BIO PulsFOG units. These fogger utilize a second solution tank and a second set of injection nozzles. The second tank is filled with water which is used to cool the exhaust, allowing for heat-sensitive products to be used.



PulseFog Model	Weight Empty	Output Time	Distance Chem Propelled	Chem Tank Capacity	Fuel Tank Capacity
K-50 Large Bio PulsFOG®	99.2 lbs	60-150L/hr	393ft	2-30 liter tanks / 2-7.8 gal tanks	20 liters / 5.2 gal
K-3/20BIO 101 HP Non-Portable, 4 Nozzles	67 lbs.	60L/45 min	VK-1 200ft / VK-2 100ft	2-30 liter tanks / 2-7.8 gal tanks	2-20 liters / 2- 5.2 gal tanks

## Auto-Fog

The Dramm Autofog automatically sprays areas up to 70,000 square feet with no applicator present. The ultra-fine cloud of droplets penetrates deep into the plant canopy covering all surfaces, ensuring excellent control of greenhouse pests and diseases.

The Autofog saves time and money by eliminating the labor needed to spray while reducing the amount of chemical needed to control your pests. By creating billions of tiny spray droplets, the Autofog treats large areas with less chemical solution. Just set the timer, mix the chemical and leave. The Autofog does the rest. The next morning, ventilate the greenhouse, clean up the Autofog.

The Autofog is available as a complete unit or may be mounted in the greenhouse.



AutoFog Model	Coverage Area	Coverage Area (w/HAF)	Power	Description
MLVH-10A	Up to 5,000 sq ft.	Up to 7,000 sq ft.	120v AC	Sing Nozzle
SLVH-20A	Up to 12,000 sq ft.	Up to 26,000 sq ft.	120v AC	Air Assist

## Hudson NeverPump™ Bak-Pak® Sprayer

- Lead acid battery sprays for 10 continuous hours on a single charge
- Extra large fill opening prevents spills when adding chemical
- Bonus nozzle system includes 4 different nozzles (adj. long reach, double cone, flat fan, shower)
- Extra long 20" fiberglass/poly spray wand
- 72" PVC power sprayer-style hose
- Locking poly control valve — comfortable, thumb operated
- Includes AC charger that completely charges battery in 9 hours
- Chemical-resistant straps with adjustable pads



Item Number	Tank Volume	Weight	Carton Dimensions
HS13854	4 gal / 15 liter	19.4 lbs	22.65" H x 15.75" W x 7.66"D

## Stuppy's Aqua Turret

**An Improved Way to Water Efficient:** Broad fan-shaped spray pattern waters large area around base of plant without washing or packing soil.

**Low Cost:** One "Aqua Turret" does the work of three individual watering devices. It is designed with three orifice pins of different sizes for low medium or high volume.

**Ease of Installation:** Aqua Turrets complete with pre-cut tubing and inserts require no drilling or cementing.

**Quality Parts and Workmanship:** Assures equal volume and distribution of water and liquid feed to each plant, cut labor and maintenance costs to a minimum.



Aqua Turret	.150 I.D. Leader Tube	.150 I.D. Brass Insert	.150 I.D. Installation Tool
Item Number: <a href="#">SI6274</a>	Item Numbers: <a href="#">SI6233</a> (1000ft) / <a href="#">SI6236</a> (4000ft)	Item Number: <a href="#">SI6225</a>	Item Number: <a href="#">SI6228S</a>



### Fogg-It Nozzle

All bronze. Gives a fine mist. A great aid in watering cuttings and delicate stock and hand misting. Available in 4 volumes.



Item Number	Color	Coverage Area (w/HAF)
FN.5GPM	Green	Superfine 1/2 GPM
FN1GPM	Purple	Fine 1 GPM
FN2GPM	Orange	Low Volume 2 GPM
FN4GPM	Blue	Heavy Volume 4 GPM

### 1/4 Turn Shutoff Valve

Machined from solid brass or durable plastic. Set with Quad ring and "O" ring pressure seals. All threads are 3/4".



Item Number	Description
DC#300	#300 Brass Shut-Off, 3/4 Female Hose Thread to 3/4 Male Hose Thread
DC#74	#74 Plastic Reinforced Shut-Off, 2/4 Female to 3/4 Male Hose Thread



### Number 400 Water Breakers Lemon Head 750 Water Breaker Red Head 1000 Water Breaker

Breaks the water pressure and gives a fine even spray. Excellent results.

Item Number	Description
DC400A	Aluminum 400 Hole
DCC400PL	Plastic 400 Hole
DC750PLC	Plastic 750 Hole
DC1000	Plastic 1000 Hole



### Number 170 Water Breaker

A special breaker for watering pots. Made of lightweight aluminum w/a rate of flow of 7 1/2 gallons per min. It concentrates a soft flow of water in a small area which will not wash away soil from the pot nor disturb delicate plants.

Item Number	Description
DC170	All Aluminum
DC170PL	Plastic Body



### Extension Handle

Lightweight aluminum handle will permit easier watering in hard-to-reach areas. 3/4" diameter with a bend of approximately 65 degrees at the male end. Rubber grip.

Item Number	Size
DC116-G	16"
DC124-G	24"
DC136-G	36"
DC136-GB	36"-120 degree bend
DC148-G	48"
DC148-GB	48"-120 degree bend

### Heavy Duty Commercial Hoses - Custom Made - Red

Custom made commercial grade hoses for water, air or steam are available in all diameters and lengths. The hose fittings are made with corrosion resistant brass for long life and durability. Bulk reels are available with fittings (male, female and ferrules) as well as hose crimpers and die sets for installation.

Item Number	I.D. Inches	O.D. Inches	Working Pressure	Approx. Wt. Per Cubic Ft.	Length
GAGH5850	5/8	15/16	200 psi	23.2	50 ft.
GAGH58100	5/8	15/16	200 psi	23.2	100 ft.
GAGH3450	3/4	1 1/8	200 psi	33.5	50 ft.
GAGH34100	3/4	1 1/8	200 psi	33.5	100 ft.



### Hozon Hose Attachment

Attaches between hose and faucet. Suction tube is dripped into bucket of solution fertilizer which is drawn in and safely diluted and applied while you water. Hozon will draw up to one gallon of concentrated solution in about 5 minutes. This item is high quality and made in America by Phytotronics, not the lesser quality imitation.



Item Number	Description	Dispensing Rate	Weight
PT00002 - Regular	1:16 - 3' Hose w/Strainer	1 Gallon per 3-5 min	1.76 ounces



Creating the right nutrient mix for your hydroponic growing operations is a delicate science. With Dosatron's full line of injectors, you can automate your process to create fine-tuned, multi-chemical mixes with repeatable results, every time!

### The Dosa-Cart System

The Dosa-Cart System is simply the easiest and most convenient way to fertilize and treat your plants...while you water. The Dosa-Cart system keeps your profits blooming!

#### Portable

- Designed for excellent stability.
- Pneumatic tires roll easily over rough surfaces.
- Ergonomic-design kickplate for easy counterbalancing of fully loaded cart.
- Dosa-Cart goes where you need it



#### Easy To Use

- 12 gallon tank has pitched base with bottom cleanout valve, just rinse and drain.
- Tank designed to avoid leaks or spills - High impact plastic with threaded cap.
- Push-on - pull-off hose couplings.
- Measures in liters and gallons.

#### Accurate

- Dosatron injectors provide a constant ratio, despite variations in water flow.
- Simple fertilize adjustments with dial-in ratios.

#### Built To Last

- Heavy steel welded construction
- Cold rolled steel axels for superior strength
- Rust inhibiting electrostatic enamel finish

Tank Size	Cart Construction	Tire Size	Cart Dimensions
15 Gallons	Polyethylene (clear)	10" no-flat tires	45.5"H x 16"W x 20"D
Additional Features	Compatible Injectors	Part Number	Recommended Accessories
Crash bar, clean-out valve	7 GPM, 11 GPM, 14 GPM	HS15-16	Quick Hook-Up Kit

**Filter Kits:** Dosatron requires that a filter kit be installed with every injector is void. There are 3 available.

Product Number	Product
DIAKF5AP11	3/4" Filler Kit 200 Mesh
DIAKF5AP20	1" Filler Kit 200 Mesh
DIAKF5	1 1/2" Filter Kit 200 Mesh

#### DosaCart Hookup Kits

Product Number	Description
HSPK58	7, 11 and 14 GPM (Hook-Up Kit only)
HSPKD45	20 GPM (Hook-Up Kit only)
HSPK58-PAA	7, 11 and 14 GPM (Hook-Up Kit only)



### Dosatron International Fertilizer Injectors Non-Electric Fertilizer Chemical Injectors

Pipe Size	3/4" NPT Thread
Size	18.5"H x 6.25"W
Weight	6 lbs.
Accessories	Mounting bracket, suction hose with strainer and weight, operating manual
Other	Corrosive materials units also available

#### 14 GPM



Pipe Size	3/4" NPT Thread
Size	21" H x 6 5/16" W
Weight	6 lbs.
Accessories	Mounting bracket, suction hose with strainer and weight, quick start guide

#### 14 GPM (MZ3000)



Pipe Size	1" NPT Thread
Size	24"H x 7.5"W
Weight	8 lbs.
Accessories	Mounting bracket, manual bypass suction hose with strainer and weight, operating manual
Other	Side injection models also available

#### 20 GPM





Pipe Size	1 1/2" PVC
Size	23"H x 12"W
Weight	12 lbs.
Accessories	Mounting bracket, manual bypass suction hose with strainer and weight, bypass hose operating manual

### 40 GPM



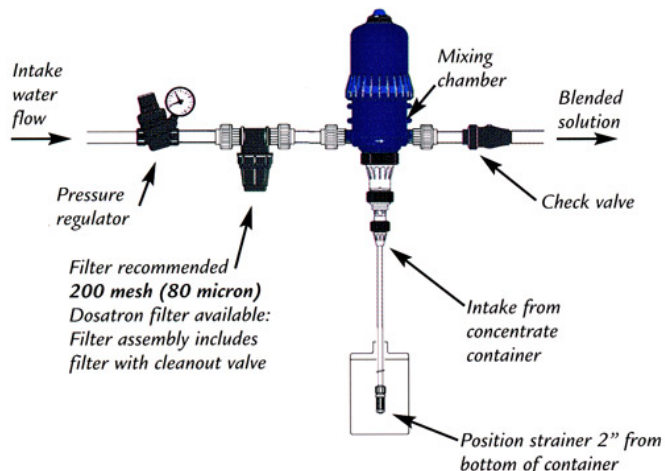
Pipe Size	2" PVC
Size	55"H x 15"W
Weight	47 lbs.
Accessories	Set of legs, manual bypass suction hose with strainer, vacuum breaker, operating manual

### 100 GPM

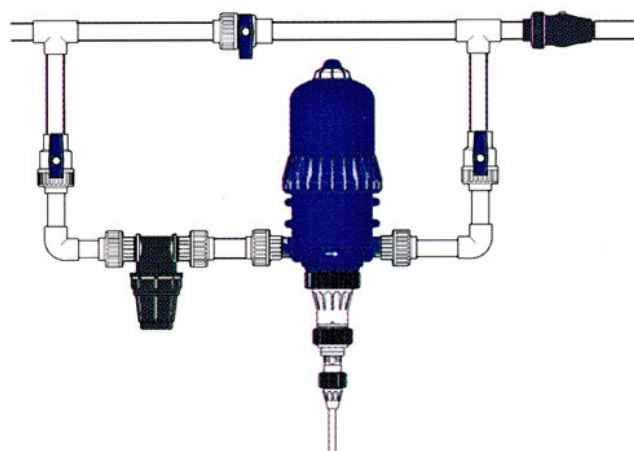


Maximum Flow Rate	Flow Range (Gallons Per Minute)	Pressure Range	Ratios	Percent
14 GPM	0.05 to 14 GPM	4.3 to 85 psi	1:500 to 1:50	0.2 to 2%
14 GPM (MZ3000)	0.05 to 14 GPM	4.3 to 85 psi	1:3000 to 1:333	0.03% to 3%
20 GPM	0.04 to 20 GPM	7 to 70 psi	1:500 to 1:66	0.2 to 1.5%
40 GPM	2.2 to 40 GPM	2 to 120 psi	1:500 to 1:50	0.2 to 2.0%
100 GPM	5 to 100 GPM	2 to 120 psi	1:500 to 1:50	0.2 to 2.0%

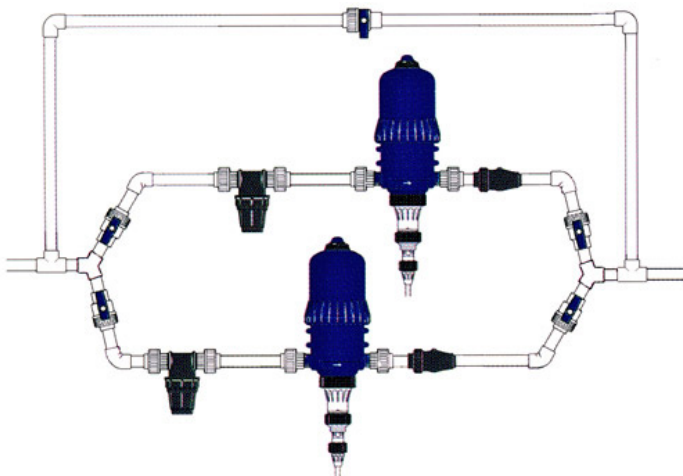
### Standard Installation



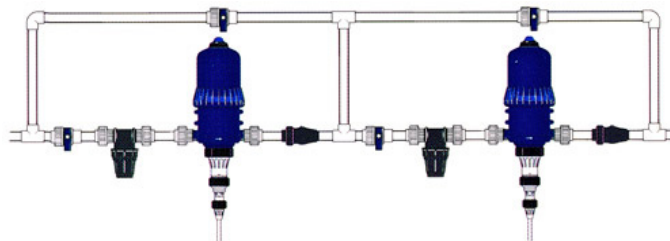
### Standard Bypass Installation



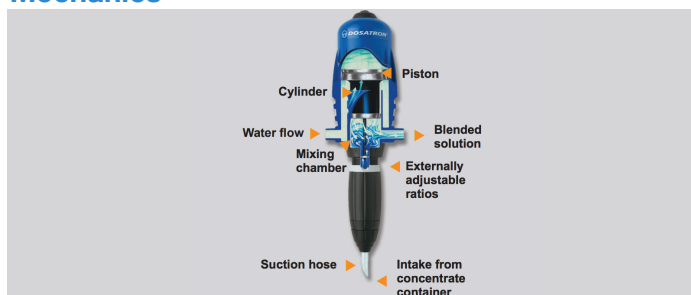
### Parallel Assembly



### Series Installation



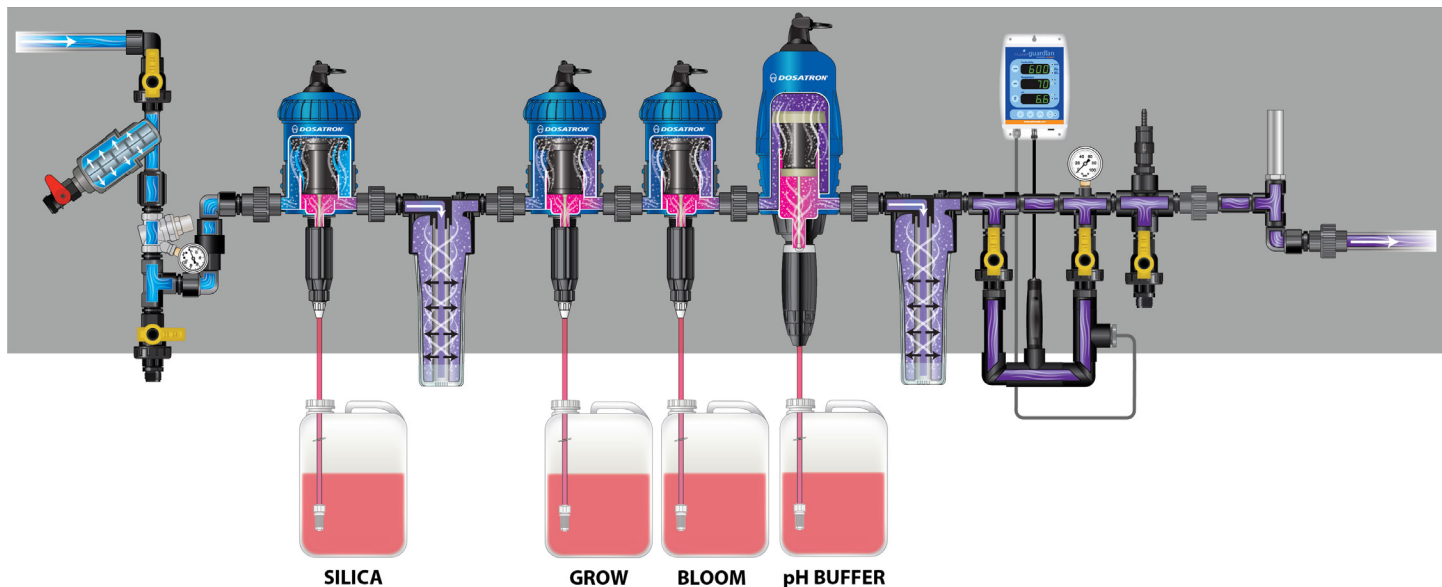
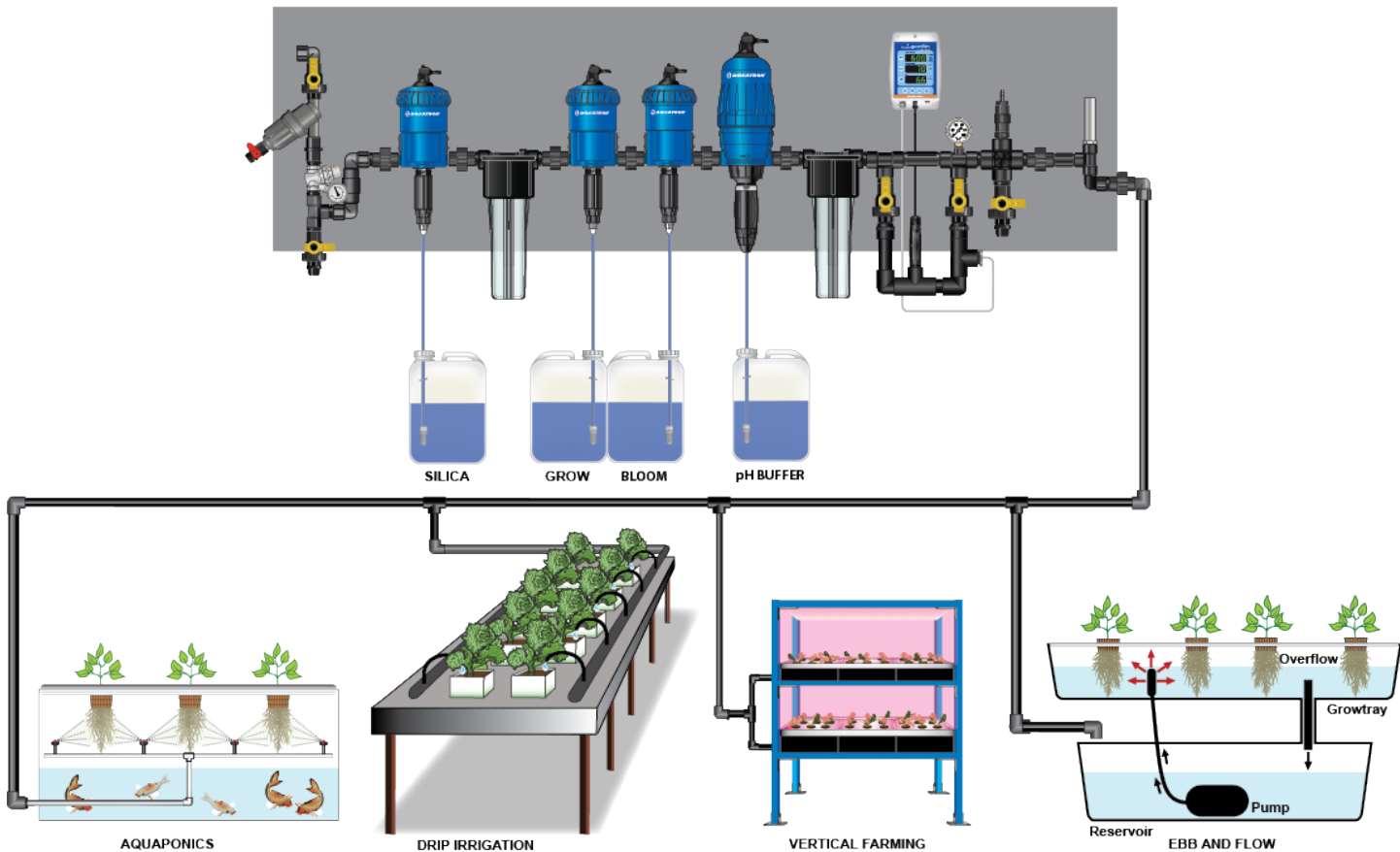
### Mechanics





### Nutrient Delivery System (NDS)

The Nutrient Delivery System is a simplistic system made up of four main panel sections which can be arranged to accommodate a wide variety of fertigation programs. With total control in mind, customizing the entire panel is easy based on your personal nutrient program! The Nutrient Delivery System thrives anywhere, from greenhouse environments to outdoors, allowing it to be installed in any application. And, by automating the nutrient delivery process it accurately dispenses the desired solution. This makes the time draining practice of “measure and pour” a thing of the past, saving you time and money!





### Li'l Bud-D (5 Gallon)



The Li'l Bud-D cart is perfect for spot treatments and accommodates the 7, 11, and 14 GPM Dosatron injectors. Features include: made of polyethylene, includes cart and 5-gallon bucket with lid. (Dosatron Injector and Cart Hook-Up Kit Sold Separately.)

The Li'l Bud-D Hook-Up Kit makes cart set up easy and protects cart from tipping over. It includes: filter, stainless steel clamps, 5/8" hose, and adapters.

*(Dosatron Injector and Cart Sold Separately.)*

Part Number	Product	Description
HS15-5	Lil Bud-D	5-Gallon (Includes Cart and 5-Gallon Bucket with Lid)
HSPK58LB	Lil Bud-D Hookup Kit	7, 11 and 14 GPM (Hook-Up Kit Only)

### Eco-Cart - 14 GPM (5-gallon)



The Eco-Cart provides quick-and-easy proportional on-demand dispensing for a great value and is perfect for garden centers, home gardens, and is ideal for spot treatments. This complete kit was designed for the 14 GPM-D14MZ2 and includes: cart, 5-gallon bucket with lid, D14MZ2 injector, and plumbing.

Part Number	Product	Description
HSECO-D14MZ2	Eco-Cart	5-gallon (Complete Kit: Cart, 5-Gallon Bucket with Lid, D14MZ2 Injector, and Plumbing)
HSECO	Eco-Cart (without injector)	Own a Dosatron? No Problem. Our Eco-Cart is available without the injector. (Includes: Cart, 5-Gallon Bucket with Lid, and Plumbing)

### Eco-Cart - 11 GPM (5-gallon)



This Eco-Cart is perfect for the homeowner. It includes all you need to feed your flowers and plants. Designed with the 11 GPM-D25F1 (fixed 1:100), it includes: cart, 5-gallon bucket with lid, D25F1 injector, and plumbing.

Part Number	Product	Description
HSECO-D25F1	Eco-Cart	5-gallon (Complete Kit: Cart, 5-Gallon Bucket with Lid, D14MZ2 Injector, and Plumbing)
HSECO	Eco-Cart (without injector)	Own a Dosatron? No Problem. Our Eco-Cart is available without the injector. (Includes: Cart, 5-Gallon Bucket with Lid, and Plumbing)

### Dosatron Proportioner



Dosatron's self-cleaning polypropylene proportioner features flow rates up to 2 GPM at 58 psi in washing mode and up to 13 GPM at 58 psi in rinse mode. Injection rate: 1:100 (1%) to 1:2.3 (43.6%).

A simple 1/4 turn of the bypass handle changes the function from dosing (washing and disinfection) to rinsing and a system of 12 color coded tips are provided for 13 possible injection rates. For easy maintenance, turn the handle 180 degrees to back flush mode.

Part Number	Product	Description
DSA-VENTURI	Proportioner	Dosatron Self-Cleaning Polypropylene Proportioner



### Pressure Gauge



Part Number	Description
PG100	3/4" Pressure Gauge, bottom mount only, 1/4" MPT, 1 - 100 psi, 2" face, brass. This gauge is designed for use with gas, oil, and water or any medium not corrosive to brass or bronze
PG160-MP-T	Stainless steel Pressure Gauge with extra needle that remains at the maximum pressure that was reached. 2 1/2" face. 160 psi with max pointer.

### Pressure Gauge Kit



Part Number	Description
PG100-34KIT	0-100 psi, 3/4" FPT
PG100-100KIT	0-100 psi, 1" FPT
PG100-150KIT	0-100 psi, 1 1/2" FPT

### Water Hammer Arrestor



Water hammer is defined as: a pressure surge or wave caused when a fluid in motion is forced to stop or change directions suddenly. For installations with strong water hammer potential we recommend using a water hammer arrestor.

Part Number	Description
WHA34-SS	3/4" MPT x 6 1/2" tall, stainless steel water hammer arrestor. Normal operating pressure 35 to 500 psi. Spike pressure not to exceed 2,000 psi.
WHA100-SS	1" MPT x 7" tall, stainless steel water hammer arrestor. Normal operating pressure 35 to 500 psi. Spike pressure not to exceed 2,000 psi.

### 3/4" Totalizer Analogue Water Meter



Lightweight and versatile polymer water meter. Multijet with a maximum flow rate of 20 GPM.

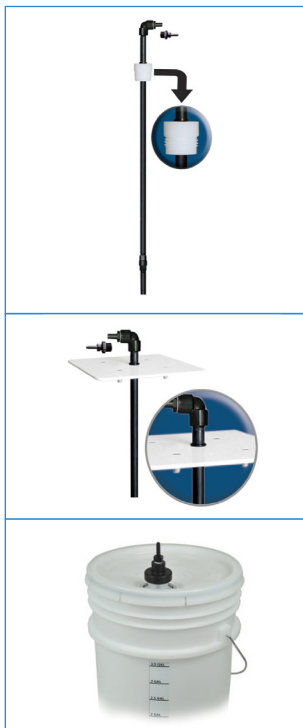
Part Number	Description
WM34	3/4" totalizer water meter, pulse valve is 1/10 gal (1 pulse per 10 gal), poly, lightweight analogue and reads gallons.
WM34-1PPG	3/4" totalizer water meter, pulse valve is 1/1 gal (1 pulse per 1 gal), poly, lightweight analogue and reads gallons.





## ChemiStick Pickup Assembly

11



The ChemiStick was designed to be used with either a barrel or tote and easily connects to existing pick-up tubes.

Part Number	Description
CS33	33" long with bung adapter for barrel
CS48	48" long with bung adapter for barrel
CS54	54" long with bung adapter for barrel
CSP48	48" long with tote plate cover
CSP54	54" long with tote plate cover
CS12-6	ChemiStick for 5-gallon bucket. Provides easy set up and is vented. Size: 1/4" (6mm). Universal fitting can be used with any 5-gallon bucket with spout. (5-Gallon Bucket and Lid Not Included.)
CS12-8	ChemiStick for 5-gallon bucket. Provides easy set up. Size: 5/16" (8mm).

## Filters

All our filters include a cleanable, permanent, stainless steel filter. No replacement cartridges necessary.



Part Number	Description
AKF5AP11KIT-A	3/4" Filter Kit, 200 mesh/80 micron. Quick clean out valve, poly. Schedule 80 unions included. (Kit.)
AKF5AP20KIT-A	1" Filter Kit, 200 mesh/80 micron, poly. Schedule 80 unions included. (Kit.)
AKF5AP40-A	1 1/2", 200 mesh/80 micron, poly.
AKF5AP11T	3/4" FNPT T-shaped, space saving, filter, 200 mesh/80 micron. Fiber charged poly. The flush port can be adapted for clean out of the 3/4" FPT ball valve.
AKF5AP20T	1" T-shaped, space saving filter, 200 mesh/80 micron, fiber charged poly, industrial grade.
AKF5AP100-A	2" Filter, 200 mesh/80 micron, poly.
AKF5AP11T-V	3/4" T Filter, 200 mesh/80 micron, industrial grade poly. Small, compact filter - good for tight installations.









## Etatron - Electric Chemical Dosing Pumps

The eOne Series Electronic Metering Pumps provide constant dosing, energy savings, and low operating temperatures resulting in reduced mechanical stress. They feature:

- Alarm to detect suction or discharge interruption
- Standard PVDF solenoid head
- Manual air bleed pump head for fast priming
- Equipped with ceramic ball valve
- 6.5 ft. suction height
- PVDF injection valves equipped with thread options: 1/2", 3/8" and m10 eOne Series
- Reduced operating temperature to increase reliability
- Low mechanical stress for better performance Compact design and uses approximately 60% less energy IP65 acid resistant housing
- Long lasting unique one piece PTFE diaphragm design 120 or 230 V - 50/60 Hz
- Works off water meters









	Product Name	Part Number	Description
	eOne Basic Dosing Pump	<a href="#">Contact Dilution Solutions, 800-523-8499, for your specific part #</a>	<ul style="list-style-type: none"> <li>• Manual flow rate adjustment 0 - 100% and 0 - 20%</li> <li>• Dosing frequency 180 impulses per minute</li> </ul>
	eOne MA Dosing Pump	<a href="#">Contact Dilution Solutions, 800-523-8499, for your specific part #</a>	<ul style="list-style-type: none"> <li>• Manual flow rate adjustment 0 - 100% and 0 - 20%</li> <li>• High dosing frequency of 300 impulses per minute</li> <li>• Underload suction alarm</li> <li>• Overload discharge alarm</li> <li>• Low level input</li> </ul>
	eOne MF Multifunction Microprocessor Dosing Pump	<a href="#">Contact Dilution Solutions, 800-523-8499, for your specific part #</a>	<ul style="list-style-type: none"> <li>• High dosing frequency of 300 impulses per minute</li> <li>• Backlit graphic display</li> <li>• Underload suction alarm</li> <li>• Overload discharge alarm</li> <li>• Flow sensor alarm</li> <li>• Low level input</li> <li>• Password protection</li> <li>• Flexible user-friendly interface</li> <li>• Programmable dosing from water meter signal</li> <li>• When used with a water meter the pump automatically adjusts the frequency of the dose based on the flow rate</li> </ul>
	eOne Plus Microprocessor Dosing Pump	<a href="#">Contact Dilution Solutions, 800-523-8499, for your specific part #</a>	<ul style="list-style-type: none"> <li>• High dosing frequency of 300 impulses per minute</li> <li>• Backlit graphic display</li> <li>• Underload suction alarm</li> <li>• Overload discharge alarm</li> <li>• Flow sensor alarm</li> <li>• Low level input</li> <li>• Relay output</li> <li>• Password protection</li> <li>• Flexible user-friendly interface</li> <li>• Programmable dosing from water meter signal</li> <li>• When used with a water meter the pump automatically adjusts the frequency of the dose based on the flow rate</li> <li>• Ability to work off probes</li> <li>• Suitable for proportional and control applications pH, Rx, Cl, ppm monitoring</li> </ul>









## Foam Up Series

Our Foam Up Series creates foam without the need for compressed air! Use downstream from your Dosatron to create a wet or clinging foam that increases chemical contact time and effectiveness.

	Part Number	Description
	X400-108	Airless #10 foam nozzle, low-flow adjustable fan pattern, 1/2" FPT, 1 GPM at 40 psi, pump fed. Ideal for smaller close-up applications. Poly.
	X400-109	Airless foam wand, PP, 1.5 GPM at 40 psi, pump fed. 6' throw at 40 psi. Ideal for larger applications. Poly.
	X400-110	Airless foam wand, PP, 6.3 GPM at 40 psi, pump fed. Poly.
	X400-111	Airless #10 foam nozzle equipped with ball valve, poly, 1/2" FPT, 1 GPM at 40 psi with stainless steel ball valve, pump fed.
	X400-112	Airless foam wand, poly, PP, equipped with ball valve, 1.5 GPM, 6' throw, at 40 psi with stainless steel ball valve, pump fed.
	X400-113	Airless foam wand, poly, PP, equipped with ball valve, 6.3 GPM at 40 psi with stainless steel ball valve, pump fed. 20' throw at 60 psi.

## Compact Airless Foamers/Sprayers

Designed to optimize the use of chemical and water, these compact airless foamers produce just the right amount of foam and include 20 colored tips that allow you to spray with 21 possible dilution rates. Creates clinging or wet foam. Quick disconnect, precision metering tips, durable, with machined polypropylene body and wand.

	Part Number	Description
	X400-122	Sprayer with a 22 oz. bottle, polypropylene body and wand. 1/2" supply line. Water pressure 20-100 psi. Water flow @ 40 psi - 2.3 GPM. Low flow.
	X400-106	Airless foamer has a 22 oz. bottle with polypropylene body and wand. Water pressure 20-100 psi. Water flow @ 40 psi - 0.54 GPM. Higher flow.
	X400-107	Airless foamer with a 22 oz. bottle with polypropylene body and wand. Water pressure 20-100 psi. Water flow @ 40 psi - 1.30 GPM. Low flow.
	X400-122-89	Sprayer has an 89 oz. bottle with polypropylene body and wand. 1/2" supply line. Water pressure 20-100 psi. Water flow @ 40 psi - 2.3 GPM. Low flow.
	X400-106-89	Airless foamer with an 89 oz. bottle with polypropylene body and wand. Water pressure 20-100 psi. Water flow @ 40 psi - 0.54 GPM. Higher flow.
	X400-107-89	Airless foamer includes an 89 oz. bottle with polypropylene body and wand. Water pressure 20-100 psi. Water flow @ 40 psi - 1.30 GPM.



DEMA is continuously updating our product range to meet the needs of our global customers. From 2 people in 1956 to more than 300 employees today, DEMA continues to grow and maintain the status as a leading provider of chemical dispensing and fluid control equipment.



### MixRite

Fertilizer & Chemical proportional water driven injectors, with no other energy required.

### How Does It Work?

- Positive displacement water driven injector
- Solution is added in proportion to water flow for accurate mixing
- Adjustable injection rate
- Constant concentration of additive regardless of flow or pressure
- No wasted water
- No electricity required
- Higher flow rate, less friction loss and longer life than other comparable models
- Uses only 20% of pressure to drive pump



### MixRite Models

#### TF-2.5

- Water pressure from 14.7 to 120 PSI (1-8 bar)
- Flow Rate from 0.08 to 11 GPM
- Weight: 13.2 Lbs (6.0 kg)
- Coupling: 3/4"



Product Number	Rate of Additive
TF-2.5-001	Rate of additive: 0.1% to 1%
TF-2.5-002	0.3% to 2%
TF-2.5-005	0.4% to 4%

#### TF-10

- Water pressure from 14.7 to 120 PSI (1-8 bar)
- Flow Rate from 2 to 45 GPM
- Weight: 16.23 Lbs (7.38 kg)
- Coupling: 1.5" or 50mm



Product Number	Rate of Additive
TF-10-001	Rate of additive: 0.1% to 1%
TF-10-002	0.2% to 2%
TF-10-005	1% to 5%

#### TF-5

- Water pressure from 14.7 to 120 PSI (1-8 bar)
- Flow Rate from 0.1 to 22 GPM (0.2-5m<sup>3</sup>/h)
- Weight: 13.2 Lbs (6.0 kg)
- Coupling: 1" or 32 mm



Product Number	Rate of Additive
TF-5-001	Rate of additive: 0.1% to 1%
TF-5-002	0.2% to 2%
TF-5-005	1% to 5%

#### TF-25

- Water pressure from 14.7 to 120 PSI (1-8 bar)
- Flow Rate from 9 to 110 GPM
- Weight: 46.42 Lbs (21.10 kg)
- Coupling: 2" or 63 mm



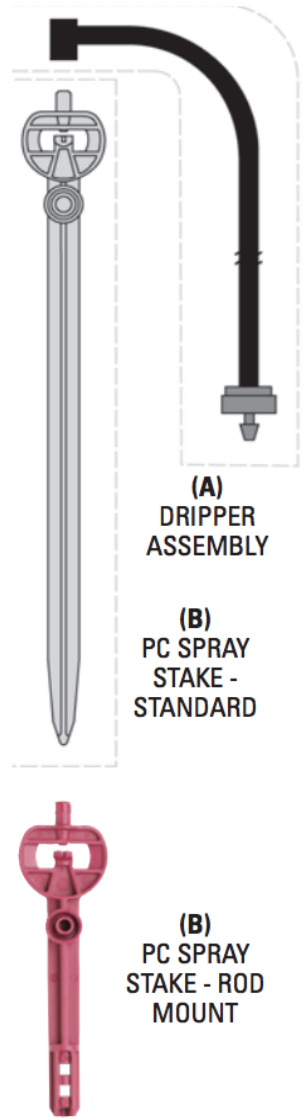
Product Number	Rate of Additive
TF-25-001	Rate of additive: 0.1% to 1%
TF-25-002	0.3% to 2.5%
TF-25-005	1% to 5.5%



**PC Spray Stake Assemblies - Pressure Compensating - Standard with Flex PE Tubing**

For complete assembly: Order one **(A)** Drinker Assembly and one **(B)** PC Spray Stake

Model Number	Stake	Pattern	Tube Length	Pack Qty	
<b>3.2 GPH Plum Stake</b>					
01PSD032-36B			36"	25	<b>A</b>
01PSD032-48B			48"	25	
01PSDS-PL1-B	Standard	Single		50	<b>B</b>
01PSDSR-PL1-B	Rod Mount	Single		50	
<b>6.6 GPH Grey Stake</b>					
01PSD066-36B			36"	25	<b>A</b>
01PSD066-48B			48"	25	
01PSDS-GY1-B	Standard	Single		50	<b>B</b>
01PSDS-GY2-B	Standard	Double		50	
01PSDSR-GY1-B	Rod Mount	Double		50	
01PSDSR-GY2-B	Rod Mount	Double		50	
<b>7.9 GPH Brown Stake</b>					
01PSD079-36B			36"	25	<b>A</b>
01PSD079-48B			48"	25	
01PSDS-BR1-B	Standard	Single		50	<b>B</b>
01PSDS-BR2-B	Standard	Double		50	
01PSDSR-BR1-B	Rod Mount	Single		50	
01PSDSR-BR2-B	Rod Mount	Double		50	
<b>10.6 GPH Blue Stake</b>					
01PSD106-36B			36"	25	<b>A</b>
01PSD106-48B			48"	25	
01PSDS-BL1-B	Standard	Single		50	<b>B</b>
01PSDS-BL2-B	Standard	Double		50	
01PSDSR-BL1-B	Rod Mount	Single		50	
01PSDSR-BL2-B	Rod Mount	Double		50	



**Spray Stakes - Non Pressure Compensating**

Model Number	Description	Bag Qty
01SSYL-B	Yellow Stake 3.0 GPH	100
01SSGN-B	Green Stake 5.0 GPH	100
01SSBK-B	Black Stake 7.0 GPH	100



**Flex Black Polyethylene (PE) Tubing (5/3mm)**

Model Number	Description	Coil Length
15FPE53	Flex Black PE Tubing 5/3mm	3,000'
15FPE53-1000	Flex Black PE Tubing 5/3mm	1,000'

**Pre-Cut Flex Black Polyethylene (PE) Tubing (5/3mm)**

Model Number	Length	Pack Qty
15FPE53-36	36"	100
15FPE53-48	48"	100



**WPCJ DRIPPER**  
.5 GPH  
01WPCJL2-B OR  
21520-001040

**SUPER FLEX UV  
WHITE PE TUBE**  
15FPEW53-XX

**SLIMLINE EZ  
CLOSE WEIGHT**  
1107008SC-B OR  
00130-000033



### SlimLine EZ Close™ Weight Assemblies - 0.5 GPH

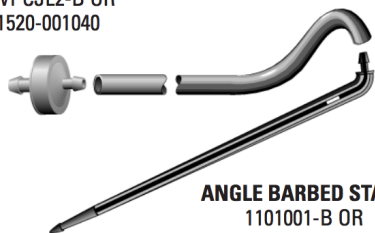
- Pressure Compensating with Check Valve and Shut-Off Feature
- Standard with Super Flex UV White PE Tubing

Model Number	Tube Length	Pack Qty
01HBA2W-18	18"	25
01HBA2W-24	24"	25
01HBA2W-36	36"	25
01HBA2W-48 (Assembled with WPC5 Dripper.)	48"	25
1107008SC-B	Weight Only	25

\*All tube lengths greater than 36" are assembled with a WPC5 dripper. 1.0 and 2.0 GPH also available. Sold in pack quantities ONLY

**WPCJ DRIPPER**  
.5 GPH  
01WPCJL2-B OR  
21520-001040

**SUPER FLEX UV  
WHITE PE TUBE**  
15FPEW53-XX



**ANGLE BARBED STAKE**  
1101001-B OR  
32000-001806

### Dripper Stake Assemblies - 0.5 GPH

- Pressure Compensating with Check Valve and Shut-Off Feature
- Standard with Super Flex UV White PE Tubing

Model Number	Tube Length	Pack Qty
01WPCJL2AW-24	18"	25
01WPCJL2AW-30	30"	25
01WPCJL2AW-36	36"	25

### Dripper and Spray Stake Assembly Components



Model Number	Key (Pictured Above)	Description	Bag Qty
1109006-B	1	5 mm Insert Connector - Barb x Threaded	250
11002520-B	2	5 mm Elbow	50
11WPCON-B	3	3 mm Flex Tube Adapter (for nipple outlet drippers)	250
1101001-B	4	Angle Barbed Stake	250
1107008C-B	5	Red Plastic Weight with Shut-off Feature	25
11090552-B	6	5 mm Tee Barb x Threaded x Threaded	250
1107008SC-B	7	Slimline EZ Close White Weight	25

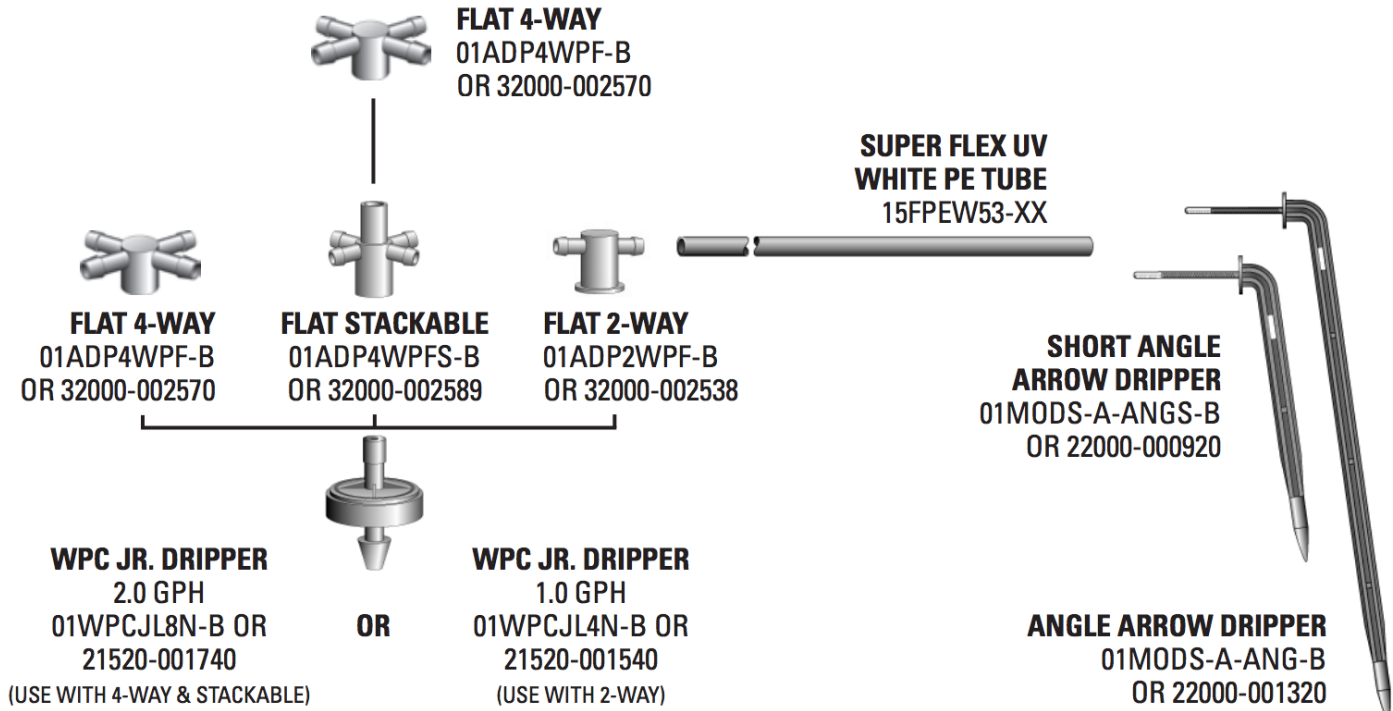
\*Sold in bag quantity only



## Multi-Outlet Dripper Assemblies

Standard with Super Flex UV White PE Tubing

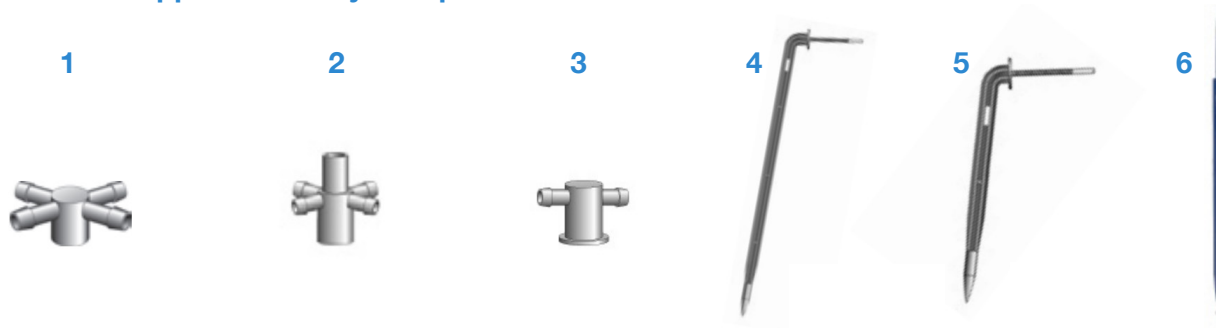
For a complete assembly, order one **(A)** Manifold Assembly and one **(B)** Woodpecker Pressure Compensating Junior Dripper. The flow per arrow dripper is equal to the dripper flow divided by the number of arrow drippers on that assembly. To ensure plants will receive equal water flow, use the same assemblies on each zone.



Model Number	Arrow Dripper	Tube Length	Pack Qty	
<b>Flat 4-Way Multi-Outlet Dripper Assemblies</b>				
014DM-1818F	Standard	(4) at 18"	25	<b>A</b>
014DM-1818FS	Short	(4) at 18"	25	
014DM-1830F	Standard	(2) at 18" & (2) at 30"	25	
014DM-1830FS	Short	(2) at 18" & (2) at 30"	25	
014DM-2424F	Standard	(4) at 24"	25	
014DM-2424FS	Short	(4) at 24"	25	
014DM-2436F	Standard	(2) at 24" & (2) at 36"	25	
014DM-3030F	Standard	(4) at 30"	25	
01WPCJL8N-B	WPC Jr. Dripper 2.0 GPH		250	<b>B</b>
<b>Flat Stackable Multi-Outlet Dripper Assemblies</b>				
014DMS-1818F	Standard	(4) at 18"	25	<b>A</b>
014DMS-2424F	Standard	(4) at 24"	25	
014DMS-2436F	Standard	(2) at 24" & (2) at 36"	25	
014DMS-3030F	Standard	(4) at 30"	25	
01WPCJL8N-B	WPC Jr. Dripper 2.0 GPH		250	<b>B</b>
<b>Flat 2-Way Multi-Outlet Dripper Assemblies</b>				
012DM-2424F		36"	25	<b>A</b>
012DM-3030F		48"	25	<b>A</b>
01WPCJL4N-B	Standard		50	<b>B</b>



## Multi-Outlet Dripper Assembly Components



Model Number	Key (Pictured Above)	Description	Bag Qty
01ADP4WPF-B	1	Flat 4-Way Manifold	100
01ADP4WPF-S-B	2	Flat 4-Way Stackable Manifold	100
01ADP2WPF-B	3	Flat 2-Way Manifold	100
01MODS-A-ANG-B	4	Angle Arrow Dripper (6 3/8" length)	100
01MODS-A-ANG-S-B	5	Short Angle Arrow Dripper (3 3/4" length)	100
01MODS-ST-BK-B	6	Straight Arrow Dripper	100

\*Sold in bag quantity only

## Miscellaneous Components



Model Number	Key (Pictured Above)	Description	Bag Qty
1107737-B	1	Goof Plug	10
682901033	2	3 mm Plastic Punch (for drippers/sprinklers)	1
6804080	3	8 mm Metal Punch	1
PPUNCH8	4	8 mm Plastic Punch	1
45000-002270	5	Hanging Sprinkler Assy Tool for tubes over 48"	1

\*Sold in bag quantity only

## Flex Black Polyethylene (PE) Tubing (5/3mm)

Model Number	Description	Coil Length
15FPE53	Flex Black PE Tubing 5/3mm	3,000'
15FPE53-1000	Flex Black PE Tubing 5/3mm	1,000'
15PVC53	Flex Black PVC Tubing 5/3 mm	1,000'

## Super Flex UV White Polyethylene (PE) Tubing (5/3mm)

Model Number	Description	Coil Length
15FPEW53	Super Flex UV White PE Tubing 5/3 mm	3,000'

## Pre-Cut Super Flex White Polyethylene (PE) Tubing (5/3mm)

Model Number	Length	Pack Qty
15FPEW53-18	18"	100
15FPEW53-24	24"	100
15FPEW53-30	30"	100
15FPEW53-36	36"	100





## Woodpecker Pressure Compensating Junior Drippers (WPCJ)

With CNL Check Valve Feature and Barbed Outlet

Minimum Operating Pressure 10.2 psi

Used with SlimLine EZ Close™ Weight, Dripper Stake and PC Spray Stake Assemblies



Model Number	Color-Coded Inlet/Outlet	Nominal Flow (GPH)	Carton Qty	Bag Qty
01WPCJL1.2	Brown	0.32	13,000	-
01WPCJL1.2-B	Brown	0.32	13,000	250
01WPCJL2	Red	0.5	13,000	-
01WPCJL2-B	Red	0.5	13,000	250
01WPCJL3	Blue	0.7	13,000	-
01WPCJL3-B	Blue	0.7	13,000	250
01WPCJL4	Grey	1.0	13,000	-
01WPCJL4-B	Grey	1.0	13,000	250
01WPCJL8	Green	2.0	13,000	-
01WPCJL8-B	Green	2.0	13,000	250
01WPCJL12	Plum/Black	3.2	13,000	-
01WPCJL12-B	Plum/Black	3.2	13,000	250
01WPCJL25	Orange/Grey	6.6	13,000	-
01WPCJL25-B	Orange/Grey	6.6	13,000	250
01WPCJL30	Orange/Brown	7.9	13,000	-
01WPCJL30-B	Orange/Brown	7.9	13,000	250
01WPCJL40	Orange/Blue	10.6	13,000	-
01WPCJL40-B	Orange/Blue	10.6	13,000	250

## Woodpecker Pressure Compensating Junior Drippers (WPCJ)

With CNL Check Valve Feature and Nipple Outlet

Minimum Operating Pressure 10.2 psi

Used with Multi-Outlet Dripper Assemblies



Model Number	Color-Coded Inlet/Outlet	Nominal Flow (GPH)	Carton Qty	Bag Qty
01WPCJL2N	Red	0.5	12,000	-
01WPCJL2N-B	Red	0.5	12,000	250
01WPCJL4N	Grey	1.0	12,000	-
01WPCJL4N-B	Grey	1.0	12,000	250
01WPCJL8N	Green	2.0	12,000	-
01WPCJL8N-B	Green	2.0	12,000	250

## Woodpecker Pressure Compensating Drippers (WPC)

With CNL Check Valve Feature and Nipple Outlet

Minimum Operating Pressure 14.5 psi

Used with SlimLine EZ Close™ Weight Assemblies longer than 36"



Model Number	Nominal Flow (GPH)	Bag Qty
WPC5-250	0.5	250

**Note:** The nominal flow rate in liters per hour is indicated on the cap: 1, 2, 3, 4, and 8.

The barbed outlet fits Super Flex UV White PE Tubing, 15FPEW53 or Super Flex Black PE Tubing, 15FPE53.





## MegaNet™ Rotating Impact Sprinkler

1/2" Male Threaded Connection - Nominal Flow Rate at 33 psi

Model Number	Description	Nominal Flow (GPH)	Trajectory
MGN24D-088HO	Sprinkler Head Only - Yellow Nozzle	0.88 GPM	High 24°
MGN24D-110HO	Sprinkler Head Only - Purple Nozzle	1.10 GPM	High 24°
MGN24D-154HO	Sprinkler Head Only - Green Nozzle	1.54 GPM	High 24°
MGN24D-198HO	Sprinkler Head Only - Blue Nozzle	1.98 GPM	High 24°
MGN24D-242HO	Sprinkler Head Only - Brown Nozzle	2.42 GPM	High 24°
MGN24D-286HO	Sprinkler Head Only - Orange Nozzle	2.86 GPM	High 24°
MGN24D-330HO	Sprinkler Head Only - Red Nozzle	3.30 GPM	High 24°
MGN15D-088HO	Sprinkler Head Only - Yellow Nozzle	0.88 GPM	Low 15°
MGN15D-110HO	Sprinkler Head Only - Purple Nozzle	1.10 GPM	Low 15°
MGN15D-154HO	Sprinkler Head Only - Green Nozzle	1.54 GPM	Low 15°
MGN15D-198HO	Sprinkler Head Only - Blue Nozzle	1.98 GPM	Low 15°
MGN15D-242HO	Sprinkler Head Only - Brown Nozzle	2.42 GPM	Low 15°
MGN15D-286HO	Sprinkler Head Only - Orange Nozzle	2.86 GPM	Low 15°



## Vibro-Spray™ high Flow (HF) Sprinkler

1/2" Female Threaded Connection - Nominal Flow 1 GPM at 30 psi

Model Number	Description	Bag Qty
0302210-B	Vibro-Spray HF Sprinkler	0.88 GPM
032066208-B	1/2" Male Adapter x Male Micronet - Adapts to Hanging Sprinkler Assembly	1.10 GPM



## Sprinkler Components



**SPRINKLER STAND FEMALE X BARB CONNECTOR, TUBING, 1/2" FIPT, STAKE ADAPTER**



**MEGANET ROAD GUARD**

**MEGASTAND BASE**



**MEGASTAND ARM**

**MEGASTAND RISER**



**MEGASTAND SPRINKLER STAND (COMPLETE)**

Model Number	Description	Bag Qty
03N20STAND0948-B	Sprinkler Stand (connects to PE Lateral) includes: connector, 48" 9mm I.D. tubing, PE barb, 1/2" FIPT, 8mm stake adapter (no stake)	25
03N265080002610	Female x Barb Connector for Sprinkler Stand	1
SSP	Sprinkler Stand Plug	1
MGNFIL	MegaNet Filter	1
MGNRG	MegaNet Road Guard	1
PPUNCH8	8mm Plastic Punch	1
6804080	8mm Metal Punch	1
03175648	6mm Steel Stake, 48" length	1
MGNBASE	MegaStand Base for Riser	1
MGNSUPPORTARM	MegaStand Supporting Arm for Riser	1
MGNRISER-16	MegaStand Riser 1/2" MPT x 16"	1



## Sprinkler, Mister and Fogger Assemblies:

### Ordering Guidelines

Ordering Netafim sprinkler, mister and fogger assemblies is a simple two step process:

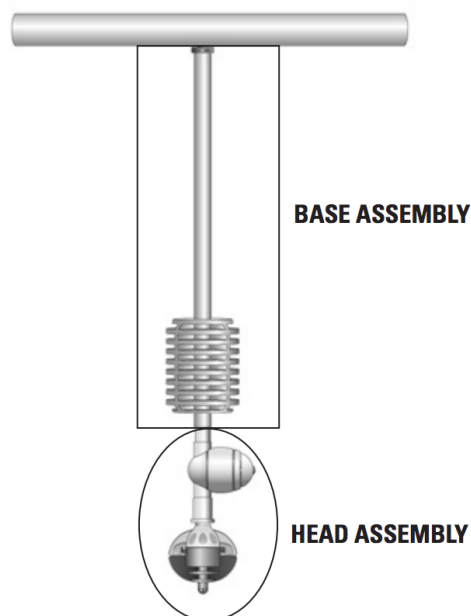
1. Select a Sprinkler, Mister or Fogger head based on application:
  - Watering: Sprinkler
  - Germinating: Mister
  - Humidifying or Cooling: Fogger
2. Select a Base Assembly based on the type of pipe used to supply water:
  - Polyethylene
  - Threaded pipe
  - Retrofit adapter for other manufacturer's fittings

The assembly is shipped as two parts (Head Assembly and Base Assembly) to be connected by the installer in the greenhouse.

Sprinklers/Misters: Use a 35 psi regulator and 120 mesh filter.

Foggers: Use a 65 psi regulator and a 140 mesh filter.

### EXAMPLE OF INSTALLED FINAL ASSEMBLY



## Hanging Assemblies for Sprinklers, Misters or Foggers

For Connection to Polyethylene (PE) Pipe

Model Number	Tube Length	Pack Qty
0300HSAC-12-B	12"	25
0300HSAC-18-B	18"	25
0300HSAC-24-B	24"	25
0300HSAC-30-B	30"	25
0300HSAC-36-B	36"	25
0300HSAC-48-B	48"	25
0300HSAC-48X-B	Extension*	25

Model Number	Tube Length	Pack Qty
0300HSAC-12	12"	200
0300HSAC-18	18"	200
0300HSAC-24	24"	200
0300HSAC-30	30"	150
0300HSAC-36	36"	150
0300HSAC-48	48"	150
0300HSAC-48X	Extension*	500

### Base Assemblies

**BARB X BARB CONNECTOR**  
031748W-B OR  
63000-001355

**SUPER FLEX UV WHITE PE  
(4/7 MM) TUBING**

**STABILIZER WEIGHT**  
03330C-B OR  
63000-002915

**BARB X FEMALE CONNECTOR**  
03220W-B OR  
63000-001953



### 1/2" Adapter

For Pipe Thread

Model Number	Bag Qty
03206-B	25

### Retrofit Adapter

Connect Netafim head assemblies to other manufacturer's fittings

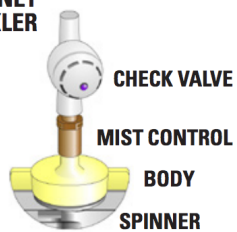
Model Number	Bag Qty
03302C-B	25



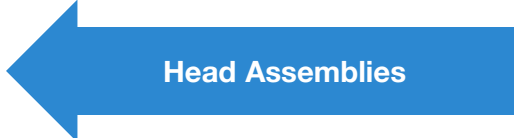
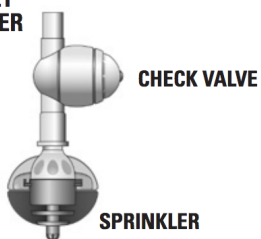


## Sprinkler, Mister and Fogger Assemblies

### SPINNET SPRINKLER



### VIBRONET SPRINKLER

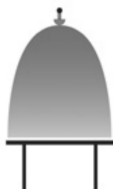


### Sprinkler Head Assemblies (Watering)

Note: All Head Assemblies are standard with Check Valve. Average flow at 32 psi.

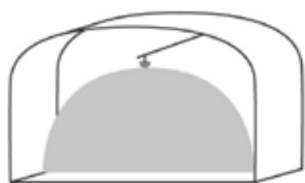
Code	Model Number	Description	Flow (GPH)	Bag Qty
VN-BL	0354040L-B	VibroNet Blue Sprinkler	9.2	25
VN-GN	0354050L-B	VibroNet Green Sprinkler	11.7	25
R-R-BL	0355120070BL-B	SpinNet Red Mist, Red Body, Blue Spinner	18.4	25
BR-BR-BL	0355160090BL-B	SpinNet Brown Mist, Brown Body, Blue Spinner	23.4	25
R-R-GY	03551200070L-B	SpinNet Red Mist, Red Body, Grey Spinner	18.4	25
BR-Y-GY	03552000090L-B	SpinNet Brown Mist, Yellow Body, Grey Spinner	23.4	25
R-R-GN	03551200070GL-B	SpinNet Red Mist, Red Body, Green Spinner	18.4	25
BR-BR-GN	03551600090GL-B	SpinNet Brown Mist, Brown Body, Green Spinner	23.4	25

### Single Bench With Vibronet Sprinklers



Bench Width	Spacing Between Sprinklers	Height Above Crop 2' - 3'	Height Above Crop 3' - 5'
4 ft.	3 ft.	9.2	25
5 ft.	3 ft.	11.7	25
6 ft.	3 ft.	18.4	25

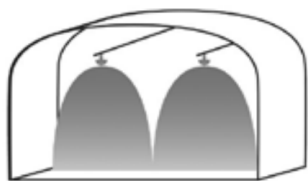
### One Line For Single Bay or Quonset with Spinnet Sprinklers



NOTE: For total house coverage, use multiple lines 7', 8' or 9' apart and start 3' from wall.

Bay Width	Spacing Between Sprinklers	Height Above Crop 2' - 3'	Height Above Crop 3' - 5'	Height Above Crop 6' - 7'
10 ft.	3 ft.	R-R-BL	-	-
12 ft.	3 ft.	R-R-BL	R-R-BL	-
14 ft.	3 ft.	BR-BR-BL	BR-BR-BL	R-R-BL
15 ft.	3 ft.	R-R-GY	BR-BR-BL	R-R-BL
16 ft.	3 ft.	R-R-GY	BR-Y-GY	R-R-BL
18 ft.	3 ft.	R-R-GN	BR-Y-GY	BR-Y-GY
20 ft.	3 ft.	-	R-R-GN	BR-BR-GN
22 ft.	3 ft.	-	R-R-GN	BR-BR-GN
24 ft.	3 ft.	-	-	BR-BR-GN

### Two Line For Single Bay or Quonset with Spinnet Sprinklers



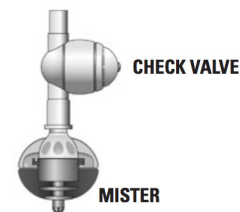
Bay Width	Spacing Between Sprinklers	Spacing Between Sprinkler Lines	Height Above Crop 3'	Height Above Crop 3' - 5'	Height Above Crop 6' - 7'
20 ft.	3 ft.	11 ft.	R-R-BL	-	-
22 ft.	3 ft.	12 ft.	R-R-BL	R-R-BL	-
24 ft.	3 ft.	12 ft.	R-R-BL	R-R-BL	R-R-BL
26 ft.	3 ft.	14 ft.	BR-BR-BL	R-R-BL	R-R-BL
28 ft.	3 ft.	15 ft.	BR-BR-BL	R-R-BL	R-R-BL
30 ft.	3 ft.	16 ft.	R-R-GY	R-R-GY	BR-BR-BL
32 ft.	3 ft.	17 ft.	R-R-GN	R-R-GY	BR-BR-BL
34 ft.	3 ft.	18 ft.	R-R-GN	R-R-GY	BR-BR-BL
36 ft.	3 ft.	19 ft.	R-R-GN	R-R-GY	R-R-GN
38 ft.		20 ft.	BR-BR-GN	R-R-GN	R-R-GN



### Misting Head Assemblies (Germinating)

Model Number	Description	Bag Qty
035404OL-B	VibroNet Mister, 9.2 GPH at 32 psi Blue nozzle w/Check Valve	25

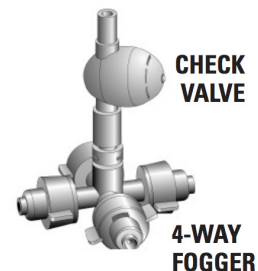
Note: Sold in Bag Quantities only



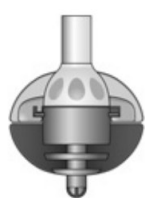
### Coolnet™ Pro Fogger Head Assemblies (Humidifying or Cooling)

Model Number	Description	Bag Qty
0303420LL-B (Standard)	CoolNet Pro Fogger, 4 Nozzles w/Check Valve Purple Pin, 8.1 GPH @ 60 psi (opening pressure 28 psi)	25
0303420HL-B (Special Order)	CoolNet Pro Fogger, 4 Nozzles w/Check Valve Orange Pin, 8.1 GPH @ 60 psi (opening pressure 58 psi)	25

Note: Sold in Bag Quantities only



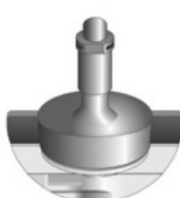
### Sprinkler, Mister and Fogger Components



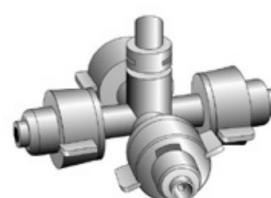
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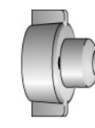
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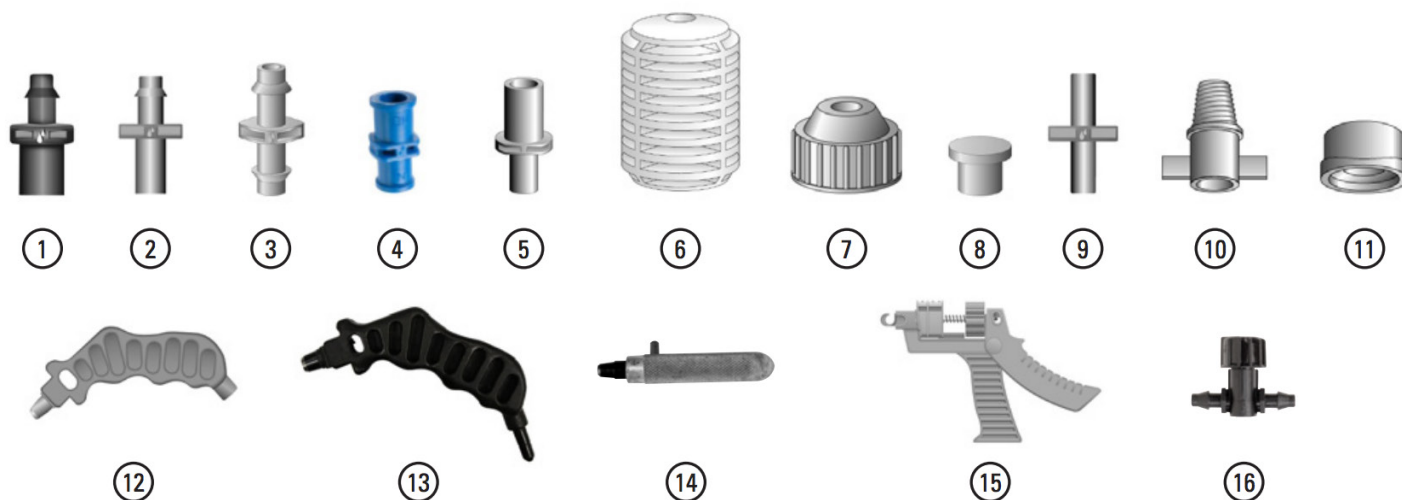


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Key	Model Number	Description	Bag Qty
1	0354040-B	VibroNet Sprinkler/Mister Blue - 9.2 GPH at 32 psi	25
-	0354050-B	VibroNet Sprinkler Green - 11.7 GPH at 32 psi	25
-	0340020-B	Check Valve, Blue Pin (opens 22 psi, closes 10 psi)	25
2	0340017-B	Check Valve, Purple Pin (opens 28 psi, closes 13 psi)	25
-	0340037-B	Check Valve, Orange Pin (opens 58 psi, closes 26 psi)	25
-	0355120070B-B	SpinNet Assy, Red Mist, Red Body, Blue Spinner	25
3	0355160090B-B	SpinNet Assy, Brown Mist, Brown Body, Blue Spinner	25
-	03551200070-B	SpinNet Assy, Red Mist, Red Body, Grey Spinner	25
-	03552000090-B	SpinNet Assy, Brown Mist, Yellow Body, Grey Spinner	25
-	03551200070G-B	SpinNet Assy, Red Mist, Red Body, Green Spinner	25
-	03551600090G-B	SpinNet Assy, Brown Mist, Brown Body, Green Spinner	25
4	0303420-B	CoolNet Pro Fogger 4 nozzles - 8.1 GPH at 60 psi	25
5	0306600-B	CoolNet Pro Fogger Blocker for 1 nozzle	25



## Assembly Components And Accessories



Key	Model Number	Description	Bag Qty
1	03220W-B	Barb x Female Connector - White	25
2	03221W-B	Barb x Male Connector - White	25
3	031748W-B	Barb x Barb Connector	25
4	03302C-B	Retrofit Adapter - Female (adapts Netafim to other mfg fittings)	25
5	03303-B	Retrofit Adapter - Male (adapts other mfg sprinklers to Netafim)	25
6	03330C-B	White Stabilizer Weight	25
7	03206-B	1/2" Adapter for Pipe Thread	25
8	03301-B	Plug (replaces sprinkler or mister head)	100
9	03208W-B	Male x Male Connector - White	100
10	03228-B	Threaded 3/8" Connector x Female PVC Adapter	25
11	58-AI-B	Grommet	25
12	682901033	3 mm Plastic Punch (for drippers and sprinklers)	1
13	PPUNCH8	8 mm Plastic Punch	1
14	6804080	8 mm Metal Punch	1
15	45000-002270	Hanging Sprinkler Assembly Tool for tube lengths over 48"	1
16	EDTUBEMVLV-B	Manual Valve for Micro-Tubing	10

### Two Line For Single Bay or Quonset with Spinnet Sprinklers

Model Number	Inside Diameter	Outside Diameter	Size	Coil Length
14052062	.520"	.620"	16 mm	1,000'
14052062-05	.520"	.620"	16 mm	500'
14052062-01	.520"	.620"	16 mm	100'
14060070	.600"	.700"	18 mm	1,000'
14060070-05	.600"	.700"	18 mm	500'
14082094	.820"	.940"	3/4"	500'
14082094-01	.820"	.940"	3/4"	100'
14106120	1.06"	1.20"	1"	500'
14106120-01	1.06"	1.20"	1"	100'





## Black Polyethylene (PE) Pre-Punch Tubing

Model Number	Inside Diameter	Outside Diameter	Pre-Punch Spacing	Size	Coil Length
84520620-18	.520"	.620"	18"	16 mm	1,000'
84520620-24	.520"	.620"	24"	16 mm	1,000'
84820940-36	.820"	.940"	36"	3/4"	500'
84106120-36	1.06"	1.20"	36"	1"	500'

## Bright White Polyethylene (PE) Tubing

Model Number	Inside Diameter	Outside Diameter	Size	Coil Length
14BW052062-05	.520"	.620"	16 mm	500'
14BW052062-01	.520"	.620"	16mm	500'
14BW082094-01	.820"	.940"	3/4"	100'
14BW106120-01	1.06"	1.20"	1"	100'



## Bright White Polyethylene (PE) Pre-Punch Tubing

Model Number	Inside Diameter	Outside Diameter	Pre-Punch Spacing	Size	Coil Length
84BW820940-36	.820"	.940"	36"	3/4"	500'
84BW106120-36	1.06"	1.20"	36"	1"	500'

## Oval Tube

Model Number	Size	Pressure Rating (psi)	Coil Length
OT1.00-42-660	1.00"	42	660'
OT1.25-42-400	1.25"	42	400'
OT1.50-42-350	1.50"	42	350'
OT2.00-42-250	2.00"	42	250'



## FlexNet™ Flexible Pipe

Model Number	Nominal Size	Outlet Spacing	Coil Length
05FX02PIPE50-30	2"	30"	328'
05FX02PIPE50-36	2"	36"	328'
05FX02PIPE50-40	2"	40"	328'
05FX02PIPE50-60	2"	60"	328'
05FX02PIPE50-72	2"	72"	328'
05FX02PIPE50-80	2"	80"	328'
05FX03PIPE50-30	3"	30"	328'
05FX03PIPE50-36	3"	36"	328'
05FX03PIPE50-40	3"	40"	328'
05FX03PIPE50-60	3"	60"	328'
05FX03PIPE50-72	3"	72"	328'
05FX03PIPE50-80	3"	80"	328'
05FX02	2"	BLANK	328'
05FX03	3"	TUBING	328'





## Driplines For Watering Containers

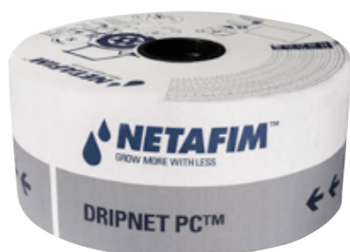


### Space-It™ Dripline

Thinwall Dripline (8 ml .636" diameter) with Dripper Visibly Marked on Tubing For Use Over Containers

Model Numbr	Flow	Spacing	Coil Length
06SL8636.2DM-12	0.2 GPH	12"	9,000'
06SL8636.4DM-14	0.4 GPH	14"	9,000'
06SL8636.4DM-16	0.4 GPH	16"	9,000'
06SL8636.4DM-18	0.4 GPH	18"	9,000'
06SL8636.4DM-20	0.4 GPH	20"	9,000'
06SL8636.4DM-24	0.4 GPH	24"	9,000'

## Driplines For Field Production



### DripNet PC Dripline

Thinwall Pressure Compensating Dripline (13 ml .636" diameter)

Model Numbr	Flow	Spacing	Coil Length
06DF63613.26-12	0.26 GPH	12"	4,300'
06DF63613.4-18	0.4 GPH	18"	4,300'
06DF63613.4-24	0.4 GPH	24"	4,300'



### UniRam Dripline

Heavywall Pressure Compensating Dripline (18 ml)

Model Numbr	Flow	Spacing	Coil Length
06DF63613.26-12	0.26 GPH	12"	4,300'
06DF63613.4-18	0.4 GPH	18"	4,300'
06DF63613.4-24	0.4 GPH	24"	4,300'



## Fittings And Connectors



### Twist-Lock Fittings

Fits Thinwall Dripline 0.636" I.D.

Key	Model Numbr	Description	Bag Qty
1	T630TLCOUP-B	Coupler	50
2	T63036600170-B	Line End	100
3	T6303620017C-B	3/4" Male Threaded Adapter	100
4	T63036450170-B	Connector with Grommet	100
5	T63042440170-B25	Start Connector with Valve	25

### Twist-Lock and Insert Barb Fittings

Fits Thinwall Dripline 16mm and 18mm



Key	Model Numbr	Description	Bag Qty
1	H520IC-B	16mm Insert Barb Coupling	50
2	H620TLCOUP-B	18mm Twist-Lock Coupling	50
3	H520IT3-B	16mm Insert Barb Tee	100
4	H520IE-B	16mm Insert Barb Elbow	100
5	H520IMA075-B	16mm Insert Barb 3/4" Male Adapter	50
6	H620FIG8-B	16mm Figure 8 Line End	100
-	H800FIG8-B	18mm Figure 8 Line End	100
7	58ISV520	16mm Inline Shut-off Valve	1
-	58ISV600	18mm Inline Shut-off Valve	1

## Fittings and Connectors

Fits 3/4" Dripline and Polyethylene Tubing

Key	Model Numbr	Description	Bag Qty
1	H820IC-B	3/4" Insert Coupling with Rings	100
4	H820IMA075-B	0.820" x 3/4" MPT Insert Adapter	50
5	58AP800	3/4" Figure 8 Line End	1
6	58ISV820	3/4" Inline Shut-off Valve	1

### FlexNet™ Start Connectors

Key	Model Numbr	Description	Bag Qty
1	T630TLCOUP-B	Coupler	50
-	T63036600170-B	Line End	100







## Fittings And Connectors

### Mesh/Micron

Mesh	Micron	Color
40	400	Blue
80	200	Yellow
120	130	Red
140	115	Black

### Filtration Recommendations

Water Source	Filtration Method
Well*	Screen or Disc Filters
Surface (pond, lake, canal)	Disc Filters
Recirculated	Disc Filters

\*A Hydrocyclone (sand separator) is recommended for well water with more than 3 PPM sand.

### Manual Disc Filters

Model Numb	Filter Size	Mesh	Flow Range (GPM)	Max Pressure
25A45-120	3/4"	120	1-12	140 psi
25A45-140	-	140	1-12	140 psi
25A47-120	1"	120	5-26	140 psi
25A47-140	-	140	5-26	140 psi
25A17-120	1 1/2" Super	120	10-52	140 psi
25A17-140	-	140	10-52	140 psi
25A30-120	2" Dual HP	120	40-120	174 psi
25A30-140	-	140	40-120	174 psi
25A2DL-120	2" Dual Lite	120	40-110	115 psi
25A17-140	-	140	40-110	115 psi
25A30-120	3" Twin Lite	120	80-220	115 psi
25A30-140	-	140	80-220	115 psi



3/4" 1" 1 1/2" SUPER



2" DUAL HP 2" DUAL LITE



3" TWIN LITE

### Manual Screen Filters

Model Numb	Filter Size	Mesh	Flow Range (GPM)	Max Pressure
SF075-155	3/4"	155	1-13	140 psi
SF100-155	1"	155	1-22	
SF150-155	1 1/2"	155	1-66	140 psi
SF200-155	2"	155	1-89	



3/4" SCREEN 2" COMPACT LP DISC-KLEEN

### Automatic Disc-Kleen Filters

Model Numb	Description	Flow Range (GPM)
26LP2A1-120DCLAX*	2" Compact LP Disc-Kleen - 120 mesh, DC	1-80
26LP2A1LF120DCLAX*	2" Compact LP Disc-Kleen Low Flow - 120 mesh, DC	1-40
26LP2PP2120AC	2" LP Disc-Kleen - 2 Filters, 120 mesh AC Solenoid	50-160
26LP2PP2120DC	2" LP Disc-Kleen - 2 Filters, 120 mesh DC Solenoid	50-160
26LP2PP3120AC	2" LP Disc-Kleen - 3 Filters, 120 mesh AC Solenoid	100-240
26LP2PP3120DC	2" LP Disc-Kleen - 3 Filters, 120 mesh DC Solenoid	100-240
26LP2PP4120AC	2" LP Disc-Kleen - 4 Filters, 120 mesh AC Solenoid	150-320
26LP2PP4120DC	2" LP Disc-Kleen - 4 Filters, 120 mesh DC Solenoid	150-320
26LP3PPB3120AC	3" LP Disc-Kleen - 3 Filters, 120 mesh AC Solenoid	150-450
26LP3PPB3120DC	3" LP Disc-Kleen - 3 Filters, 120 mesh DC Solenoid	150-450
26LP3PPB4120AC	3" LP Disc-Kleen - 4 Filters, 120 mesh AC Solenoid	250-600
26LP3PPB4120DC	3" LP Disc-Kleen - 4 Filters, 120 mesh DC Solenoid	250-600
26LP3PPB5120AC	3" LP Disc-Kleen - 5 Filters, 120 mesh AC Solenoid	350-750
26LP3PPB5120DC	3" LP Disc-Kleen - 5 Filters, 120 mesh DC Solenoid	350-750



2" LP DISC-KLEEN



3" LP DISC-KLEEN



## Filters

### Apollo Automatic Disc-Kleen Filters - Modular

Standard Model with Plastic Backflush Valve - Maximum Operating Pressure 90 psi

Model Numbr	Description	Flow Range (GPM)
26ASK3APPB4120AC	Apollo Disc-Kleen, Angle, 4 Filters, 120 mesh AC Solenoid	300-800
26ASK3APPB4120DC	Apollo Disc-Kleen, Angle, 4 Filters, 120 mesh DC Solenoid	300-800
26ASK4PB3120AC	Apollo Disc-Kleen, Twin, 3 Filters, 120 mesh AC Solenoid	500-1,200
26ASK4PB3120DC	Apollo Disc-Kleen, Twin, 3 Filters, 120 mesh DC Solenoid	500-1,200
26ASK4PB4120AC	Apollo Disc-Kleen, Twin, 4 Filters, 120 mesh AC Solenoid	700-1,600
26ASK4PB4120DC	Apollo Disc-Kleen, Twin, 4 Filters, 120 mesh DC Solenoid	700-1,600
26ASK4PB5120AC	Apollo Disc-Kleen, Twin, 5 Filters, 120 mesh AC Solenoid	850-2,000
26ASK4PB5120DC	Apollo Disc-Kleen, Twin, 5 Filters, 120 mesh DC Solenoid	850-2,000



Requires separate purchase of backflush controller. Standard with installed drain manifold.

Minimum pressure for backflush is 30 psi downstream. Maximum Pressure: 90 psi. For pressures of 91-140 psi, a High Pressure Model is recommended. Large battery sizes with flow ranges to 3,200 GPM and other mesh options available.

### Scan-Kleen Screen Filters

Model Numbr	Filter Size	Mesh	Max Flow
27ASCAN3-120	3" Angle	120	250
27ASCAN3-150	3" Angle	150	250
27ASCAN4-120	4" Angle	120	300
27ASCAN4-150	4" Angle	150	300
27ASCAN4T-120	4" Twin	120	500
27ASCAN4T-150	4" Twin	150	500
27ASCAN6T-120	6" Twin	120	600
27ASCAN6T-150	6" Twin	150	600



### Netafim Backflush Controllers

Model Numbr	Description	Voltage
31NBCAC2	2 Outputs with DP Sensor	24VAC
31NBCAC4	4 Outputs with DP Sensor	24VAC
31NBCAC6	6 Outputs with DP Sensor	24VAC
31NBCDCL2	2 Outputs with DP Sensor	12VDCL
31NBCDCL4	4 Outputs with DP Sensor	12VDCL
31NBCDCL6	6 Outputs with DP Sensor	12VDCL
31NBCACCARD	2 Output Expansion Card	24VAC
31NBCDCCARD	2 Output Expansion Card	12VDCL



All Controllers are standard with a mounting bracket

### Alex-Tronix Backflush Controllers

Model Numbr	Description
23AXF2ACDC-D	2 Station 24VAC/12VDC Controller
23AXF4ACDC-D	4 Station 24VAC/12VDC/12VDCL Controller
23AXF8ACDC-D	8 Station 24VAC/12VDC /12VDCL Controller





## Pressure Regulators

### 3/4" Low Flow Pressure Regulators

Model Numbr	Flow Range (GPM)	Nominal Output Pressure (psi)	Regulating Units
32PRV.75-LF15V2	.25 - 4.4	15	-
32PRV.75-LF20V2	.25 - 4.4	20	-
32PRV.75-LF35V2	.25 - 4.4	35	-



### 3/4" Pressure Regulators

Model Numbr	Flow Range (GPM)	Nominal Output Pressure (psi)	Regulating Units
32PRV.75-12V2K	4.5 - 17.6	12	1
32PRV.75-20V2K	4.5 - 17.6	20	1
32PRV.75-35V2K	4.5 - 17.6	35	1
32PRV.75-65V2K	4.5 - 17.6	65	1



### 1 1/2" Pressure Regulators

Model Numbr	Flow Range (GPM)	Nominal Output Pressure (psi)	Regulating Units
32PRV.75-12V2K	11 - 35	12	2
32PRV.75-20V2K	11 - 35	20	2
32PRV.75-35V2K	11 - 35	35	2
32PRV.75-65V2K	11 - 35	65	2



### 2" Pressure Regulators

Model Numbr	Flow Range (GPM)	Nominal Output Pressure (psi)	Regulating Units
32PRV2-412V2K	22 - 70	12	4
32PRV2-420V2K	22 - 70	20	4
32PRV2-435V2K	22 - 70	35	4



### Pressure Regulating Units

Model Numbr	Nominal Output Pressure (psi)
32PRVU-12V2K	12
32PRVU-20V2K	20
32PRVU-35V2K	35
32PRVU-65V2K	65



#### NOTES:

- 12 psi recommended for Thinwall Driplines.
- 20 psi recommended for Non-Compensating Drippers and Spray Stakes.
- 35 psi recommended for Sprinklers, Misters, Pressure Compensating Drippers and PC Spray Stakes.
- 65 psi recommended for Foggers.
- Additional pressure options available.
- Maximum operating pressure 145 psi.



## Air Vents and Water Meters



1" COMBINATION



2" COMBINATION



2" DYNAMIC



3/4" & 1" GUARDIAN



1" GUARDIAN WITH SHRADAR VALVE



2" GUARDIAN

### Air Vents

Model Numb	Size	Description	Connection	Max Pressure	Body
65ARIB1	1"	Combination Air/Vacuum Relief, Continuous Acting	MPT	240 psi	Nylon
65ARIB2PP	2"	Combination Air/Vacuum Relief, Continuous Acting	MPT	150 psi	Polypropylene
65ARIDY2	2"	Dynamic	MPT	150 psi	Nylon
65ARIA075	3/4"	Guardian Air/Vacuum Relief	MPT	150 psi	Nylon
65ARIA100	1"	Guardian Air/Vacuum Relief	MPT	150 psi	Nylon
65ARIA100S	1"	Guardian Air/Vacuum Relief with Shradar Valve	MPT	150 psi	Nylon
65ARIA2	2"	Guardian Air/Vacuum Relief	FPT	150 psi	Nylon

Price discounts available for case quantity purchases, please contact Netafim USA Customer Service for details.

MPT = Male Pipe Thread

FPT = Female Pipe Thread

### Fertilizer Meters

Model Numb	Size and Body	Max Flow (GPM)	Pulse (Gallons)	Connection
36FMPO.75	3/4" Plastic	2.2	0.1	MPT
36FMPO.751	3/4" Plastic	2.2	1.0	MPT
36FMPVE1	1" PVC	44	1.0	MPT



3/4" PLASTIC



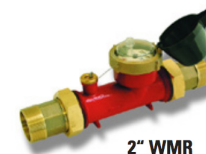
1" PVC

MPT = Male Pipe Thread

### Water Meters

Fits 3/4" Dripline and Polyethylene Tubing

Model Numb	Size	Flow Range (GPM)*	Pulse (Gallons)	Max Pressure (psi)	Connection
36M251T	1"	1.2 - 20	0.1	145	MPT
36M401.5T	1 1/2"	3.5 - 55	0.1	145	MPT
36WMR2T10	2"	8.8 - 110	10.0	230	MPT
36WST3F	3"	2.0 - 660	10.0	230	Flanged
36IRT3F	3"	45 - 500	10.0	230	Flanged
36IRT4F	4"	50 - 688	10.0	230	Flanged
36RD	Pulse Reed Switch	-	-	-	-



2" WMR



4" IRT

MPT = Male Pipe Thread

FPT = Female Pipe Thread



## Valves

### Series 80 Nylon Control 2-Way Valves

Model Numbr	Size	Voltage
61ET.75GH2	3/4" Globe	24VAC
61ET.75GH2-24DC	3/4" Globe	24VDC
61ET.75GH2-12DC	3/4" Globe	12VDC
61ET.75GH2-L	3/4" Globe	12VDCL
61ET.75GH2-120	3/4" Globe	120VAC
61ET1GH2	1" Globe	24VAC
61ET1GH2-24DC	1" Globe	24VDC
61ET1GH2-12DC	1" Globe	12VDC
61ET1GH2-L	1" Globe	12VDCL
61ET1GH2-120	1" Globe	120VAC
61ET1.5GH2	1 1/2" Globe	24VAC
61ET1.5GH2-24DC	1 1/2" Globe	24VDC
61ET1.5GH2-12DC	1 1/2" Globe	12VDC
61ET1.5GH2-L	1 1/2" Globe	12VDCL
61ET1.5GH2-120	1 1/2" Globe	120VAC
61ET1.5GH2-AN	1 1/2" Angle	24VAC
61ET1.5GH2-AN-24DC	1 1/2" Angle	24VDC
61ET1.5GH2-AN-12DC	1 1/2" Angle	12VDC
61ET1.5GH2-AN-L	1 1/2" Angle	12VDCL
61ET1.5GH2-AN-120	1 1/2" Angle	120VAC
61ET2GH2	2" Globe	24VAC
61ET2GH2-24DC	2" Globe	24VDC
61ET2GH2-12DC	2" Globe	12VDC
61ET2GH2-L	2" Globe	12VDCL
61ET2GH2-120	2" Globe	120VAC
61ET2GH2-AN	2" Angle	24VAC
61ET2GH2-AN-24DC	2" Angle	24VDC
61ET2GH2-AN-12DC	2" Angle	12VDC
61ET2GH2-AN-L	2" Angle	12VDCL
61ET2GH2-AN-120	2" Angle	120VAC

### Maximum Recommended Flow Rates (GPM)

3/4"	1"	1 1/2"	2"	3"	4"	6"
50	50	90	175	390	600	1,300



**3/4" OR 1" GLOBE**



**1 1/2" OR 2" GLOBE**



**1 1/2" OR 2" ANGLE**

### Aqua Pro Controller

Model Numbr
AP-CONTROLLER-P3

### Series 80 2-Way Valves With Controller

Includes Battery Operated Aqua Pro Single Valve Controller

Model Numbr	Size	Voltage
61ET.75GH2-L-CONT	3/4" Globe	12VDCL
61ET1GH2-L-CONT	1" Globe	12VDCL
61ET1.5GH2-L-CONT	1 1/2" Globe	12VDCL
61ET1.5GH2-AN-L-CONT	1 1/2" Angle	12VDCL
61ET2GH2-L-CONT	2" Globe	12VDCL
61ET2GH2-AN-L-CONT	2" Angle	12VDCL



**SERIES 80 WITH  
AQUA PRO CONTROLLER**



**AQUA PRO  
CONTROLLER**



## Valves

### Series 80 Nylon Control 3-Way Valves

Model Numbr	Size	Function
61ELTH1.5GH3	1 1/2" Globe	EL
61PRTH1.5GH3-*	1 1/2" Globe	PR
61PRELTH1.5GH3-*	1 1/2" Globe	PREL
61PSTH1.5GH3-*	1 1/2" Globe	PS
61PSELTH1.5GH3-*	1 1/2" Globe	PSEL
61ELTH1.5GH3AN	1 1/2" Angle	EL
61PRTH1.5GH3AN-*	1 1/2" Angle	PR
61PRELTH1.5GH3AN-*	1 1/2" Angle	PREL
61PSTH1.5GH3AN-*	1 1/2" Angle	PS
61PSELTH1.5GH3AN-*	1 1/2" Angle	PSEL
61ELTH2GH3	2" Globe	EL
61PRTH2GH3-*	2" Globe	PR
61PRELTH2GH3-*	2" Globe	PREL
61PSTH2GH3-*	2" Globe	PS
61PSELTH2GH3-*	2" Globe	PSEL
61ELTH2GH3AN	2" Angle	EL
61PRTH2GH3AN-*	2" Angle	PR
61PRELTH2GH3AN-*	2" Angle	PREL
61PSTH2GH3AN-*	2" Angle	PS
61PSELTH2GH3AN-*	2" Angle	PSEL



**PS ANGLE**



**PREL GLOBE**

Substitute \* with proper Spring Color:

Y = Yellow (7-30 psi)

G = Green (14-65 psi)

R = Red (30-90 psi)

Function Code identification:

EL = Electric (standard with 24VAC - other voltages available)

PR = Pressure Reducing

PREL = Pressure Reducing Electric

PS = Pressure Sustaining

PSEL = Pressure Sustaining Electric

### 3-Way Valves

Model Numbr	Function	Size	Body	Connection
V07020DGT055C01	Electric 24VAC	2"	Nylon	Threaded FPT
V07030PGT055C01	Electric 24VAC	3"	PVC	Threaded FPT
V07030PGS055C01	Electric 24VAC	3"	PVC	Slip
V07040PGS055C01	Electric 24VAC	4"	PVC	Slip
V07060PGS055C01	Electric 24VAC	6"	PVC	Slip
V32020DGT055C03	Pressure Reducing 24VAC	2"	Nylon	Threaded FPT
V32030PGS055C03	Pressure Reducing 24VAC	3"	PVC	Slip
61AQTVC1	Aquative 24VAC Solenoid	-	-	-



**NYLON ELECTRIC**



**NYLON PRESSURE REDUCING**

MPT = Male Pipe Thread



**Jain Irrigation Systems Ltd.**

Jain Irrigation was founded to manufacture products that conserve natural resources. They strive for sustainability and optimal utilization of all land & water while enhancing the health and lives of people. Please call ACW Supply if you have any questions about system design, integration or system parts.



### Drippers



Innovative design, precision molding, use of quality raw material and stringent quality tests are the key factors behind the sustainable and efficient performance of our online dripper for Drip Irrigation. Narrow cross shaped inlet acts as a filter and colored cap represents flow rate and facilitates easy identification. Manufactured from virgin plastic for stable performance. These devices are UV stabilized and are able to withstand environmental effect. Recommended for orchards, fruit crops, vegetables, nurseries & flowers.

### Sprayers



Spray Heads & Jets are used to maintain humidity or temperature control in greenhouse, shade house. Spray Heads & Jets are manufactured from good quality virgin raw material, easy to install, reliable performance are some of the common features of our fogger and misters.

### Drip Tape



Drip tape is a thin walled drip line used in drip irrigation. Drip tape is made of Special grade polyethylene material. It is also called as collapsible hose, once pressurized it becomes round and collapses on depressurizing. Being a flat tube it can be supplied on reels containing several thousand feet. The nominal diameter ranges from 12 to 25 mm. It can be used for surface and subsurface applications. Thin walled tapes are suitable for 2-3 seasons but can be used for longer period if used subsurface. Drip tape helps in reduction of initial investment of drip irrigation.



Moleaer™ (Latin for “tiny air”) is the first company to leverage the unique properties of nanobubbles at industrial-scale. Our mission is to leverage nanobubbles to unlock the full potential of oxygen for water treatment and crop production. We integrate nano-scale materials into proprietary technologies to deliver next-generation solutions for transferring gas into liquids.

## Moleaer Bloom

The patent-pending Moleaer Bloom is a highly efficient gas-injection technology that converts bulk oxygen into nanobubbles and supersaturates irrigation water with high levels of dissolved oxygen (DO). Negatively charged, neutrally buoyant nanobubbles can remain suspended in water for long periods of time, acting like an oxygen battery that delivers oxygen to the entire body of water. As oxygen is consumed, the nanobubbles continue to diffuse more oxygen into solution, sustaining supersaturated levels of DO, even in warm water. Moleaer’s Bloom is an economical and highly effective tool to improve water quality, increase plant growth, and suppress root disease and environmental stress.

The Bloom comes with a self-priming, enclosed impeller pump for maximum flow and energy efficiency. The system is whisper-quiet and corrosion-resistant. The Bloom can be upgraded with a smart controller and integrated DO sensor to allow real time monitoring and system control. Available in 25, 50 and 150 gpm flow rates, the Bloom was designed for durable operation, easy installation, and simple control.



### Features & Benefits

- 90% standard oxygen transfer efficiency
- Supersaturated irrigation water
- Improved water quality
- 100 nm-sized bubbles produced in excess of 1 billion nanobubbles / ml
- Oxygenation of any tank and any depth of water
- Increased nutrient adsorption
- Promotion of beneficial bacteria, suppression of pathogens
- Easy integration with fertigation and climate control systems.
- Optional: DO monitoring, system controller, and low-gas pressure warning





# CHEMICALS



## BRANDS CARRIED

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p. 15-16  
[agam-greenhouses.com](http://agam-greenhouses.com)



p. 17  
[certisusa.com](http://certisusa.com)



p. 18  
[bioworksinc.com](http://bioworksinc.com)



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[biosafesystems.com](http://biosafesystems.com)



p. 20  
[ohp.com](http://ohp.com)



p. 8  
[jdmfg.com](http://jdmfg.com)



# FUNGICIDES

## Actinovate

Code: **MMACTV18OZ**

Actinovate® SP is a high concentration of a patented beneficial bacterium on a 100% water soluble powder. This powerful new product effectively suppresses/controls a wide range of soil borne diseases including Pythium, Phytophthora, Fusarium, Rhizoctonia, Verticillium and other root decay fungi.

Size: 18 oz

## Badge X2

Code: **FUNBADGEX210LB**

Badge® X2 is an OMRI certified, patented, dry formulation of copper hydroxide and copper oxychloride. The copper hydroxide releases copper ions fast for immediate plant protection, while the copper oxychloride slowly releases copper ions for extended residual control PLUS excellent wash-off resistance for the best protection possible during and after rains.

Size: 10 lb

## Banrot

Code: **FUNBAN2P, FUNBAN40P**

Banrot is a broad spectrum fungicide for the control of soil borne diseases. It contains the active ingredients of Truban plus a systemic fungicide for the control of Pythium, Phytophthora, Rhizoctonia, Fusarium and Thielaviopsis. It may be used as a soil drench at the time of seeding or transplanting.

Size: 2 lb or 40 lb

## Biophos Pro

Code: **FUNASBPP1G, FUNASBPP1Q**

Broad spectrum biorational fungicide. Controls major diseases in crops and non-crop markets. Both foliar and root uptake to control diseases. 20.40% Dipotassium phosphonate, 22.67% Dipotassium phosphate.

EPA registered systemic fungicide. Easy to use liquid formulation

Size: 1 gal or 1 qt

## BotryStop

BotryStop is a biological fungicide for the control of Botrytis and Sclerotinia. Labeled for use on a wide variety of field or greenhouse grown vegetables, grapes and other small fruits. Also for use on ornamentals in the greenhouse or nursery.

## Camelot-O (OMRI Listed)

Code: **FUNCAMPRO1G**

Camelot O is a liquid copper formulation with technology to provide broad-spectrum bacterial and fungal disease control on a wide variety of ornamental plants, greenhouse vegetable/herb crops and turfgrass. Camelot O is a uniquely patented formula of fixed copper with fatty acids to form a true soap providing performance advantages over other copper-based products.

Disease controlled: Bacterial Pathogens - Bacterial Blight, Bacterial Leaf Spot, Erwinia, Fire Blight, Psuedomonas, Xanthomonas.

Size: 1 gal

## Clearys 3336

Code: **FUN33361Q**

Cleary 3336F Turf and Ornamental Systemic Fungicide prevents and controls turf diseases and the diseases of annual and perennial flowers, bedding plants, foliage plants, ground covers, and deciduous and evergreen trees and shrubs. This broad spectrum fungicide has preventative, curative, and systemic properties, making it a smart choice for commercial turf and ornamental applications. Drench, foliar drip, and spray applications can be made using 336F.

Size: 1 qt

## CEASE®

Code: **BWCBF**

Controls of a wide array of both fungal and bacterial pathogens, while providing outstanding plant, human and environmental safety. CEASE controls disease using multi-site modes of action for superior resistance management, and leaves virtually no residues on plants or flowers. CEASE can be used on ornamentals (container or field), trees, shrubs, potted and cut flowers, annual and perennial bedding plants, tropical foliage plants, seedlings, conifers, covered vegetables.

CEASE can be used in the field, greenhouse, nurseries - open or enclosed, shade house environments, interiorscapes, seedling production sites, forest seedling production sites, agricultural, residential and commercial landscapes, and reforestation.

Size: 1 gal

## Chlorothalonil 720 Select

Chlorothalonil 720 Select is effective on dollar spot, brown patch, leaf spot, melting out, brown blight, gray leaf spot, red thread, anthracnose, copper spot and rust stem. This is the solution for all your fungi needs because Chlorothalonil can treat and prevent fungi almost anywhere including golf courses, landscapes, turf sites, playgrounds, athletic fields and even sod farms.

## Companion

Code: **FUNCOM1G & FUNCOM2.5G**

Use Companion on container, bench, or bench-grown ornamentals in greenhouses or outdoor nurseries, and on ornamentals grown for indoor and outdoor landscaping. Use as a drench during seeding and when transplanting. Companion is a concentrate liquid that can go through irrigation systems without agitation or concern for clogging or abrasion. Companion can be injected directly into irrigation lines at an injector ration of 1:400,000. Companion can also be diluted with water and other fertilizers, pesticides and technical materials.

Size: 1 gal; 2 1/2 gal

## Double Nickel

Code: **FUNDN2.5G, FUNDN5LB**

Double Nickel is a broad spectrum preventive biofungicide for control or suppression of fungal and bacterial plant diseases. Double Nickel employs five modes of action, provides excellent control at low rates, has no resistance or residue issues and is OMRI listed for certified organic production.

Size: 2.5 gal or 5 lb



## Eagle 20EW

Code: **DAEAG20PT**

Eagle® 20EW specialty fungicide provides excellent control of dollar spot and brown patch and is labeled for use on major turf varieties, landscape ornamentals, and backyard fruit trees and vines.

Size: 1 Pint

## Fosphite

Code: **JHB06511G, JHB06512.5G**

For control of Phytophthora, Pythium, and Downy Mildew on food crops, turf, and ornamentals. Fosphite® is an effective systemic fungicide. It has been approved by the EPA as a 'Reduced Risk Pesticide'

Size: 1 gal, 2.5 gal

## GreenClean

Code: **FUNZRO50LB**

GreenClean is a multi-purpose granular algaecide formulated to kill algae, scum and molds on contact. It works through a powerful oxidation reaction and can be used on floor surfaces (concrete, gravel or dirt) as well as in irrigation ponds for algae control.

Size: 50 lb

## Mildew Cure

Code: **JHB02371G, JHB02372.5G**

For control of Powdery Mildew on many types of crops such as melons, squash, tomatoes, cucumbers, trees crops, grapes and flowers. Mildew Cure is an FIFRA 25b exempt fungicide (Rule 40 CFR 152.25).

Size: 1 gal, 2.5 gal

## Millstop (OMRI Listed)

Code: **BWMS5P**

Curative control of powdery mildews: A potassium bicarbonate-based, foliar fungicide that kills powdery mildew on contact by pulling water from spores and their growing strands. It inhibits enzymes involved in fungal cell wall formation by altering the pH on the leaf surface, providing 1-2 wks of residual protection.

Size: 5 lb

## Myclo 20 EW Select

Myclo 20EW Select is a systemic fungicide that can be applied to a wide variety of turf and ornamentals. While some fungicides merely prevent disease, Myclo 20EW Select delivers both curative and preventive properties. Myclo 20EW Select can also be used on home orchards, vineyards and fruit trees to control diseases such as Brown Rot, Powdery Mildew, Rusts and Scab.

## OxiDate - Broad Spectrum (OMRI Listed)

Code: **FUNOXI2.5G**

OxiDate utilizes peroxygen chemistry formulation that is specifically labeled for agricultural field crops as well as Greenhouse productions and post harvest storages. The American farmer has a new tool in the fight against disease caused by micro-organisms that will not harm the environment or pose risks to human health and safety.

Size: 2.5 gal

## P-Vent

Code: **FUNPVENT1KG, FUNPVENT.5LB, FUNPVENT1LB**

PVent Biofungicide is an enhancement in microbial fungicide technology, providing growers with an easy-to-use, versatile IPM tool. This innovative development was spearheaded through a strategic partnership between two family-owned businesses: BioSafe Systems and Lallemand Plant Care.

Size: 0.5 lb, 1 lb, 1 kg

## Perpose Plus

Code: **FUNPP5G, FUNPP15G**

PERpose Plus™ is a treatment for the prevention and suppression/control of horticultural and agricultural diseases in commercial greenhouses, garden centers, landscapes, agricultural crops, nurseries, interiorscapes and professional turf care.

Size: 5 gal, 15 gal

## Phyton 27

Code: **FUNPHY2OZ, FUNPHY8OZ, FUNPHY34OZ, FUNPHY1G**

PHYTON 27 Fungicide and germicide is a copper based product broad spectrum, contact product, designed to control mildews, leaf spots Xanthomonas and Psuedomonas, Phyton is a valuable weapon in your chemical arsenal.

Size: 2 oz, 8 oz, 34 oz, 1 gal

## Procidic

Code: **FUNGPCIG**

Procidic is an agricultural bactericide and fungicide compound formulated to protect crops during all stages of growth. Procidic's ingredients allow crops to grow the healthy, natural way. It is rapidly absorbed into the plant and then moves toward its apex.

Size: 2.5 gal

## Propiconazole SPC 14.3% Select

Nufarm Propiconazole SPC 14.3 MEC Fungicide provides excellent preventive, systemic activity against many of the worst diseases in turf, including anthracnose, brown patch, dollar spot, and Fusarium. In ornamentals and trees, Nufarm Propiconazole SPC 14.3 MEC controls powdery mildews, rusts, leafspots, scabs, and blights.

Size 1 gal

## Regalia CG

Code: **FUNREGCG1Q, FUNREGCG1G**

REGALIA® advanced biofungicides activate a plant's natural defenses to protect against a variety of fungal and bacterial diseases, resulting in higher quality AND yields. REGALIA® products are active against both soilborne and foliar pathogens, delay the development of resistance, and help minimize chemical residues.

Size: 50 lb

## Safer Garden Fungicide

Code: **55704141**

Safer® Brand Garden Fungicide controls and prevents the spread of fungal diseases, including powdery mildew, black spot, leaf spot and rust, in plants. Simply mix this economical concentrate with water as directed to make up to 4 gallons of solution. Garden Fungicide works to create an environment that is not optimal for the fungus to grow and spread, therefore stopping the disease from further attacking the plant.

Size 16 oz

## Sanidate 5.0 (OMRI Listed)

Code: **FUNSAN2.5G**

Keep your post harvest equipment and fruits and vegetables free of disease with SaniDate 5.0's time-tested activated peroxide chemistry. SaniDate 5.0 is broadly labeled for hard surface sanitization and disinfection, as well as fruit and vegetable wash treatments to eliminate human health and plant spoilage pathogens on contact.

Size 2.5 gal



## Sanidate 12.0 (OMRI Listed)

Code: **FUNSAN122.5G**

SaniDate 12.0 MicroBiocide controls and prevents the growth of microorganisms including algae, bacteria, and fungi. Designed specifically for water treatment through irrigation, SaniDate 12.0 is optimal for growers who utilize re-circulating water systems, such as ebb and flow or trough systems, that generate high volumes of recycled water. These large volumes of recycled water can increase chemical costs, but with SaniDate 12.0's higher dilution rates, costs remain controlled. OMRI Certified

**Size 2.5 gal**

## Soilgard 12g (OMRI Listed)

Code: **INSSG12G**

*G. virens*, the active ingredient in SoilGard 12G is a naturally occurring soil fungus, which is antagonistic to plant pathogenic fungi such as *Pythium* and *Rhizoctonia*, thereby aiding in control of these damping off and root rot pathogens. SoilGard 12G acts as a preventative and will protect non-infected plants.

**Size 5 Lb.**

## Strike 50WDG

Code: **FUNSTR.5P**

The systemic action of Strike gives you the ability to control, as well as prevent, many important fungal diseases on ornamental plants in greenhouses and nurseries. Strike® Plus 50 WDG is a combination of 2 systemic fungicides that control or prevent many fungal diseases on ornamental plants in the greenhouse, garden center and nurseries. Diseases controlled include Anthracnose, black spot, leaf spot, powdery mildew, rust, scab and other diseases.

**Size 1/2 lb**

## Subdue-Max

Code: **FUNSUB1Q**

Subdue is a systemic fungicide for use in container bench and bed grown ornamentals in greenhouse or outdoor nurseries for control of damping off and root and stem diseases caused by *Pythium* and *Phytophthora*. May be used as soil drench on soil mix on ornamentals at time of seeding or transplanting. Enables easy mixing and less equipment wear due to its microemulsion concentrate formulation, minimizes development of insensitive strains of fungi, and helps reduce disruption on the course and to home owners with odorless technology.

**Size: 1 qt**

## T-Methyl E-Pro (Generic for Cleary's 3336)

Code: **NFTMEPRO4X8OZ (2#), NFTMYTHL2.5G (2.5 gal)**

Turf and ornamental fungicide in water soluble bags. For prevention and control of Dollar Spot, Copper Spot, Brown Patch, Red Thread, Anthracnose, Fusarium Blight, Leaf Spot, and Stripe Smut on line turf applications. For disease control on Roses, Flowers, Ornamentals and Shade Trees. Recommended by state universities as an ideal substitute for Benomyl.

**Size: Flowable: 2.5 gal; Wettable Powder: 2 lb.**

## TM + IP SPC

Code: **NFTMCTN665LB**

With its contact and systemic activity, you will see fast results, while long residual control can mean fewer applications per season. This broad-spectrum premix controls nearly every major fungal disease in ornamental, non-residential turf and golf course settings, including botrytis, brown patch, dollar spot, black spot, and fusarium, plus many more.

**Size: 1 gal**

## Triathalon BA (OMRI Listed)

Code: **FUNTRIBA1G**

Triathlon BA is an OMRI listed broad-spectrum preventative biofungicide and bactericide for use on a wide variety of ornamentals, fruits, vegetables and herbs grown in greenhouses, nursery and shade houses. Triathlon BA also colonizes plant root hairs, preventing establishment of disease-causing fungi and bacteria.

**Size: 3 oz**

## Trinity TR (BASF)

Code: **BASFTTR3OZ**

Trinity TR total release fungicide provides broad spectrum control of several key diseases such as: *Alternaria* spp., *Botrytis* spp., *Cylindrocladium* spp., *Fusarium* spp., *Myrothecium* spp., and *Rhizoctonia* spp. Trinity TR total release fungicide is a foliar applied product and will not control soil-borne pathogens that infect below the soil surface.

**Size: 3 oz**

## Truban 25% EC

Code: **FUNTRU1Q**

A liquid formulation which has the same qualities as the wettable powder but eliminates all problems of setting out and does not require agitation. For use through watering systems and proportioners.

**Size: 1 qt**

## Truban 30% WP

Code: **FUNTRU2P**

Truban is a soil fungicide for control of damping-off root and stem rot diseases caused by *Pythium* and *Phytophthora* on bedding and container grown crops.

**Size: 2 lb**

## X-3

Code: **FUNX396OZ**

X-3® is the most cost-effective AND efficient disinfectant/sanitation/disease control product you can buy. The triple-powered broad spectrum formula of X-3 kills bacteria, fungus and algae – and costs less per application than competitive products. X-3 is highly concentrated for superior results at higher dilution ratios. Bottom line, X-3 boosts your profit margins by reducing plant loss while costing less in use.

**Size: 96 oz**

## ZeroTol

Code: **FUNZRO2.5G, FUNZRO30G**

ZeroTol is a revolutionary horticultural technology that offers a new tool in the deterrence of horticultural diseases caused by microorganisms and their spores. When used as an ongoing preventative program, ZeroTol can help clean your facility and plants of problems associated with phytopathogenic organisms. ZeroTol is a non-toxic fungicide/bactericide/viricide that functions differently than other products. Instead of coating plant tissues with chemical toxins, ZeroTol oxidizes fungi (including spores), bacteria and viruses on contact thereby preventing infection. Leaves no residue.

**Size: 2.5 gal, 30 gal**

## Zyban

Code: **FUNZYB6OZ**

A broad spectrum systemic-contact fungicide. Controls Anthracnose, flower and petal Blight and Botrytis Blight.

**Size: 6 oz**



# HERBICIDES

## AXXE

Code: **HERAXXE2.5G**

AXXE Broad Spectrum Herbicide is a non-selective, weed control for grasses and broadleaf weeds. It is formulated to deliver maximum performance and provide fast-acting results on a long list of weeds and grasses, as well as most mosses and lichens. This product is an herbicidal soap product comprised of a form of ammoniated pelargonic salts.

**Size: 2.5 gal**

## Broadstar

Code: **HERVALBS50P**

If your herbicide keeps causing callbacks, you should switch and treat your trees and shrubs with the longest residual on the market in BroadStar Herbicide. BroadStar is an odorless and dust-free granular preemergence herbicide that eliminates a broad spectrum of annual broadleaf and grassy weeds such as spurge, bittercress, oxalis, common groundsel and crabgrass.

**Size: 50 lb**

## Garlon 4 Ultra

Code: **HERG4U2.5G**

Vegetation managers and foresters rely on Garlon® 4 Ultra specialty herbicide to control unwanted weeds, brush and trees beneath electrical power lines; along railroad beds, roadsides and pipelines; and in commercial forestry and wildlife openings, including grazed areas on these sites.

**Size: 2.5 gal**

## Gemini Herbicide

Code: **E95224**

Gemini 3.7 SC Pre-emergent Herbicide 2.5 Gal featuring a selective combination of two active ingredients as proflaminate plus isoxaben such as Barricade and Gallery creates a uniform and prolonged herbicide barrier on over 500 crops. It can be applied over the top of many crops, including shrubs and perennials with low potential phytotoxicity & good crop tolerance – now labeled safe on over 500 crops!

**Size: 2.5 gal**

## Jewel

Code: **HERJEWEL50P**

Jewel™ Pre-Emergent Herbicide provides great flexibility in your chemical rotation and is a welcome relief to your budget. Jewel is labeled for many crop species and woody ornamentals, as well as many perennials. For lasting control with a low application rate (100 lbs/acre), experience the value of Jewel. Jewel Herbicide is a granular herbicide with a combination of two active ingredients designed to control a broad spectrum of weeds.

**Size: 50 lb**

## OH2

Code: **HERORNII50P**

Get broad spectrum pre-emergent weed control for your container and field grown ornamentals. OH2® herbicide controls a long list of grassy and broadleaf weeds, including the toughest species like spurge. Only from Scotts.

**Size: 50 lb**

## ProDeuce

Code: **NFPRODEUCE64OZ**

ProDeuce is a dual action herbicide that combines the pre-emergent, residual activity of proflaminate, with the non-selective, contact control of glyphosate. ProDeuce is intended for landscape and grounds managers, as well as lawn care operators to help alleviate multiple chemical and mechanical weeding applications throughout the growing season. Customers using ProDeuce save time and labor, while benefiting from reduced damage to plant material and fewer hard scrapes caused by mechanical trimmers.

**Size: 64 oz**

## Razor Burn (Glyphosate and Diquat)

Code: **NFHRB1G**

Razor Burn is a post-emergent, systemic herbicide that is generally non-selective and gives broad spectrum control of many annual weeds, perennial weeds, woody brush and trees. Razor Burn is a great product for situations where mechanical efforts are not suitable or other herbicides don't provide the speedy visual results. Controls weeds quickly and easily in ornamentals, bed maint, crack treatments, brush clearing and perimeter treatments.

**Size: 1 gal**

## Razor Pro (Glyphosate)

Code: **HERTPRO1G, HERTPRO2.5G, HERTPRO30G**

Controls Bermuda grass, Bindweed, Canada Thistle, Johnson grass, Hemp Dogbane and many annual weeds. Roundup is a foliar applied, non selective broad spectrum herbicide. Also controls brush such as Willow, Multiflora rose, Honeysuckle and Kudzu. Non volatile and shows no residual soil activity. Application is with conventional equipment as well as different wipers and spot sprayers.

**Size: 1 gal, 2.5 gal, 30 gal**

## Supress (OMRI Listed)

Code: **HERSUP2.5G**

Suppress® Herbicide EC is a non-selective, post-emergent, foliar herbicide for use in and around all food and non-food crop areas. It can also be used in non-agricultural and industrial use sites. Suppress® Herbicide EC works best on newly emerged weeds. Use at a 3% concentration for young annual weeds.

**Size: 2.5 gal**

## Surflan / Prozalin / Orzalin

Code: **HERSUR2.5G**

Preemergent surface application selective herbicide for use with field ornamentals to control broad leaf weeds and annual grasses. Does not control established weeds.

**Size: 2.5 gal**

## Weed Zap

Code: **JHB02391G, JHB02392.5G**

Weed Zap is an all natural non-selective herbicide. Weed Zap "zaps" small broad leaf and grassy weeds. It's natural ingredients will eliminate plants that are six inches in height or less. Weed Zap is a broad spectrum herbicide suitable for organic production.

**Size: 1 gal, 2.5 gal**



## INSECTICIDES

### Acephate E 75 (Orthene)

Code: **NFACP751P**

For more than 25 years, industry professionals have depended on acephate, the active ingredient in Acephate E 75 Insecticide, for excellent, broad-spectrum control of more than 40 insect pests. Packaged in a convenient shaker can, Acephate E 75 Insecticide works both systemically and on contact to offer outstanding performance and reliability.

**Size: 1 lb**

### Ancora

Ancora Microbial Insecticide is a naturally-occurring fungus that infects both foliage and soil dwelling insects such as whiteflies, aphids, thrips, weevils, psyllids, leafminers, spider mites, mealybugs, and other pests. Ancora is registered by the EPA and is labeled for use in the greenhouse, nursery, landscape and turf markets.

**Size: 1 lb**

### Attain TR

Code: **WRL09-1820**

Attain® TR Micro Total Release Insecticide is a ready-to-use, ultra-low-volume insecticide fogger that controls a variety of greenhouse insect pests, including aphids, fungus gnats, mealybugs, mites, thrips and whiteflies, along with several other secondary insect pests.

**Size: 2 oz**

### Avid

Code: **INSAVID1Q**

A standard insecticide/miticide for mite and leafminer control that is the top choice by growers. One of the most widely used miticides/insecticides for control of both mites and leafminers. Avid®, an industry-leading miticide/insecticide, controls mites and leafminers and provides suppression of aphids, thrips and whiteflies.

**Size: 1 qt**

### Azaguard (OMRI Listed)

Code: **INSAZA1G, INSAZA1Q**

AzaGuard is a 3% Azadirachtin formulated Insect Growth Regulator (IGR) that offers broad spectrum insecticidal control on over 300 insect species. AzaGuard prevents molting between larval, pupal and nymphal stages and also repels insects in treated areas, reducing insect infestations in/around the facility.

**Size: 1 gal, 1 qt**

### Azamax

Code: **55724464, 55724470, 55724475, 55724477**

A standard insecticide/miticide for mite and leafminer control that is the top choice by growers. One of the most widely used miticides/insecticides for control of both mites and leafminers. Avid®, an industry-leading miticide/insecticide, controls mites and leafminers and provides suppression of aphids, thrips and whiteflies.

**Size: 4 oz, 16 oz, 1 qt, 1 gal**

### Azasol

Code: **55704981**

AzaSol is a pale yellow/white, amorphous powder containing 6% by weight azadirachtin. It will instantly dissolve in water to give a solution that is ready for spray applications for pest control. Non-Oil based and highly effective as a powder.

**Size: Single Pack (0.75 oz)**

### Azeca

Code: **INSAVID1Q**

A standard insecticide/miticide for mite and leafminer control that is the top choice by growers. One of the most widely used miticides/insecticides for control of both mites and leafminers. Avid®, an industry-leading miticide/insecticide, controls mites and leafminers and provides suppression of aphids, thrips and whiteflies.

**Size: 1 gal**

### Beethoven TR

Code: **WRL04-947**

Beethoven TR Total Release Miticide/Insecticide, with the active ingredient etoxazole, is a new total release aerosol from BASF. It provides control of mites, including the two-spotted spider mite, and suppresses whiteflies. In addition, Beethoven TR Total Release Miticide/Insecticide offers quick and easy application, thorough coverage, excellent plant safety and flexible re-entry times.

**Size: 2 oz**

### BioCeres

Code: **BSBC1LB**

BioCeres WP is an insect-pathogenic bio-insecticide using the *Beauveria bassiana* fungus. The OMRI listed ANT-03 strain is approved for organic production and is perfectly suited in IPM programs, in a tank mix with other pesticides as well as specific, stand-alone use. BioCeres WP is used for the biological control of numerous pests including whiteflies, aphids and thrips by adhering to and penetrating the insect's exoskeleton, causing death. It can be used in a wide range of crops as well as ornamental plants and edibles.

**Size: 1 lb**

### Botaniguard ES and Botaniguard WP

Code: **INSBOT1G, INSBOT1Q, INSBOTWP22**

Biological insecticide used to control whitefly, thrips, aphids, and many other soft-bodied insects in greenhouse and field crops. Based on the highly successful fungus, *Beauveria bassiana*, strain GHA, it controls the most troublesome crop pests – even resistant strains. Because of BotaniGard's superior formulation, higher spore concentration, high viability and proven performance, it outperforms other *Beauveria*-containing products. When properly applied, BotaniGard's insect control can equal or exceed that of chemical insecticides.

**Size: 1 gal, 1 qt, 1 lb WP**



## Botanigard Maxx

Code: **INSBOTM1Q, INSBOTM1G, INSBOTM2.5G**

Beethoven TR Total Release Miticide/Insecticide, with the active ingredient etoxazole, is a new total release aerosol from BASF. It provides control of mites, including the two-spotted spider mite, and suppresses whiteflies. In addition, Beethoven TR Total Release Miticide/Insecticide offers quick and easy application, thorough coverage, excellent plant safety and flexible re-entry times.

**Size: 1 qt, 1 gal, 2.5 gal**

## Brandt Ecotec Plus (OMRI Listed)

Code: **INSBRP2.5G**

Brandt Ecotec Plus offers sustainable organic insect and mite control in a powerful, oil-based formula. It works quickly and effectively to coat and suffocate pests on contact and continues to act as a repellent after the contacted insects have died. This dual mode of action provides control for all stages of insect development. For full effectiveness, spray Brandt Ecotec Plus when pests first appear and apply repeatedly.

**Size: 2.5 gal**

## Captiva

Code: **INSCAP1Q**

Captiva® is a bio-insecticide formulated using concentrated plant extracts which are active against Thrips and Spider Mites. Captiva agitates and excites thrips and mites, forcing them out of their sheltered hiding spots. As a stand-alone product, Captiva has repellency, anti-feeding, and anti-oviposition properties.

**Size: 1 qt**

## Carbaryl / Sevin

Code: **INSCAR2.5G or INSSEVSL2.5G**

Carbaryl (Sevin) Insecticide is a suspension of microfine Carbaryl Insecticide in an aqueous medium. It readily disperses in water to form a spray which may be applied by air or ground. Labelled for a wide range of insects. Normal rate for trees and ornamentals is 1-2 quarts per 100 gallons. (1/2-1 fluid ounces per gallon).

**Size: 2.5 gal**

## Conserve

Code: **FUNCON1Q**

Conserve is a new pesticide designed to control western flower thrips and spider mites in greenhouses. Conserve is safe to use 4 hr. REI. It is recommended Conserve be used no more than 10 times in a 12 month period. Not for use on vegetables.

**Size: 1 qt**

## Crymax

Code: **INSCM5P**

Captiva agitates and excites thrips and mites, forcing them out of their sheltered hiding spots. As a stand-alone product, Captiva has repellency, anti-feeding, and anti-oviposition properties. Crymax is a genetically engineered strain of Bt containing toxins from both Bt kurstaki and Bt aizawai strains.

**Size: 5 lb**

## DES-X

Code: **INSDEX2.5G**

DES-X insecticidal soap concentrate is a bioinsecticide that controls insect and mite pests on contact. It contains specially selected fatty acid salts (soaps) that penetrate the body of pests and results in rapid death. DES-X kills pests by disrupting membrane and cellular function

**Size: 2.5 gal**

## Dipel (OMRI Listed)

Code: **INSDIP5P, INSVLDP1P**

DiPel, available in an emulsifiable suspension (ES) as well as a dry flowable (DF) formulation, is registered on more than 200 different crops, including vegetable and fruit crops, row crops and even specialty crops and berries. Its highly selective active ingredient makes the product fatal to more than 55 species of worm (lepidopteran) pests without harming humans, beneficial insects, birds, fish or wildlife. Plus, DiPel has a four-hour Restricted Entry Interval (REI), the lowest allowed by law.

**Size: 1 lb, 5 lb**

## Endeavor

Code: **INSEND15OZ**

Endeavor insecticide belongs to a new class of chemistry that safely eliminates sap-sucking aphids and whiteflies with its unique mode of action. As the aphid begins to “tap” into a plant treated with Endeavor, its sucking mechanism is immediately and irreversibly paralyzed—the aphid pulls out its stylets. With no harm to beneficial insects or mites, and no further harm to the plants, the aphid dies within 2 to 4 days.

**Size: 15 oz.**

## Enstar II (Insect Growth Regulator)

Code: **INSENS5OZ**

Product does not provide a kill but interferes with the insects development inducing no regeneration. Controls Whiteflies, Aphids, soft bodied and armored Scales, Mealybugs and Fungus Gnats.

**Phytotoxicity:** Some injury to Poinsettias, Roses in full bloom and Ferns. Not recommended for use during bloom on greenhouse ornamentals.

**Size: 5 oz.**

## Entrust

Code: **INSENTSC1Q**

Entrust® SC Naturalyte® insect control, listed by the Organic Materials Review Institute (OMRI) for use in organic production, provides the performance organic growers have come to trust, but in a liquid formulation. Produced through the fermentation of a naturally occurring soil bacterium, spinosad.

**Size: 1 qt**

## EverGreen® Crop Protection 60-6

Code: **HAEG1QT**

EverGreen® Crop Protection uses pyrethrins synergized with piperonyl butoxide (PBO), which allow more insecticide to reach the target site in the insect's nervous system.

Fast, effective knockdown and kill - EverGreen is a contact insecticide that delivers fast kill and quick results when applied alone or tank mixed.

**Size: 1 qt**

## EverGreen® 5% Organic

Conserve is a new pesticide designed to control western flower thrips and spider mites in greenhouses. Conserve is safe to use 4 hr. REI. It is recommended Conserve be used no more than 10 times in a 12 month period. Not for use on vegetables.

## Forbid 4F

Code: **INSFORBID**

Forbid 4 F offers outstanding knockdown and residual control of mites and all stages of whiteflies for four to eight weeks. Thanks to its novel mode of action, foliar-applied Forbid 4 F offers growers an effective tool for management of mites resistant to conventional products.

**Size: 1 qt**



## GC Mite

Code: **JHB02181G, JHB02182.5G**

For control of various mites and insects on many types of crops such as melons, squash, tomatoes, tree crops, grapes, cucumbers and all sorts of flowers. GC-Mite™ is a FIFRA 25b exempt pesticide (Rule 40 CFR 152.25). GC-Mite™ has shown the ability in independent, replicated field and greenhouse trials to control mite populations for 3-4 weeks with a 1% spray solution.

**Size: 1 gal, 2.5 gal**

## Gnatrol (OMRI Listed)

Code: **INSVALGNA16P**

Gnatrol is a highly selective, biological larvicide for use in greenhouses to control fungus gnat larvae. It may be used on a wide variety of ornamentals, as well as all bulb crops, bedding plants and vegetable sets. Once the larvae have ingested Gnatrol, they become paralyzed, stop feeding immediately and die—usually within 24 hours.

**Size: 16 lb**

## Grandevo

Code: **INSGRANCG1LB, INSGRWDG10LB, INSGRDWDG6LB**

Grandevo® is a microbial-based insecticide. Grandevo contains several active compounds that repel, stop feeding, reduce reproduction and induce mortality to prevent the development of damaging populations of sucking and chewing insects, flies and mites. Grandevo can be used on a wide range of crops, including fruits, vegetables, nuts and turf and ornamentals.

**Size: 1 lb, 10 lb, 6 lb**

## IC3 OIL

Code: **INSIC31G, INSIC31Q**

Featuring active ingredients derived from essential oils, Essentria® IC-3 is an environmentally friendly pest control solution. The natural liquid insecticide provides immediate knockdown and long residual control of insects. Zoëcon's Essentria® IC-3 Insecticide offers sensitive pest control, with a target-specific mode of action.

**Size: 1 gal, 1 qt**

## ImiGold

Code: **INSIG27.5OZ**

ImiGold 2F is a liquid insecticide containing the active ingredient imidacloprid. It is effective on many insect pests, including grub control in turf. It is also labeled for use on ornamentals, as a termiticide and for use in poultry facilities. The product sizes are pre-measured for to make a 100 gallon spray solution (27.5 fl. oz.) or a 1,000 gallon spray solution (2.15 gallons).

**Size: 27.5 oz**

## Javelin WG

Code: **INSJAU5P**

One of the most recognized brand names ever sold. Javelin WG contains a naturally occurring Bt kurstaki strain that offers broad spectrum control of mixed worm populations in tree and vegetable crops.

**Size: 5 lb**

## Kontos

Code: **OHPKONTOS150ML**

Kontos is a systemic insecticide from the tetramic acid class of chemistry (MOA Group 23). Kontos can be applied as a foliar spray or drench and controls a number of major sucking insect and mite pests, including adelgids, aphids, leafhoppers, mealybugs, psyllids, spider mites, spittlebugs and whiteflies. Kontos is both xylem and phloem active.

**Size: 250 ml**

## Kopa

Code: **INSK2.5G**

Kopa™ insecticidal soap is a potassium salt of fatty acid soap that controls insects, mites and powdery mildew. Kopa can be used for organic production.

**Size: 2.5 gal**

## M-Pede Insecticidal Soap

Code: **SAC1202**

An effective contact insecticide made from naturally occurring biodegradable fatty acids. Ideal for use in parks, restaurants, hospitals, schools and malls. M-Pede Insecticidal Soap is an all purpose insecticide.

**Size: 2.5 gal**

## Mallet 2F (Generic for Marathon 2F)

Code: **NFMANTRAEPRO1Q**

Fast knockdown and long lasting control of sucking and piercing insects on ornamentals. Imidacloprid.

**Size: 1 qt (also available in 1 gallon upon request)**

## Mallet 75WSP (Generic for Merit 75WP)

Code: **NFMALLET75WSP**

For use ornamentals for commercial or residential landscapes and interior plantscapes. Merit 75WP is a systemic product and is translocated upward in the plant. Merit WP is very effective on Aphids, Mealybugs, Thrip and Whitefly.

**Size: 1.6 oz.**

## Mantra 1G (Generic for Marathon 1%)

Code: **NFMANTRA5P, NFMANTRA500P**

- Highly systemic • Long lasting residual activity
- Highly effective against Whitefly, Aphids, Mealybugs and other pests.
- Approved for use in greenhouse/nursery production locations.

**Size: 5 lb., 50 lb.**

## Minx 2 (Biological Bacterial Waste)

Code: **INSMINX1Q**

Minx™ 2 Insecticide delivers quick and easy broad-spectrum mite and leafminer control in a new low volatile organic compound (VOC), water-based formula. It also works to suppress aphids, whiteflies and thrips. Compared to many other abamectin products, Minx 2 offers added application flexibility and comfort.

**Size: 1 qt**

## Mycotrol ESO (OMRI Listed)

Code: **INSMYCONPO1LB**

If you have a certified organic grow operation and must follow the strict guidelines for pest management, Mycotrol is the organic formulation mycofungicide of Botanigard. The product contains the spores of a fungus, *Beauveria bassiana* strain GHA 11.3%. The mode of action is not like any other traditional insecticide. The applied spores infect the outside of the insect's cuticle, adheres to the host insect and eventually penetrates the skin, and grows inside the insect, killing it.

**Size: 1 lb**

## Orthene TR

Code: **WRL09-1321**

1300 Orthene® TR Micro Total Release Insecticide is one of today's most effective and widely used ornamentals insecticides. A ready-to-use, ultra-low-volume insecticide fogger, Orthene controls a wide variety of greenhouse insect pests. The active ingredient, is an organophosphate class insecticide, one of today's most effective and widely used ornamental insecticides.

**Size: 2 oz**





## Overture

Code: **INSVALOVER2OZ-8**

There's a new Overture and it's killing thrips. The unique mode of action fights resistance and controls thrips at all life stages—including tough western flower thrips—while also controlling lepidopterous insects. Overture Insecticide is a great rotation partner for your greenhouse, and it's safe on most beneficial insects, too.

**Size: Eight 2 oz packets**

## Pyganic 1.4 and 5.0 (OMRI Listed)

Code: **INSPYG1.41Q, INSPYG5.01G**

PyGanic® Crop Protection is an organically-compliant, broad-spectrum contact insecticide. Stop damage fast - PyGanic delivers quick knockdown and control of crop-damaging insects. Flexible - No pre-harvest interval Organically compliant - PyGanic is OMRI® listed and meets the USDA's NOP requirements for an input. Broad Spectrum.

**Size: 1 qt**

## Pylon

Code: **INSPPYL1P**

Pylon works as a contact and ingestion miticide by interrupting energy production. The material has translaminar activity, which means that the material penetrates leaf tissues and forms a reservoir of active ingredient within the leaf. This provides residual activity against certain foliar-feeding insects and mites. Pylon is labeled for mites (two spotted spider, broad, and cyclamen mites) and caterpillars.

**Sizes: 1 pint**

## Pylon TR

Code: **BASFPYTR2OZ**

Featuring an exclusive aerosol delivery system, Pylon® TR total release insecticide provides superior control of thrips, mites and other nuisance pests in commercial greenhouses and fully enclosed garden centers. This ultra-low-volume fogger insecticide is used on bedding plants, flowering hanging baskets, foliage, potted flowering plants, fruiting vegetables and ornamentals.

**Size: 2 oz**

## Pyrethrum

Code: **WRL09-1120TR**

Pyrethrum TR Total Release Insecticide is a ready-to-use, ultra-low-volume fogger designed to effectively control a wide variety of greenhouse insects, including aphids, fungus gnats, mites and whiteflies, as well as numerous secondary insect pests.

**Size: 2 oz**

## Safari

Code: **INSVALSAF3P**

Safari Insecticide, a super-systemic insecticide with quick uptake and knockdown, controls a broad spectrum of ferocious and invasive pests, including Q- and B-biotype whitefly, Hemlock woolly adelgid, emerald ash borer, mealybug, mountain pine beetle 2(ee), leafminer, fungus gnat, black vine weevil, glassy-winged sharpshooter, armored and soft scale and lacebug.

**Sizes: 3 lb**

## Savate

Code: **INSJUDO8OZ**

Savate® provides excellent knockdown and residual control of all stages of mites and whiteflies. Effective on all life stages of mites and whiteflies, including eggs and immature stages. Mite species controlled include: Tetranychid mites, Tarsonemid mites, Tenuipalpid mites and Eriophyid mites.

**Size: 8 oz**

## Sevin Granular (Bait)

Code: **INSSEV50LB**

Easy-to-use Sevin® Insect Killer Granules kill more than 100 insect pests by contact in lawns, home perimeters, and ornamental and edible gardens. Broadcast the granules at recommended rates to provide uniform coverage, and then water thoroughly to release the active ingredient. The granules reach insect pests where they hide, above and below the surface, and keep on killing pests for up to three months.

**Size: 50 lb**

## Shuttle O

Code: **INSSHUTO1P**

Shuttle O miticide is the first product from the naphthoquinone derivative class of chemistry. Shuttle O is an excellent choice as a rotational tool for control of two-spotted spider mites, spruce spider mites and other mites.

**Size: 1 lb**

## SIL Matrix

Code: **INSSILM2.5G**

Sil-MATRIX introduces a novel active ingredient—soluble silica—to crop protection. When spray applied, it controls the mites and insects it contacts suppressing their populations. Sil-MATRIX also forms a physical barrier within the leaf cuticle that prevents penetration of fungal diseases, primarily powdery mildew.

**Size: 2.5 gal**

## Sirocco

Code: **INSSIR0802**

Sirocco provides quick knockdown and long residual control of a wide variety of insects and pests such as thrips and mites. Sirocco may be used in greenhouse, shadehouses, nurseries (including Christmas tree / conifer plantations), landscapes and interiorscapes.

**Size: 250 ml**

## Spear-T

Code: **INSS1G**

Spear-T is a bioinsecticide for treatment of thrips, whiteflies, two spotted spider mites and broad mites in vegetables and ornamentals in greenhouses. Field trials of Spear-T demonstrate that results are equivalent or superior to conventional control chemicals.

**Size: 1 gal**

## Sucrashield (OMRI Listed)

Code: **INSSS1G**

SucraShield Insecticide/Miticide provides fast and sure biochemical control on a wide range of soft-bodied problem pests in the Greenhouse and Nursery as well as Fruits, Nuts, Mushrooms and Vegetables.

**Sizes: 1 gal**

## SuffOil-X (OMRI Listed)

Code: **INSUFFOILX1G**

SuffOil-X is a unique concentrate of pre-emulsified, highly refined, high paraffinic, low aromatic oil. Its pre-emulsification process breaks down the oil particle to 1/14th its original size before emulsifiers are added. The small oil droplets assure that a very thin, uniform coating of oil is applied to the plant, which effectively smothers and kills pests while maintaining plant safety.

**Sizes: 1 gal**



## Talstar-P

Code: **INSTAL1Q**

Flexible and powerful, Talstar Professional is ideal for lawn, landscape and perimeter jobs and is compatible with herbicides, fungicides, other insecticides and liquid fertilizers. Talstar provides long-lasting, broad-spectrum control of the toughest lawn and ornamental pests, including billbugs, chinch bugs, fleas, ticks, mites and all species of lawn ants routinely targeted by lawn care operators. Whether you're up against Argentine ants, big-headed ants, carpenter ants, odorous house ants, white-footed ants or even fire ants, Talstar Professional will help you achieve complete and long-lasting control.

**Sizes: 1 qt**

## Tame Orthene

Code: **WRL09-TAMEGRT**

Tame/Orthene TR Total Release Insecticide comes as a ready-to-use, ultra low-volume insecticide fogger that controls a broad spectrum of greenhouse insects, including mites. Tame/Orthene TR provides a dry application of active ingredient. The active ingredients are a combination of fenpropathrin and acephate. Acephate is an organophosphate class insecticide, one of today's most effective and widely used ornamental insecticides, and fenpropathrin is a pyrethroid.

**Size: 16 oz**

## Tersus

Code: **INSTER5.01G**

For growers who want fast, consistent on-contact knockdown and control on virtually any crop for the day of the harvest, Tersus® Insecticide delivers rapid results. The active ingredient in Tersus is pyrethrins, a botanical insecticide that is nonpersistent in the environment, and controls a broad spectrum of insects such as aphids, thrips, lygus, leafhoppers and many more.

**Size: 1 gal**

## Tetresan

Code: **INSVALTS1P**

With contact and translaminar movement, TetraSan controls spider mites on the underside of leaves, even when it's difficult to get good under-leaf spray coverage. TetraSan has a unique mode of action, offers residual control up to five weeks and is safe to most beneficials.

**Sizes: 1 lb**

## Venerate CG & XC

Code: **INSVENGC1Q, INSVENGC1G, INSVENXC2.5G**

Venerate® CG advanced Bioinsecticide features multiple modes of action and is effective against a wide variety of chewing and sucking insects and mites yet easy on beneficials.

With an MRL tolerance exemption, a zero-day pre-harvest interval, and no limit on the number of applications, Venerate XC can help you meet your customers' desire for residue-free crops and produce.

**Size: 1 qt, 1 gal, 2.5 gal**

## Xentari

Code: **INSZENT1LB**

XenTari® is the world's only biological insecticide containing a natural, potent strain (ABTS-1857) of the microorganism *Bacillus thuringiensis* subspecies *aizawai* (Bta). It controls caterpillar pests on vegetables, fruits, nuts, row crops, and turf (specific registrations vary by country).

**Size: 1 lb**





# GROWTH REGULANTS & ROOTING HORMONES

## A-Rest

Code: **FAAr1QT**

A-Rest Plant Growth Regulator is the tried and true PGR for plugs, transplants, bedding plants, and perennials. A-Rest provides just the right amount of growth regulation. Gentle enough on tender plugs and transplants yet strong enough to adequately regulate perennials. A-Rest reduces internode elongation resulting in a more compact plant with darker green leaves. A-Rest has no adverse effects to flowers including no flower delay, no residue, and no phytotoxicity.

Size: 1 qt

## Armory

Code: **BSA1LB**

Armory is a high concentration of several select beneficial plant bacteria. These powerful species of Bacillus are all scientifically proven plant growth, yield and vigor promoting bacteria, each with its own unique function that compliments the entire group and provides maximum aid to the plant. In addition, Armory's superior formulation maximizes the benefits of the combined strains providing plants consistent performance.

Size: 1 lb

## Axiom

Code: **RXGA2OX, RXGA3X2G**

Boosts overall growth and production. AXIOM is a Plant Health Promoter and Growth Stimulator that activates a plant's defense system resulting in improved plant growth and increased yields. Harpin Proteins are produced in nature by certain bacteria. Plants develop receptors on their foliage to detect the presence of Harpin Proteins which leads to increased plant yields and health. AXIOM has multi-year University and field-tested results on a vast array of different crops and ornamentals.

Size: 2 oz, 3x2 gram

## B-Nine

Code: **GRB95LB**

B-Nine WSG reduces plant height in ornamental plants by reducing internode length. Other benefits include a deeper green color and reduced breakage during shipping. B-Nine WSG when applied to plant foliage is absorbed into the leaf, moves within the plant to the growing points to reduce internode elongation. On certain crops a tank mix of B-Nine WSG plus Cycocel can provide a synergistic effect that results in enhanced activity. An example is 1250 PPM of B-Nine WSG and 1250 PPM of Cycocel for moderate height control in finishing bedding plants.

Size: 5 lb

## Bio-Tam 2.0

Code: **FUNBIOTAM5LB**

Bio-Tam® 2.0 is a biorational fungicide providing outstanding disease protection in vegetable crops. BioTam® 2.0 contains two distinct natural strains of disease-killing microbes – Trichoderma asperellum and Trichoderma gamsii – both of which are effective in a broad range of temperatures and humidity.

Size: 5 lb

## Bonzi

Code: **GRBZ1Q, GRBZ1G, GRBZ2.5G**

Bonzi® plant growth regulator ensures plants stay compact and beautiful to keep them at their peak longer for increased profitability. It keeps plants uniformly compact and strong by reducing internode stretch, it can be used on a wide variety of bedding plants, bulb crops, annual and perennial plants, herbaceous and woody ornamentals, and it can be applied as a single spray, drench, or preplant bulb soak and provides an excellent margin of safety at all stages of development.

Size: 1 qt, 1 gal, 2.5 gal

## Citadel

Code: **FACIT1G**

Citadel provides effective PGR activity on a broad range of containerized crops, such as poinsettia, geraniums, azaleas, hibiscus, bedding plants and other herbaceous and woody ornamentals. By inhibiting the biosynthesis of gibberellins, Citadel reduces plant height by limiting internode elongation. Citadel can be applied alone or tank-mixed with other plant growth regulators such as Dazide 85 WSG to produce higher-quality plants.

Size: 1 gal

## Clonex Rooting Gel

Code: **SS726007**

Clonex Rooting Gel is a high performance, water-based, rooting gel developed by Growth Technology™ Ltd. It is a tenacious gel which will remain in contact around the stem, actually sealing the cut tissue and then supplying the hormones needed to promote root cell development. It is manufactured under strict pharmaceutical laboratory conditions and is, consequently, years ahead of old fashioned hormones and powders.

Size: 1 qt

## Configure

Code: **FACON.5G**

As the only pure 6-BA PGR, Configure effectively increases lateral branching and flowering in a number of popular ornamental species. In addition, applications of Configure may reduce the height of treated plants, resulting in more compact and marketable crops. Configure is labeled for use on containerized annual and perennial flowering and foliage crops as well as tropical plants.

Size: 1 qt

## Dazide

Code: **FAD851P, FAD855P**

Dazide 85 WSG is a plant growth regulator from Fine Americas, Inc., containing 85% daminozide, and formulated in an exceptional, high-quality water soluble granule. It helps growers manage plant growth and development to ensure that plants are compact, strong, and better able to cope with transportation or transplanting. Dazide 85 WSG can be used on a wide range of ornamental plants.

Size: 1 lb, 5 lb



## Florel

Code: **GRFL1G**

Florel Growth Regulator is used to reduce or eliminate undesirable fruit development on many ornamental trees and shrubs. Florel Growth Regulator can also be used to reduce the plant height of potted daffodils, increase lateral branching in ornamentals, remove mistletoe from certain trees, and to induce flowering of ornamental bromeliads.

Size: 1 gal

## Hormodin (0.1%, 0.3% or 0.8% IBA)

Code: **MIS#1HOR1P (.1%), MIS#2HOR1P (.3%), MIS#3HOR8OZ (.8%)**

Hormodin is a root inducing plant hormone. Hormodin is a formulation of indole-3-butyric acid (IBA). IBA is a synthetic auxin rooting hormone, which acts as a root stimulant.

Hormodin enhances rooting, which reduces propagation bench time and plant loss. Hormodin is easy to use, yielding steadfast performance of rooted cuttings and zero disease migration.

Size: 1 lb (.1%), 1lb (.3%), 8oz (.8%)

## Hortus IBA

Code: **PTHORTIS100G**

Hortus IBA Water Soluble Salts 20% Rooting Hormone - Kg will propagate annual, perennial and woody plants cuttings by all basal and foliar methods. Unlike other pre-made quick dip methods, Hortus IBA Water Soluble Salts come alcohol free and retails at a lower price point. Use Hortus IBA Water Soluble Salts (20%) to make rooting solutions. The Salts dissolve easily in water to over 100,000 ppm IBA. Use the solutions to propagate new plants from cuttings. Treated cuttings are expected to produce uniform roots all around the basal end.

Size: 100 gram

## KLN Concentrate

Code: **DYNKLN-008, DYNKLN032, DYNKLN-100, DYNKLN-500**

K-L-N Concentrate™ is a root stimulating solution containing both (IBA) Indole-3-butyric acid and (NAA) 1-Napthaleneacetic acid hormones that produce vigorous root development in all plants. Use it for propagating cuttings and as a transplanting drench for newly potted plants. Drench or mist your plants for an explosion of new root growth. Professional growers recommend K-L-N to speed up propagation of cuttings in all growing media.

Size: 8 oz, 1 qt, 1 gal, 5 gal

## MegaPhos

MegaPhos is a high concentration of a unique, natural, wild microorganism named *Bacillus megaterium* strain HM87. This potent microorganism is essential for phosphorus uptake in plants, especially when bound in high pH soils. When applied to the plant, MegaPhos grows on the root system, colonizing and taking up residence in the rhizosphere. While there, MegaPhos produces several essential enzymes and secondary metabolites that helps solubilize bound or tied up phosphorus, making it more available to the plant.

## Nitryx SP

Code: **BSN1LB**

Nitryx is a high concentration of proprietary beneficial bacteria on a 100% water soluble powder. This powerful new product effectively fixates nitrogen from the atmosphere and transfer it to the plant, thereby making fertilizer use much more efficient. In fact, when used in combination with fertilizers, researchers have seen Nitryx reduce the need for traditional chemical fertilizers.

Size: 100 gram

## ProGibb

Code: **GRVALPG1Q**

ProGibb is used in many crops to improve crop quality and value. In seedless table grapes, ProGibb enlarges the cluster, thins excessive fruit and increases berry size. In citrus, ProGibb maintains the quality of the rind, extending the harvest period. ProGibb is also used to improve the market value of sweet and sour cherries, blueberries, and a number of other fruits and vegetables. In cotton and rice, ProGibb stimulates early season growth for more yield potential.

Size: 1 qt

## Radiate

Code: **FERRAD1G**

It's time to give back to the crops that have given you so much over the years. Grow your best season by giving your crop Radiate—specifically designed to help develop longer, stronger, healthier roots to improve nutrient uptake. This powerful root growth technology increases your plants' ability to utilize more essential nutrients and water in your fields. The unique balance of IBA and Kinetin consistently supports maximum root growth and plant performance. Ideal for corn, soybeans, cotton, peanuts, wheat, potatoes, sugarbeets and dozens of other crops.

Size: 1 gal

## Rhizopon (0.1%, 0.3% or 0.8% IBA)

Code: **RHIZO#1IBA1P (.1%), RHIZO#2IBA1P (.3%), RHIZO#3IBA1P (.8%)**

Rhizopon Rooting Hormone Powders use dry-drip application to act with a plant's own natural rooting hormones. This aids in root formation by uniform absorption of the active ingredient. Approved label under WPS for zero-hour reentry interval. Registered with the U.S. Environmental Protection Agency for greenhouse and nursery use. Rhizopon plant rooting products have been in use since 1939, when they were developed in the Netherlands. Using a "dry drip" method of application, three color coded concentrations are available for the broadest range of plant material.

Size: 1 lb (.1%), 1lb (.3%), 1lb (.8%)

## Tenet WP

Code: **BSTENET1LB**

Tenet® WP is a second-generation biorational fungicide with a proven combination of two species of beneficial *Trichoderma* fungi used in the management of soil-borne diseases which include *Fusarium* spp., *Phytophthora* spp., *Pythium* spp., *Rhizoctonia* spp., *Sclerotinia* spp., *Sclerotium rolfsii*, *Thielaviopsis basicola*, *Verticillium* spp., as well as *Armillaria* sp and *Rosellinia* sp. These soil-borne root and collar rot diseases affect a wide range of vegetable, fruit, row, and ornamental crops.

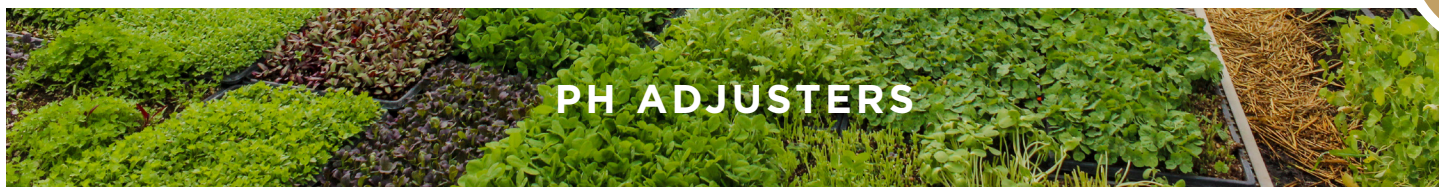
Size: 1 lb

## Wood's Rooting Compound

Code: **MISRC1P, MISRC1G**

A safe, effective, and inexpensive way for growers to use rooting stimulants for plant propagation. It contains isopropyl alcohol which eliminates cross-contamination and makes the solution self-sanitizing. The concentrated dip lets you easily select the exact concentration desired for each type of cutting. Wood's is safe to use on ornamental trees and fruit trees that have not yet produced fruit. The shelf life in the original container is up to two years (at room temperature - do not refrigerate). Limiting exposure to sunlight and intense heat will help prolong the shelf life.

Size: 1 pt, 1 gal



## PH ADJUSTERS

### 0-0-25 PH Booster

Code: **GPPHB0-0-25**

Growth Products' 0-0-25 Liquid Potassium Solution is a crystal clear concentrate solution containing a very safe and reliable source of potassium from potassium carbonate. It has an extremely low phytotoxicity level, does not contain chlorides, and has the lowest salt index of any potassium source. 0-0-25 will adjust both water and soil pH levels. Since its clear solution does not settle out, 0-0-25 can be directly siphoned from the original container with a high ratio proportioner. It is alkaline (pH =11), and will raise the pH levels of your stock tank and growing media.

**Size: 2.5 gal**

### 66° Sulfuric Acid

Code: **FERSA75LB**

Sulfuric Acid, 66 DEG Be, Technical is an extremely corrosive acid that comes as a yellowish slightly viscous liquid. It is soluble in water and is a diprotic acid. It has very strong corrosive, dehydrating and oxidizing properties and is hygroscopic. It uses range from detergent production, antifreeze, pharmaceuticals and fertilizers to cellophane, lubricants and production of explosives. Technical grade products supplied by Spectrum are indicative of a grade suitable for general industrial use.

**Size: 5 gal, 15 gal, 30 gal, 55 gal, 275 gal**

### 85% Phosphoric Acid

Code: **FERPA5G**

The most common source of phosphoric acid is an 85% aqueous solution; such solutions are colourless, odourless, and non-volatile. The 85% solution is a syrupy liquid, but still pourable. Although phosphoric acid does not meet the strict definition of a strong acid, the 85% solution is acidic enough to be corrosive.

**Size: 5 gal, 15 gal, 30 gal, 55 gal, 275 gal**

### Citric Acid 50% Liquid

Code: **GPPH2.5G, GPPH30G**

Growth Products' pH Reducer is a safe, organic citric acid solution. This is welcome news for golf course superintendents, farmers, and nursery owners in environmentally sensitive areas and/or those who would like to stay away from corrosive acids when it comes time to adjust a soil or water pH problem. This pH Reducer is gentle on turf. With its non-burning formula, you won't run into root pruning problems, which is quite common when using harsher acids such as phosphoric and sulfuric acid.

**Size: 2.5 gal, 30 gal**

### Citric Acid 99% Powder Organic Bicarbonate

OBR is an Organic Bicarbonate (and pH) Reducer that is derived from Citric Acid. It has the advantage over harsh mineral based "Hazmat" acids, like Nitric, Phosphoric or Sulfuric Acid, of being non-hazardous and easy to handle, easily dissolves in water and is highly compatible with other water soluble products. While eye protection, gloves and an apron are recommended there is no requirement for special handling and equipment and storage does not require lock and key. It has been known to cause minor skin and eye irritation and should be handled with respect.

### Potassium Hydroxide Caustic Flakes

Code: **FERHF55LB**

Top quality Potassium Hydroxide flake for all of your soap making, and other potassium hydroxide needs.

Potassium Hydroxide, also known as caustic potash is used in a wide variety of products, from liquid soap, to making cleaners. It is also used as a source of potassium.

**Size: 50 lb**





## Bio-foaming Agent

Code: **BFA5G**

Bio-foaming agents effectively removes organic build-up, odors, and scum in kitchens. The combination of citrus, foam, and premium microbes works fast on scum, organic build-up, and odors. It is delivered as a foam it is able to maintain contact on hard to clean areas like baseboards, outsides of beverage lines, and drain covers eliminating scum.

**Size: 2.5 gal**

## Green Clean Acid Cleaner

Code: **FUNGCAC5G**

GreenClean Acid Cleaner combines acids with non-foaming surfactants to help lift away organic deposits and clean surfaces contaminated with calcium, rust, and bicarbonate deposits. It is ideal for wherever scale, oxide or lime buildup is an issue.

**Size: 5 gal**

## Green Clean Granular

Code: **FUNZRO50LB**

Through the power of oxidation GreenClean Granular Algaecide breaks down algae cells on contact, you can see it working! Its unique organic chemistry immediately begins fighting algae blooms and releasing vital oxygen into the water as it biodegrades.

**Size: 50 lb**

## Green-Shield

Code: **BASFGS1G**

Prescription Treatment® brand Green-Shield® Disinfectant & Algicide — a biodegradable liquid concentrate for horticultural use that controls fungal, bacterial and viral plant pathogens/algae. The 1st step to a successful disease management program.

**Size: 2.5 gal**

## Horti-Klor

Code: **P49HK5G**

HORTI-KLOR™ is an active, high-foaming chlorinated detergent designed to dislodge stubborn material such as algae staining, plant residues, oily residues and dirt. The emulsion will not break during rinsing, thus preventing oily residues which contribute to bacterial growth and off-odors.

**Size: 5 gal**

## Kleengrow

Code: **P49KG1G, P49KG5G**

A broad-spectrum microbicide, KleenGrow™ is a mild quaternary ammonium chloride compound with wide spectrum fungicidal and bactericidal properties.

**Size: 1 gal, 5 gal (available in 30, 55 and 275)**

## Oximate 2.0

Code: **HERORNI150P**

OxiDate 2.0 kills bacterial and fungal pathogens, offering superior protection for your organic or conventional field and row crops. Use OxiDate 2.0 for curative and preventative crop protection applications.

**Size: 50 lb**

## Perpose Plus

Code: **FUNPP5G, FUNPP15G**

PERpose Plus™ is a treatment for the prevention and suppression/control of horticultural and agricultural diseases in commercial greenhouses, garden centers, landscapes, agricultural crops, nurseries, interiorscapes and professional turf care.

**Size: 5 gal, 15 gal**

## Physan 20

Code: **HFPSPH20**

PHYSAN 20™ is a broad range disinfectant, fungicide, virucide, and algaecide which effectively controls a wide variety of pathogens on hard surfaces and plants. Its applications include greenhouses, hard surfaces, lawn and turfgrass, seedlings and cut flowers, decorative fountains, pools and birdbaths, and plants.

**Size: 1 gal**

## Sanidate 5.0 (OMRI Listed)

Code: **FUNSAN2.5G, FUNSAN5G**

Keep your post harvest equipment and fruits and vegetables free of disease with SaniDate 5.0's time-tested activated peroxide chemistry. SaniDate 5.0 is broadly labeled for hard surface sanitization and disinfection, as well as fruit and vegetable wash treatments to eliminate human health and plant spoilage pathogens on contact. SaniDate 5.0 is also NOP compliant and

**Size: 2.5 gal, 5 gal**

## Strip-It (Oasis)

Code: **FL6164**

Strip-It® Cleaner is an end-of-season cleaner for greenhouse structures and irrigation systems / water storage tanks and sunblock wash.

**Size: 1 gal**

## Strip-It (Pace49)

Code: **P4SI5G**

STRIP-IT PRO™ is a powerful combination of cleaning and wetting agents that effectively removes dirt and mineral deposits as well as dissolving mineral deposit residues.

**Size: 5 gal**

## Uptake

Code: **P49UT5G**

Biodegradable soil adjuvant and wetting agent for use in greenhouse and nursery stock, orchards, and turf. Provides increased water penetration through the soil and improved performance as a pesticide spray adjuvant.

**Size: 5 gal**

## Zerotol

Code: **FUNRO2.5G**

ZeroTol 2.0 is a broad-spectrum bactericide/fungicide that works on contact to kill plant pathogens and their propagules, including spores. Formulated with our powerful and stable paracetic acid chemistry, use ZeroTol 2.0 starting at propagation through production to protect all greenhouse and nursery crops, including fruits and vegetables.

**Size: 2.5 gal**



Pioneering agricultural research, environmental safety, customer support, and custom formulated products, JH Biotech's mission is to create environmentally responsible natural, organic, and biological products for plant health, pest management, and animal well-being. JH Biotech creates positive changes in agriculture to benefit the grower, consumer, and environment through their products and green science.

### Ant Out *Natural Ant/Insect Control*

Ant Out is a natural, botanical ant killer derived from essential oils and other natural ingredients. Ant Out wipes out all types of ants and controls all life stages – egg, larva, pupa, and adult. It is also effective against spiders, silverfish, crickets, and other common insect pests. Ant Out is a contact kill product meaning it will kill ants that come in direct contact with the spray. Ants will usually die within seconds and the effects can be seen immediately.

#### Active Ingredients

- Clove Oil 20%
- Cottonseed Oil 40%
- Inert Ingredients 40%



### BioEnhancer *Insect Feeding Stimulant*

BioEnhancer® is an insect feeding stimulant and attractant. When combined with chemical and/or biological insecticides it may increase their efficiency. BioEnhancer® stimulates insects of the Order Lepidoptera to eat insecticides thereby increasing the effectiveness of insecticides.

#### Principal Functioning Agents

Molasses.....	24.5%	Whey.....	7.0%
Acetic Acid .....	1.5%	Dextrin.....	1.1%
Gum Arabic.....	0.3%		

### BioRepel *Natural Insect Repellent*

BioRepel® is an all natural insect repellent made from pure garlic oil. When applied the strong garlic odor dissipates within a few minutes, but remains offensive to insect pests for days. BioRepel® can be applied to all plants, trees, shrubs and crops to repel most insect pests. It is safe to use, handle, and store and has no plant toxicity and is non-toxic to humans and animals.

#### Active Ingredients

Garlic Oil.....10%

#### Other Ingredients

Water.....90%



### EFFECTIVE ON



Thrips



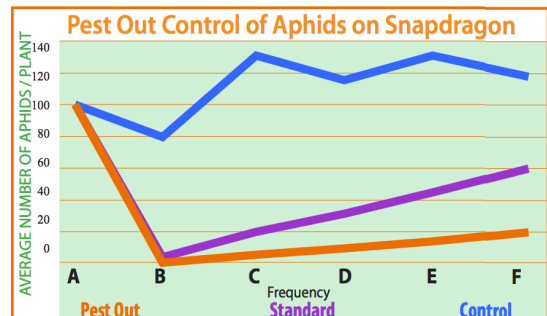
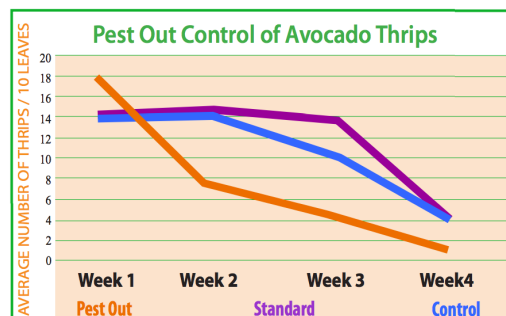
Aphids



Mites

### Pest Out *Natural Insect Control*

For control of various mites and insects on many types of crops such as melons, squash, tomatoes, tree crops, grapes, cucumbers and all sorts of flowers. Pest Out is a FIFRA 25b exempt pesticide (Rule 40 CFR 152.25). Pest Out has shown the ability in independent, replicated field and greenhouse trials to control mite populations for 3-4 weeks with a 1% spray solution. Pest Out is applied as a foliar spray and should be a great addition to a well managed IPM program. It is made from 100% organic components so there is no danger of toxic effects to humans or animals.





### Fosphite *Reduced Risk Systemic Fungicide*

Fosphite is a reduced risk fungicide for use on ornamentals and turf. FOSPHITE's active ingredient is phosphorus acid, which is toxic to various fungi like Phytophthora, Pythium, and Downey Mildew. When used in accordance with the label, Fosphite can offer superior protection against these diseases while at the same time remaining safe to applicators and the environment. Fosphite can be used to control Phytophthora, Pythium and Downey Mildew on such plants as Azaleas, Bougainvilleas, Diffenbachias, Ficus, Juniper, Pine, Philodendrons, Roses, bedding plants and many others. Fosphite is also an excellent control measure for yellow turf on landscaped lawns and golf courses.

#### Benefits

- Excellent control of Pythium, Pytophthora and Downey Mildew
- Low application rates translate into lower cost
- Registreed as a 'Reduced Risk Pesticide' by the EPA
- Environmentally safe
- Kills fungi and is non phytotoxic\*
- Works both as a foiar and soil applied fungicide



### Mildew Cure *Natural Fungicide for Powdery Mildew*

For control of Powdery Mildew on many types of crops such as melons, squash, tomatoes, cucumbers, trees crops, grapes and flowers. Mildew Cure is applied as a foliar spray and should be a great addition to a well managed disease program. It is made from 100% organic components.

#### Ingredients

Cottonseed Oil .....	30%
Corn Oil.....	30%
Garlic Oil.....	23%
OTHER INGREDIENTS .....	17%
Oleic Acid, Lauric Acid, Sodium Bicarbonate, Water	
TOTAL .....	100%

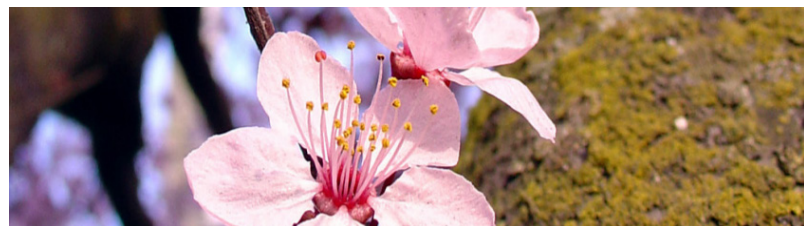


### No Moss *Natural Broad Spectrum*

No Moss is a broad spectrum mossicide that controls both mosses and liverworts. It is derived from essential oils and other natural ingredients. These active ingredients are listed as food grade materials so No Moss is safe to use around children and pets. No Moss is exempt from EPA registration under FIFRA Sec. 25(b).

#### Ingredients

Garlic Oil .....	10%
Clove Oil.....	20%
Cottonseed Oil.....	40%
OTHER INGREDIENTS .....	30%
Oleic Acid, Lauric Acid, Sodium Bicarbonate, Water	
TOTAL .....	100%



### Weed Zap *Organic Weed Control*

Weed Zap is an all natural non-selective herbicide. Weed Zap "zaps" small broad leaf and grassy weeds. It's natural ingredients will eliminate plants that are six inches in height or less. Weed Zap is a broad spectrum herbicide that is suitable for organic production. WEED ZAP is 100% biodegradable, which makes it an environmentally smart product to use around house, school, park, playgrounds or anywhere people and pets are present..

### Natural Wet *Organic Wetting Agent*

Natural Wet is a special formulation designed to alleviate the stress plants suffer under unfavorable conditions. Natural Wet can also facilitate nutrient and water absorption, \*adding Natural Wet to the spray tank enhances the spreading and sticking properties of the spray solution. The main ingredients are saponins which are sapogenin glycosides derived mainly from yucca plant extracts. Natural Wet can be applied to potting mixes to aid in the uniformity of water absorption.

\*This usage not approved for use in California.

### GC Mite *Organic Insecticide*

For control of various mites and insects on many types of crops such as melons, squash, tomatoes, tree crops, grapes, cucumbers and all sorts of flowers. GC-Mite™ is a FIFRA 25b exempt pesticide (Rule 40 CFR 152.25). GC-Mite™ has shown the ability in independent, replicated field and greenhouse trials to control mite populations for 3-4 weeks with a 1% spray solution. GC-Mite™ is applied as a foliar spray and should be a great addition to a well managed IPM program. It is made from 100% organic components so their is no danger of toxic effects to humans or animals.



Certis USA is a pioneer in the development of biological pesticides and has become one of the world's leading manufacturers and distributors of biopesticides. We specialize in biological product development, from screening to formulation to field development, manufacturing; fermentation and formulation, global registrations for biological products and global sales channels. We export to more than 30 countries.

### Neemix 4.5

Neemix 4.5 is an insect growth regulator. It controls targeted insect larvae by interfering with the insects' ability to molt. It is effective on all larval and pupae stages. It also reduces damage by repelling and deterring feeding of all stages of insects.

**Active Ingredient:** Azadirachtin 4.5%



### Des-X

DES-X insecticidal soap concentrate is a bioinsecticide that controls insect and mite pests on contact. It contains specially selected fatty acid salts (soaps) that penetrate the body of pests and results in rapid death.

**Active Ingredient By Wt.**

Potassium Salts of Fatty Acids . . . . . 47%  
 Other Ingredients. . . . . 53%  
 Total. . . . . 100%



### SoilGuard

An easy-to-use granular formulation that contains a living, naturally occurring soil fungus, *Trichoderma virens*, that controls soil-borne diseases caused by *Pythium*, *Rhizoctonia* and *Fusarium*.

**Active Ingredient:** *Trichoderma virens* (formerly called *Gliocladium virens*)



### PFR-97

PFR-97 contains a naturally occurring soil fungus that controls some of agriculture's most devastating pests, including whitefly, aphid, thrips and spider mite.

**Active Ingredient:** *Paecilomyces fumosoroseus*

### Neemazad 1%

With the introduction of Neemazad® 1% EC insect growth regulator, specialty crop growers can one-stop shop Certis USA for azadirachtin products. Neemazad is the dilute mixture to spray on a volume-to-volume basis.

**Active Ingredients:** 1.0 Wt % Azadirachtin

### Seduce

Seduce is a spinosad bait that attracts and kills ants, earwigs and cutworms. Its highly compressed easy-to-apply granules can be effective up to four weeks.

**Active Ingredient:** Spinosad (a mixture of spinosyn A and spinosyn D)

### AgSil 16H

Certis USA introduces a bionutrient product line based on AgSil® potassium silicate technology. AgSil products provide plants with silicon, an often overlooked nutrient that helps plants' deal with stress, temperature fluctuations, drought, salinity and metal toxicity.

### LifeGard WG

Introducing LifeGard WG, the first in a new class of biological disease control agents, used to manage early, late and *Cercospora* blights in potatoes, as well as white mold. Apply it to prime your potato crop to be ready and resistant against disease. LifeGard fits your resistance management program.



### CryMax

Crymax biological insecticide is a genetically engineered strain of Bt containing toxins from both *Bt kurstaki* and *Bt aizawai* strains. Biological insecticides, or Bt biolarvicides, based on a beneficial bacterium *Bacillus thuringiensis* (Bt) are the most proven, most widely used and most successful of the known biological pesticides.



### Trilogy

Thorough coverage is essential for good disease and mite control. Trilogy prevents fungal attack of plant tissue and contact activity to mite pressure on the plant. Avoid excessive run off of spray for maximum control.

**Active Ingredient:** Clarified Hydrophobic Extract of Neem Oil



### Sil-Matrix

Sil-MATRIX introduces a novel active ingredient—soluble silica—to crop protection. When spray applied, it controls the mites and insects it contacts suppressing their populations. Sil-MATRIX also forms a physical barrier within the leaf cuticle that prevents penetration of fungal diseases, primarily powdery mildew.

### Javelin

One of the most recognized brand names ever sold. Javelin WG contains a naturally occurring *Bt kurstaki* strain that offers broad spectrum control of mixed worm populations in tree and vegetable crops.

### Cueva

Cueva fungicide concentrate is a patented, fixed copper fungicide made by combining a soluble copper fertilizer with a fatty acid to form a true soap. This copper soap fungicide protects plants from infection from a wide range of diseases, including downy and powdery mildews.

**Active Ingredient:** Copper Octanoate (Copper Soap)

### OSO 5% SC

OSO is a polyoxin D zinc salt fungicide that controls diseases on vegetable and fruit crops.

**Active Ingredient:** Polyoxin D zinc salt



At BioWorks, we believe that how you grow is just as important as what you grow. That's why we are passionate about bringing growers environmentally responsible solutions for controlling insects and plant diseases. Our innovative family of products combines the environmental responsibility that you strive for with the cost-effectiveness and efficacy that you depend on.

### Cease

Cease is based on a naturally occurring, patented strain of *Bacillus subtilis* (strain QST 713). It provides effective control of a wide array of both fungal and bacterial pathogens, while providing outstanding plant, human and environmental safety.



### Suffoil-X

SuffOil-X® is a unique concentrate of pre-emulsified, highly refined, high paraffinic, low aromatic oil. It is the ideal choice for effective insect, mite and disease control in a broad range of greenhouse, nursery and vegetable crops.



### BotryStop

BotryStop is a biological fungicide for the control of *Botrytis* and *Sclerotinia*. Labeled for use on a wide variety of field or greenhouse grown vegetables, grapes and other small fruits. Also for use on ornamentals in the greenhouse or nursery.

- Active ingredient: *Ulocladium oudemansii* (U3 strain)
- REI: 4 hours.
- Controls: *Botrytis* and *Sclerotinia*.
- Ships direct from the vendor.

### RSSI

A microbial soil inoculant that contains both *Trichoderma harzianum* strain T-22 and *Trichoderma virens* strain G-41. R.S.S.I. augments the natural microbial activity in the soil, increasing the availability of nutrients to the growing plant. Available in granules or as a wettable powder.

### Milstop

Milstop Organic Mildew Fungicide provides curative control of powdery mildews. A potassium bicarbonate-based, foliar fungicide that kills powdery mildew on contact by pulling water from spores and their growing strands. It also inhibits enzymes involved in fungal cell wall formation by altering the pH on the leaf surface, providing 1-2 weeks of residual protection.

### PreFence

PreFence, a new organic biological fungicide that effectively controls a wide range of pathogens: damping-off caused by various fungi, such as *Alternaria* and *Rhizoctonia solani*; wilt and root diseases caused by *Fusarium*, *Phytophthora* and *Pythium*, according to a press release. PreFence can also be used to suppress grey mold caused by *Botrytis*.

PreFence contains mycelium and spores of *Streptomyces* strain K61, a naturally occurring bacterial strain isolated from *Sphagnum* peat.

The product (a wettable powder) is mainly used in the form of an aqueous suspension.

### Molt-X

Molt-X works primarily as an insect growth regulator that disrupts the molting process in insects. Once treated with Molt-X, insects become sluggish, stop feeding and fail to mature and reproduce. Molt-X also acts as an insect repellent, antifeedant and ovipositional deterrent.



### BotaniGard ES & WP / MyControl ESO & WPO (Organic version of BotaniGard)

BotaniGard Mycoinsecticide is an effective biological insecticides that is used to control whitefly, thrips, aphids, and many other insects. It is based on the highly successful fungus, *Beauveria bassiana* strain GHA, and controls the most troublesome crop pests – even resistant strains such as Q-biotype whitefly. BotaniGard is versatile enough to use as a stand alone, as a tank mix partner, or in rotation with other insecticides.



Formulation	Pest
BotaniGard ES & MyoControl ESO (Organic) <i>Liquid emulsifiable suspension</i>	Whiteflies, mealybugs, aphids, thrips, other labeled insects
BotaniGard 22WP & MyoControl WPO (Organic) <i>Wettable Powder</i>	Whiteflies, mealybugs, aphids, thrips, other labeled insects

### RootShield

Before planting, choose RootShield® Granules to mix in your soil/media or drench with RootShield® WP wettable powder for greenhouse, nursery and vegetable crops. The active ingredient is a unique hybrid fungus, *Trichoderma harzianum*, strain T-22 that protects roots from many pathogens. Within 24-hours RootShield blocks and actively attacks pathogens by “eating” them; ensuring uninterrupted plant growth.

### RootShield Plus

RootShield PLUS is an organic biological fungicide with dual active ingredients that prevent a broad spectrum of root diseases and promote healthy root systems. The active ingredients are *Trichoderma harzianum* strain T-22 and *Trichoderma virens* strain G-41. Before planting, choose RootShield PLUS® Granules to mix in your soil/media or drench with RootShield PLUS® WP wettable powder for greenhouse, nursery and vegetable crops.

### Insect Monitoring Sticky Cards

RootShield PLUS is an organic biological fungicide with dual active ingredients that prevent a broad spectrum of root diseases and promote healthy root systems. The active ingredients are *Trichoderma harzianum* strain T-22 and *Trichoderma virens* strain G-41. Before planting, choose RootShield PLUS® Granules to mix in your soil/media or drench with RootShield PLUS® WP wettable powder for greenhouse, nursery and vegetable crops.





BioSafe Systems is a family-owned manufacturer of biodegradable disease-control products started in 1998. The company quickly expanded to the agricultural, industrial, and consumer markets with innovative pest control solutions, applications, and products. The mission of BioSafe Systems is to provide disease control solutions utilizing reduced-risk chemistries that are safe and healthy for people and the land.

### ZeroTol 2.0

ZeroTol 2.0 is a broad-spectrum bactericide/fungicide that works on contact to kill plant pathogens and their propagules, including spores. Formulated with our powerful and stable paracetic acid chemistry, use ZeroTol 2.0 starting at propagation through production to protect all greenhouse and nursery crops, including fruits and vegetables.



### SaniDate 5.0

Keep your post harvest equipment and fruits and vegetables free of disease with SaniDate 5.0's time-tested activated peroxide chemistry. SaniDate 5.0 is broadly labeled for hard surface sanitization and disinfection, as well as fruit and vegetable wash treatments to eliminate human health and plant spoilage pathogens on contact. NOP compliant and OMRI Listed for organic production.

### SaniDate 12.0

SaniDate 12.0 is an EPA registered microbicide for treating irrigation water and irrigation systems to suppress/eliminate water-borne plant pathogens, bacterial coliforms and algae. SaniDate 12.0's activated Peroxygen chemistry is highly effective, powerful and economical making it the ideal solution for treating irrigation water and irrigation systems.

### CalOx

CalOx is an easy and effective alternative to bagged lime for use on all types of agricultural field crops, greenhouse ornamentals and vegetable crops, as well as outside nursery and hay fields. It features finely micronized calcium in a liquid suspension that can be absorbed by leaves and roots.

### Bioceres WP

BioCeres WP is an insect-pathogenic bio-insecticide using the *Beauveria bassiana* fungus. The OMRI listed ANT-03 strain is approved for organic production and is perfectly suited in IPM programs, in a tank mix with other pesticides as well as specific, stand-alone use. BioCeres WP is used for the biological control of numerous pests including whiteflies, aphids and thrips by adhering to and penetrating the insect's exoskeleton, causing death. It can be used in a wide range of crops as well as ornamental plants and edibles.

### Bio-foaming Agent

Bio-foaming agents effectively removes organic build-up, odors, and scum in kitchens. The combination of citrus, foam, and premium microbes works fast on scum, organic build-up, and odors. It is delivered as a foam it is able to maintain contact on hard to clean areas like baseboards, outsides of beverage lines, and drain covers eliminating scum.

### P-Vent

PVent Biofungicide is an enhancement in microbial fungicide technology, providing growers with an easy-to-use, versatile IPM tool. This innovative development was spearheaded through a strategic partnership between two family-owned businesses: BioSafe Systems and Lallemand Plant Care.

### OxiDate 2.0

OxiDate 2.0 kills bacterial and fungal pathogens, offering superior protection for your organic or conventional field and row crops. Use OxiDate 2.0 for curative and preventative crop protection applications, or tank mix with other residual fungicides to help provide immediate knockdown control. With OxiDate 2.0, zero days to harvest and short re-entry interval allows growers to spray right up to harvest. (same product as Zeritol with a different label).



### Green Clean Granular

Through the power of oxidation GreenClean Granular Algaecide breaks down algae cells on contact, you can see it working! Its unique organic chemistry immediately begins fighting algae blooms and releasing vital oxygen into the water as it biodegrades.

### Green Clean Acid Cleaner

GreenClean Acid Cleaner combines acids with non-foaming surfactants to help lift away organic deposits and clean surfaces contaminated with calcium, rust, and bicarbonate deposits. It is ideal for wherever scale, oxide or lime buildup is an issue.

### TerraGrow Fertilizer

A powdered blend of scientifically selected beneficial bacterial and fungal spores to improve soil characteristics and plant stress tolerance. Increases the availability and absorption of macro/micro nutrients, stimulates root development/reduces transplant shock. Promotes systemic plant resistance to stress.

### Oxiphos

OxiPhos is a combination of phosphorous acid and activated peroxide that provides a one-two punch against diseases. The activated peroxide helps the phosphorous acid active ingredient to have a broader effect on targeted organisms. OxiPhos can be used throughout the growing season to prevent and control diseases caused by the oomycete group of pathogens.

### AXXE

AXXE Broad Spectrum Herbicide is a non-selective, weed control for grasses and broadleaf weeds. It is formulated to deliver maximum performance and provide fast-acting results on a long list of weeds and grasses, as well as most mosses and lichens. This product is an herbicidal soap product comprised of a form of ammoniated pelargonic salts.

### Azaguard

AzaGuard is a 3% Azadirachtin formulated Insect Growth Regulator (IGR) that offers broad spectrum insecticidal control on over 300 insect species. AzaGuard prevents molting between larval, pupal and nymphal stages and also repels insects in treated areas, reducing insect infestations in/around the facility.



### **Ancora**

Ancora Microbial Insecticide is a naturally-occurring fungus that infects both foliage and soil dwelling insects such as whiteflies, aphids, thrips, weevils, psyllids, leafminers, spider mites, mealybugs, and other pests. Ancora is registered by the EPA and is labeled for use in the greenhouse, nursery, landscape and turf markets.

### **Soilgard 12g (OMRI Listed)**

*G. virens*, the active ingredient in SoilGard 12G is a naturally occurring soil fungus, which is antagonistic to plant pathogenic fungi such as *Pythium* and *Rhizoctonia*, thereby aiding in control of these damping off and root rot pathogens. SoilGard 12G acts as a preventative and will protect non-infected plants.

### **Triact 70**

Triact 70 (clarified hydrophobic extract of Neem oil) is a broad-spectrum fungicide, miticide and insecticide (OMRI listed). This highly effective and economical botanical oil may be used indoors as well as outdoors on ornamental flowering plants, trees, shrubs and foliage grown in greenhouses, interiorscapes and commercial landscapes.

### **Triathalon BA (OMRI Listed)**

Triathalon BA is an OMRI listed broad-spectrum preventative biofungicide and bactericide for use on a wide variety of ornamentals, fruits, vegetables and herbs grown in greenhouses, nursery and shade houses. Triathalon BA also colonizes plant root hairs, preventing establishment of disease-causing fungi and bacteria.

### **Azitin O**

Azatin® O is a newly-formulated biological insect growth regulator (IGR) used to control the larval stage of a broad-spectrum of greenhouse and nursery pests. Azatin O is OMRI listed (Organic Materials Resource Institute), is soft on beneficials, and carries a 4-hour REI. Azatin O contains 175 grams of the active ingredient azadirachtin per gallon. Azatin O may be used for insect control on all crops such as ornamentals, vegetables, herbs, and berries, grown in the greenhouse, nursery, interiorscape, and in hydroponic growing situations.

### **Floramite SC**

Floramite SC Ornamental Miticide provides outstanding control of a variety of mite pests on ornamentals plants in greenhouse, shadehouse, nursery, field, landscape and interiorscape settings. Floramite SC is effective on a variety of mites and all life stages of Tetranychid spider mites.

### **Kopa**

Kopa™ insecticidal soap is a potassium salt of fatty acid soap that controls insects, mites and powdery mildew. Kopa can be used for organic production. Use on ornamental and shade trees including flower and foliage plants in greenhouse and outdoors. Pome, stone fruits, small fruits and vegetables both in field and outdoor production, Herbs and spices, Hops, coffee and others. See full label for specific directions.

Contact ACW Supply for more available OHP products

### **Marathon 1% Granular**

Marathon 1% G is a highly-active insecticide that demonstrates systemic activity in plants when applied to the soil surface or incorporated into the media. It offers up to 12 weeks of residual control on ornamentals plants for resale grown in the greenhouse or nursery.

### **Marathon II**

Marathon II is a flowable formulation that allows for a foliar spray application on ornamentals and vegetable transplants for resale grown in the greenhouse or nursery. At very low rates Marathon II as a spray offers 3 to 4 weeks of control on sucking and piercing insects (aphids, whiteflies, and thrips).

### **Pycana**

Pycana™ is a OMRI Listed Insecticide/Miticide combination product containing pyrethrins and canola oil. Pycana provides quick knockdown of many insects and mites including aphids, leafhoppers, earwigs, plant bugs, psyllids, mealybugs, thrips, whiteflies, and spider mites.

### **Sirocco**

Sirocco provides quick knockdown and long residual control of a wide variety of insects and pests such as thrips and mites. Sirocco may be used in greenhouse, shadehouses, nurseries (including Christmas tree / conifer plantations), landscapes and interiorscapes.

### **Shuttle O**

Shuttle O miticide is the first product from the naphthoquinone derivative class of chemistry. Shuttle O is an excellent choice as a rotational tool for control of two-spotted spider mites, spruce spider mites and other mites.

### **B Nine**

B-Nine WSG reduces plant height in ornamental plants by reducing internode length. Other benefits include a deeper green color and reduced breakage during shipping. B-Nine WSG when applied to plant foliage is absorbed into the leaf, moves within the plant to the growing points to reduce internode elongation. On certain crops a tank mix of B-Nine WSG plus Cycocel can provide a synergistic effect that results in enhanced activity.

### **Cycocel**

Cycocel is among the most reliable and widely used plant growth regulators on the market today. Cycocel may be used on any crop in the greenhouse or nursery including but not limited to, poinsettias, hibiscus, azaleas, and geraniums to reduce stem elongation, induce early flowering, improve flowering, and to produce compact plants with multiple buds per shoots.

### **Hormodin**

Hormodin is a root inducing plant hormone. Hormodin is a formulation of indole-3-butyric acid (IBA). IBA is a synthetic auxin rooting hormone, which acts as a root stimulant. Hormodin enhances rooting, which reduces propagation bench time and plant loss. Hormodin is easy to use, yielding steadfast performance of rooted cuttings and zero disease migration.



Certis USA is a pioneer in the development of biological pesticides and has become one of the world's leading manufacturers and distributors of biopesticides. We specialize in biological product development, from screening to formulation to field development, Manufacturing: fermentation and formulation, global registrations for biological products and global sales channels. We export to more than 30 countries.

### Nemasys® Beneficial Nematodes

Nemasys Steinernema feltiae beneficial nematodes help provide biological control of soil-dwelling stages of fungus gnats (Bradysia sp.), as well as soil and foliar stages of western flower thrips (Frankliniella occidentalis). Beneficial nematodes are microscopic worms that attack and kill targeted insects, without affecting any other organisms. Within the infected insect, the beneficial nematodes continually reproduce and then spread out for long-term control. Nemasys® contains live nematodes Steinernema feltiae in their infective juvenile stage. These nematodes attack pest larvae by entering through their natural body openings. Once inside, they release symbiotic bacteria, Xenorhabdus, which quickly kills the insect. Reproduction inside the insect host releases a new generation of hungry infective juveniles which disperse in search of more larval prey.

#### Nematode species:

Steinernema feltiae  
Activity: 54-86 °F (12-30 °C)

#### Pests Controlled

Fungus Gnat (Bradysia spp.)  
Western Flower Thrips (Frankliniella occidentalis)

#### Pests Suppressed:

Leatherjacket (Tipula paludosa)

#### Directions for Use

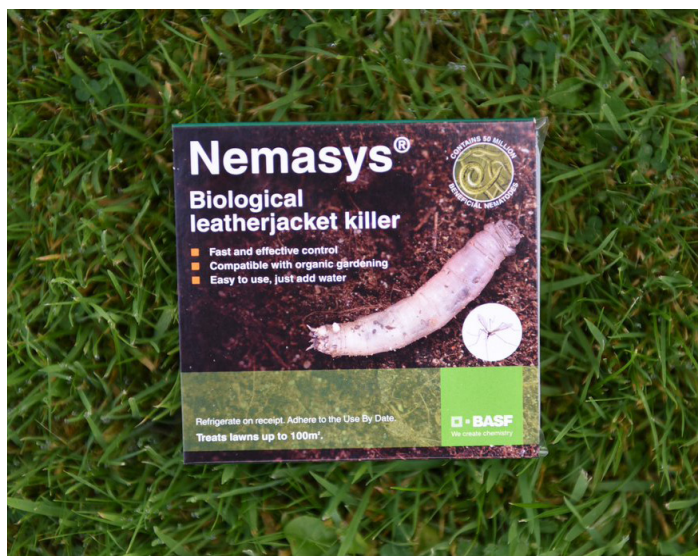
To make a stock solution, dissolve 1 tray of Nemasys 50 million in 2 gallons of water. Allow the product to hydrate and disperse for at least five minutes. Keep agitated until all stock solution is used.

#### Watering Can ( 2 gallons )

- Remove nozzle head from the watering can. Create application dilutions, as follows:
- First Application / Heavy Infestation - Mix 1 pint stock solution with 7 ½ quarts of water.
- Preventative Application / Light Infestation - Mix 1 cup of stock solution with 7 ¾ quarts of water.

#### Hand-Held Backpack Sprayers

- Water plant container as normal prior to nematode application. Remove all filters from the sprayer. Create application dilutions as follows:
- First Application / Heavy Infestation - Dilute one part stock solution to one part water.
- Preventative Application / Light Infestation - Dilute one part stock solution to 3 parts water.



Pot Diameter	Watering Can (2 gal)	Backpack Sprayer
4 in.	3 oz. per container	2-3 pulls on trigger
10 in.	8 oz. (1/2 c.) per container	4-5 pulls on trigger
14 in.	12 oz. (3/4 c.) per container	7-8 pulls on trigger
17 in.	16 oz. (1 c.) per container	8-10 pulls on trigger
21 in.	24 oz. (1 1/2 c.) per container	13-15 pulls on trigger

\* Please note: for calibration purposes on backpack sprayers, 1 ounce = 8-10 pulls on a trigger sprayer. The more concentrated dilutions for backpack sprayer applications helps to reduce the application time at each container.



Being an expert in pollination and biological control, Biobest knows everything about these topics. In 1987, Biobest was the first company to put bumblebees on the market. With thirty years of expertise, we still lead the way. Biobest continues to deliver high quality products at all times. We maintain the quality at every level: in the factory and during the transport in order to guarantee an optimal result in your crop.

### Amblyseius-System

*Amblyseius cucumeris: the pollen-eating predatory mite*

#### What is Amblyseius cucumeris?

- Predatory mite for the control of thrips larvae and spider mite
- Very mobile
- Also feeds on pollen, enabling it to survive without prey
- Can be introduced preventatively in pollen-bearing crops

#### In which crops is Amblyseius cucumeris effective?

- Great results (also preventative) in pepper and eggplant
- Equally effective in ornamental crops such as gerbera, rose and a wide range of potted plants



### Andersoni-System

*Amblyseius andersoni: polyphagous predatory mite*

#### What is Amblyseius andersoni?

- Known under different names: Typhlodromus (Amblyseius) potentillae or Amblyseius (Euseius) andersoni
- Polyphagous predatory mite
- Omnivorous
- Feeds on all sorts of harmful mites such as spider mites, gall mites and russet mites
- Also feeds on thrips, pollen, honeydew and fungi

#### What are the benefits of Amblyseius andersoni?

- Effective at cold and higher temperatures
- Can survive in absence of prey

#### In which crops is Amblyseius andersoni effective?

- Ornamental crops
- Fruit crops
- Several tree species

### Andersoni Breeding System

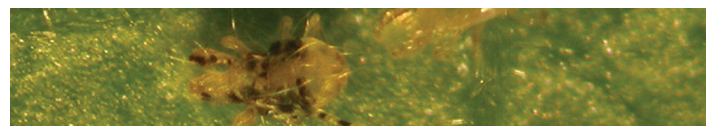
Biobest supplies Andersoni-Breeding-System in sachets with food for the predatory mite. This causes them to multiply in the sachets, ensuring a continuous walking out of the predatory mites over multiple weeks.

**Packaging:** 250 sachets/box

**Contents:** 250 predatory mites/sachet

**Carrier:** bran with factitious prey

**Walking out:** approx 2.000 predatory mites over a 6 week period





## Aphidius-System

### *Aphidius colemani*

The parasitic wasp *Aphidius colemani* is very efficient for the biological control of small-sized aphids, especially the cotton aphid and the green peach aphid. It parasitizes adults and nymphs. Parasitism is easy to recognize by the golden-brown colored mummies. A single female can lay hundreds of eggs during the first 4 days of her adult life. *A. colemani* has good searching ability and is able to find aphid colonies from a long distance by detecting "alarm signals" produced by an infected plant or the smell of honeydew secreted by its hosts. The presence of a parasitic wasp can cause panic in an aphid colony, aphids often let themselves fall to the ground where they usually die. *Aphidius colemani* is applicable on all greenhouse crops on which suitable hosts occur.

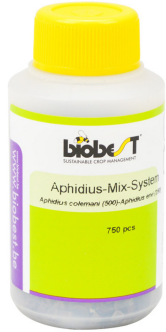


## Aphidius-Mix-System

### *Aphidius colemani* / *Aphidius ervi*

Because aphid colonies often consist of several aphid species, it can be necessary to introduce both parasitic wasps *Aphidius ervi* and *Aphidius colemani*. Both parasitic wasps are look-alikes, but differ in size. *A. ervi* is twice as large as *A. colemani*. *A. colemani* is very efficient for the biological control of the cotton aphid and the green peach aphid and *A. ervi* attacks the potato aphid and foxglove aphid.

Both *Aphidius* species parasitize adults and nymphs. Parasitized aphids turn into golden-brown colored mummies. A single *Aphidius* female can lay hundreds of eggs during the first 4 days of her adult life. They are good searchers, able to find aphid colonies from a long distance by detecting "alarm signals" produced by an infected plant or the smell of honeydew secreted by its hosts.



## Atheta-System

### *Atheta coriaria*

All mobile stages of the predatory beetle *Atheta coriaria* are extremely voracious and efficient predators of some of the most troublesome soil insect pests such as larvae of fungus gnats, shore flies as well as the pupae of thrips. The adults have a large flight range, ensuring a good dispersion throughout a greenhouse.

*Atheta coriaria* is applicable in several ornamental, vegetable and arboricultural crops and on different media, such as compost, coconut fiber or rock wool.

*Atheta coriaria* are the only beneficial insect we sell that travels the full strata of soil. Will devour soft bodied insects that grow around root systems as well as at the top of soil.



## Californicus-System

### *Amblyseius californicus*: effective and robust beneficial against spider mite

#### What is *Amblyseius (Neoseiulus) californicus*?

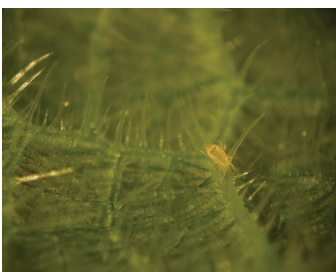
- Effective predatory mite against different species of spider mite
- Translucent with a brown-orange spot in the shape of an X on its back
- Feeds on all stages of the two-spotted spider mite
- Controls pest mites such as broad mite and cyclamen mite

#### What are the benefits of *Amblyseius californicus*?

- It has a strong preference for the greenhouse spider mite, but also feeds on other mites, thrips and pollen
- It is most effective at low prey density
- *Amblyseius californicus* is less sensitive to warm and dry conditions
- It also tolerates cold conditions
- This predatory mite can survive on pollen and in the absence of prey can even survive without food for a while

#### In which crops is *Amblyseius californicus* effective?

- Vegetable crops
- Fruit crops such as berries
- Ornamental crops





## Californicus-Breeding-System

*Amblyseius californicus*: effective and robust beneficial against spider mite

The predatory mite *Amblyseius* (= *Neoseiulus*) *californicus* feeds on all stages of the two-spotted spider mite. It also attacks the broad mite and the cyclamen mite. It is able to consume about 5 prey items per day and can survive on pollen even in absence of prey. This predatory mite is active in a large temperature range and tolerates lower humidity. *Amblyseius californicus* is widely used for pest mite control in several vegetables, berries, fruits and ornamental crops. This predatory mite is also supplied in sachets, in which they multiply themselves. This ensures a continuous walking out of the predatory mite over multiple weeks.



## Encarsia-System

*Encarsia formosa*

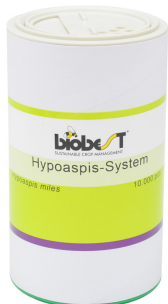
The parasitic wasp *Encarsia formosa* is applied on a wide range of greenhouse vegetable and ornamental crops to control greenhouse whiteflies. In crops with zero pest tolerance is an overkill approach recommended. *Encarsia formosa* lays its eggs preferably in 3rd and early 4th instar larvae. Parasitized larvae turn black and are therefore easily recognized. Parasitism of the tobacco whitefly is also possible. In this case, parasitized larvae turn brownish. During her life, a female *Encarsia formosa* parasitizes approximately 250 greenhouse whitefly larvae (maximum of 450) and kills another 30 (maximum of 70) by host-feeding.

## Eretmix-System

*Encarsia formosa* / *Eretmocerus eremicus*

In conditions of fluctuating temperatures or when the tobacco and greenhouse whitefly occur together, a combined release of the whitefly parasitoids *Encarsia formosa* and *Eretmocerus eremicus* is recommended. Both parasitic wasps are closely related. *E. eremicus* is lemon-colored and *E. formosa* is black.

The main advantages of a combined release are *E. formosa*'s quick population growth and *E. eremicus*'s high temperature tolerance and effectiveness on both whitefly species. Eretmix-System is applicable in protected vegetable and ornamental crops.



## Hypoaspis-System

*Stratiolaelaps scimitus* (*Hypoaspis miles*): robust predatory mite

**What is *Stratiolaelaps scimitus* (*Hypoaspis miles*)?**

- Brown and robust predatory mite
- Inhabits the top layer of soil
- Feeds on harmful soil dwelling pests
- Survives without prey for several weeks
- *Stratiolaelaps scimitus* eats larvae of fungus gnats and those of shore flies
- Furthermore, it also eats thrips pupae

**How does it control pests?**

- Both nymphs and adults feed on harmful soil dwelling pests
- Each mite can eat up to 5 prey a day
- *Stratiolaelaps scimitus* contributes to reducing thrips pupae
- In the absence of prey they survive on algae and plant debris

**In which crops is *Stratiolaelaps scimitus* effective?**

- Open field crops
- Potted plant crops
- Container crops

**Packaging:** 500 ml cardboard tube

**Contents:** 10.000 predatory mites

**Carrier:** mix of vermiculite, peat and factitious prey







## Swirskii-System

*Amblyseius swirskii*: voracious predatory mite that devours whitefly and thrips

### What is Amblyseius (Typhlodromips) swirskii?

- Voracious predatory mite
- The adults are beige and the nymphs creamy white
- Efficient biological control of pests such as whitefly and thrips

### What are the benefits of Amblyseius swirskii?

- This predatory mite eats young thrips larvae
- Also devours eggs and larvae of both greenhouse and tobacco whitefly
- A generalist feeder, among other things it eats small pests such as spider mites and tarsonemid mites
- It easily adapts to high temperatures
- Amblyseius swirskii also feeds on pollen

### How does it control pests?

- Amblyseius swirskii devours around 5 to 10 prey a day
- Amblyseius (Typhlodromips) swirskii needs a satisfactory food source for fast population growth
- Use of alternative food source Nutrimite™ is recommended during the first few months for optimal population growth

### In which crops is Amblyseius (Typhlodromips) swirskii effective?

- Vegetable crops such as pepper, cucumber and eggplant
- Various ornamental crops



## Swirskii-Breeding-System

*Amblyseius swirskii*

Thanks to its polyphagous character and its adaptability to high temperatures, this gluttonous predatory mite plays an important role in biological crop protection.

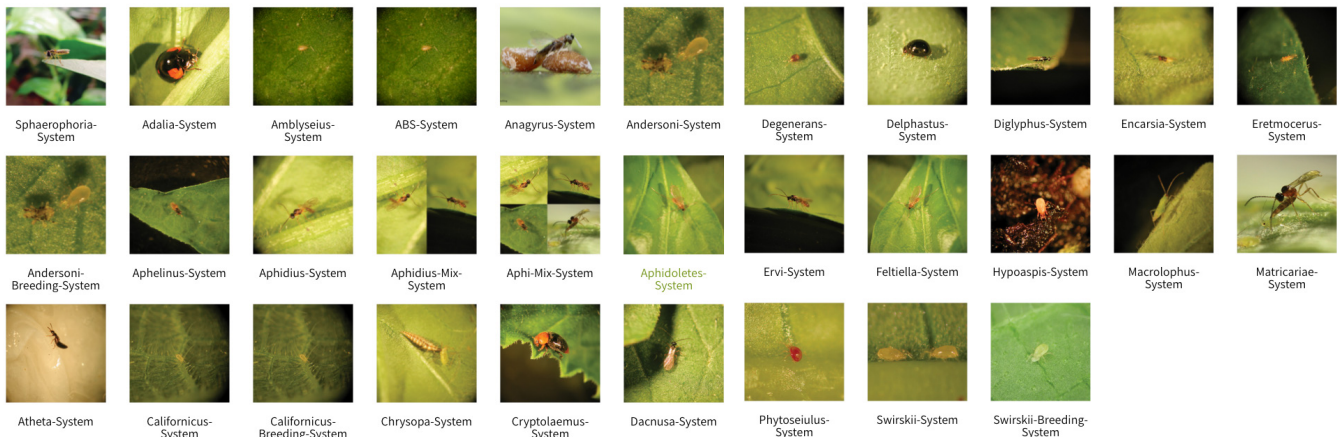
Amblyseius (Typhlodromips) swirskii needs a satisfactory food source for a fast growth of its population and prefers mainly young stages of whitefly and thrips.

It consumes around 5-10 preys a day. A. swirskii also feeds on pollen and in a certain degree on spider mites and tarsonemid mites.

This gluttonous predator is widely used as a key beneficial in sweet pepper, cucumber, eggplant, strawberry and some ornamental crops.

## Other Systems Available

For a full range of Biobest beneficial insects and mites, contact ACW Supply or visit [www.biobestgroup.com](http://www.biobestgroup.com)





### Mini Hive

This hive consists of a small sized colony of the bumblebee species *Bombus terrestris*. At delivery it contains more than 30 workers. Its pollination activity lasts 3 to 4 weeks. Mini Hives are equipped with a care-free nutrition system with a Biogluc bottle of 1.1 L.

#### Relevant Crops:

- Tomato
- Cherry Tomato
- Sweet Pepper
- Hot Pepper

*Local regulations may impose restrictions on the use of this product. Contact your authorities or contact your Biobest consultant.*



### Standard Hive

This hive consists of a standard sized colony of the bumblebee species *Bombus terrestris*.

At delivery it contains more than 80 workers. Its pollination activity lasts 6 to 8 weeks.

#### Standard hives are equipped with:

- an extendable ventilation system
- a care-free nutrition system with a Biogluc bottle of 1.4 L
- an optional pollen tray

#### Relevant Crops:

- Tomato
- Cherry Tomato
- Sweet Pepper
- Hot Pepper
- Melon / Watermelon
- Eggplant (aubergine)
- Cucumber / Gherkin

#### Note:

Please check with local authorities if the products are allowed to be used.

*Local regulations may impose restrictions on the use of this product. Contact your authorities or contact your Biobest consultant.*





PACE 49 Inc. is a full service company specializing in cleaners and an EPA registered disinfectant, fungicide, algacide, and bactericide for the Horticulture, Agriculture, Livestock, and Turf Grass industries – KleenGrow™. With continual testing against and combining with industry standard fungicides, we are finding more and more ways for KleenGrow™ to reduce fungicide costs while increasing disease control.

**KleenGrow™ Broad Spectrum Disinfectant**

KleenGrow™ is a broad spectrum pesticide and disinfectant that kills on contact and has a 2-4 week residual. It is a unique quaternary ammonium chloride formulation that is environmentally friendly yet very effective in safely controlling diseases on plants as well as hard surfaces at very low rates.

KleenGrow™ can be applied bi-weekly as a manual drench or spray through chemigation on most plant material from propagation to finish. It is the cornerstone to the PACE ACBD System® – “Always Clean Before Disinfecting”, yet remains an economical way to disinfect irrigation lines, greenhouse structures, benches, trays, coolers, and more.



**Horti-Klor™ Heavy-duty, chlorinated cleaner for the greenhouse industry**

Horti-Klor™ has been formulated for cleaning and sanitizing throughout the food plant and grower industries.

Horti-Klor™ is an active, high-foaming chlorinated detergent designed to dislodge stubborn material such as algae, whitewash, oily residues and dirt. The emulsion will not break during rinsing, thus preventing oily residues which contribute to bacterial growth and off-odors.

**Areas of Use:**

Storage Sheds, Packing Lines, Coolers, Trucks, Pots, Plug Trays, Ground Cover, Shade Cloth, Disposal Areas, Lunchrooms, Washrooms, Beds, Totes, Equipment, etc.

**Strip-It PRO™ Heavy-duty, Acid-based, Phosphate-free Cleaner**

STRIP-IT™ is a specialty formula that quickly penetrates and removes algae, fertilizer build-up, calcium, hard water deposits, and greenhouse whitewash coatings without brushing.

STRIP-IT™ removes all common soils found in and around greenhouses, irrigation systems, grower structures, and is especially useful during crop rotation.

**Application:**

Inside: 15L STRIP-IT per acre of glass.  
Outside: 20L STRIP-IT per acre of glass.



**UpTake™ Wetting Agent and Surfactant**

UpTake™ is a biodegradable soil adjuvant and wetting agent designed for turf grass, trees, nursery stock, field crops, greenhouses and orchards. UpTake™ increases penetration of water through soil, resulting in improved root growth and plant quality. Improved performance of pesticides, insecticides, miticides, fertilizers, and herbicides can be achieved with UpTake™ when used at a tank mix, through sprinkler systems, or drip irrigation.

Use UpTake to control and prevent hydrophobic soil conditions when irrigating with sprinkler or sprayer or overhead watering. Apply at rates between 0.125-0.50 oz. per gallon of water once every 2 weeks



Growth Products has been a pioneer in environmentally-friendly bio-innovations, technically-advanced liquid fertilizers, micronutrients and biological control products designed for agriculture, horticulture and turf care for over 30 years. The Growth Products' focus is the development and manufacturing of highly effective products that have soft-chemistries and bio-enhancements for better crop health and yield.

### Citric Acid Liquid 50% Organic

Growth Products' pH Reducer is a safe, organic citric acid solution. This is welcome news for golf course superintendents, farmers, and nursery owners in environmentally sensitive areas and/or those who would like to stay away from corrosive acids when it comes time to adjust a soil or water pH problem.

Growth Products pH Reducer is gentle on turf. With its non-burning formula, you won't run into problems like root pruning, which is quite common when using harsher acids such as phosphoric and sulfuric acid.



### SAR Activator

SAR Activator SA is a high quality solution of Salicylic Acid formulation that can be used on citrus, vegetables, tropical fruits, nut trees, and stone fruits. SAR Activator SA enhance plant hardness, and resistance to environmental conditions and attack. Citrus and tomatoes sprayed with SA are known to have reduced damage from insects and pathogens. SAR Activator SA can be mixed with standard N-P-K fertilizers. Apply SAR Activator SA as a foliar spray or through fertigation systems. SAR Activator SA can be mixed with most fungicides, insecticides and other liquid fertilizers. Do NOT mix concentrates together.

### TKO Phosphite 0-29-26

TKO Phosphite 0-29-26 is a clear liquid solution that is good for your plants and good for the environment. Unlike other forms of phosphorus, phosphite is highly water soluble and can be quickly absorbed through a plant's leaves, branches, and roots. Once inside a plant, it is extremely mobile and works to rapidly correct deficiencies, enhance plant and root development, and improve crop resistance to disease. An environmentally-friendly product, it prevents excessive build-up of soil phosphorus and prevents problems with ground-water contamination.

TKO Phosphite can be used on crops such as citrus, avocados, strawberries, vegetables and all deciduous and non-deciduous fruits. It can be used as a foliar spray, as a soil application, or through irrigation water. Applied at critical growth stages in a plant's life cycle, it ensures superior root formation, seedling growth, bud formation, blossom and fruit set. It improves both yield and quality of crops, and boosts a plant's resistance to stress and disease.



### Companion Fungicide

Companion® Biological Fungicide is a safe, 100 percent natural biological fungicide that both prevents and controls a broad spectrum of root and foliar diseases such as root rot, blight, wilt, bottom- and stem-rot, and bacterial leaf spot (Phytophthora, Pythium, Fusarium, Rhizoctonia, Sclerotinia and Xanthomonas campestris).

A patented biological fungicide unlike any other product on the market, Companion contains the naturally occurring beneficial bacterium known as Bacillus subtilis GB03. The GB03 isolate combats disease pathogens through multiple modes of action. It quickly colonizes a plant's root hairs and literally crowds out disease producing microbes in the soil; it produces antibiotics that disrupt the cell wall formation of pathogens, causing the pathogens to desiccate and die; and it creates a beneficial Induced Systemic Resistance (ISR) whereby plants' own natural immune system is stimulated to better resist diseases. Used alone, in combination with, or in rotation with chemical fungicides, Companion can serve a crucial role in a grower's disease resistance management program.

Companion's GB03 also acts a Plant Growth Promoting Rhizobacterium (PGPR) and bio-Enhancer. It naturally encourages plant growth and produces better rooting, branching and flowering on plants.



The photo above, left, shows the roots of Neanthe Bella Palms before using Companion. After using Companion Biological Fungicide, right, the palms form clean white roots with better root formation.



MGK® develops and markets a broad portfolio of branded insect control products based primarily on natural pyrethrum and synthetic pyrethroids. In addition, we develop custom solutions for insecticide manufacturers around the world that meet a wide variety of insect control requirements. All of our branded products and custom solutions provide effective solutions with a lower environmental impact.

### Pyganic 1.4 / Pyganic 5.0

PyGanic® Crop Protection EC 1.4 / 5.0 delivers consistent, reliable knockdown and controls some of the most-damaging and pervasive insects on your crops. Organically-compliant, PyGanic controls a broad-spectrum of insects on virtually every type of crop and requires no pre-harvest interval or restrictions on the number of applications that can be made per year.

PyGanic comes in easy-to-use gallon and quart containers that enable the grower flexibility at the time of application according to pest pressure.

PyGanic is compatible with IPM, farm safety and Worker Protection Standards (WPS) given its user friendly toxicity profile. It is ideal for Organic growers who need insecticide options for hard-to-control insects. PyGanic is made with botanically-derived active ingredients; it has a lower impact on the environment with a high impact on pests.



### Azera

MGK's Azera Gardening is an ideal solution for hard-to-kill insects. It is made from two distinctly powerful active ingredients from botanical sources that knock down the pests and kill them either by contact or by ingestion. It kills both hard-bodied and soft-bodied insects, from aphids to beetles.

Azera Gardening can be used on ornamentals, leafy vegetables, fruit and nut trees, cereal grains, forage, grasses and more. Azera Gardening is made with botanically-derived active ingredients that are very effective at killing garden pests.

### Tersus

Tersus® Insecticide delivers rapid results for growers who want a fast, consistent on-contact knockdown and control on virtually any crop for the day of the harvest. With a very short re-entry interval, Tersus has a standardized maximum residue level (MRL) across the largest export markets, so it is well suited for a high value export crops. The active ingredient in Tersus is pyrethrins, a botanical insecticide that is non-persistent in the environment, and controls a broad-spectrum of insects such as aphids, thrips, lygus, leafhoppers and many more. Tersus is concentrated and packaged in convenient quart and gallon containers for larger field or orchard applications. One gallon treats up to 28 acres.



### Evergreen 5% Organic

EverGreen Pyrethrum Concentrate is a broad spectrum insecticide that can be used in OMRI listed organic production.

- Pyrethrins degrade quickly in sunlight
- Delivers fast, effective control of insects including Ants, Cockroaches, and Stored Product Pests
- Contains unsynthesized pyrethrum – Botanical Insecticide derived from chrysanthemum flower
- Food and Non-Food Areas of Food Handling & Processing facilities
- OMRI Certified for organic use



### Evergreen 60-6

EverGreen® Pro 60-6 uses pyrethrins synergized with piperonyl butoxide (PBO) allowing more insecticide to reach the target site in the insect's nervous system.

MGK's highest concentrated Pyrethrin formulation

- 1:10 Pyrethrin to PBO ratio
- Delivers fast, effective insect control
- Labeled for on- and over-animal application



Fine Americas, Inc. focuses on the development, manufacture and marketing of plant growth regulators (PGRs) for the agricultural, greenhouse ornamental and landscape markets and are a recognized center of excellence for PGR technology. We strive to improve our technology to meet the exacting demands of today's quality-conscious growers in more than 40 countries worldwide.



### Abide (Generic for A-Rest)

Code: **FAAB1QT**

Abide is a very flexible plant growth regulator for use on ornamental plants grown in containers in nurseries, greenhouses and shadehouses, including bedding plants, bedding plant plugs, bulbs, Easter lilies, poinsettias, chrysanthemums and foliage plants. Abide offers applicator flexibility via foliar spray or soil drench. Use of Abide effectively reduces internode elongation, generating more compact and sturdier plants. Abide also promotes darker green foliage, thereby enhancing their marketability. Abide contains 0.0264% ancymidol.

Size: 1 qt

### Citadel (Generic for Cycocel 85 WSG)

Code: **FACIT1G**

Citadel generates effective PGR activity on a broad variety of containerized crops such as poinsettia, geraniums, azaleas, hibiscus, bedding plants and other herbaceous and woody ornamental crops. Citadel reduces plant height by limiting internode elongation through inhibition of gibberellins biosynthesis. Citadel is available in gallon and 30 gallon containers. Citadel can be applied alone or tank-mixed with other plant growth regulators such as Dazide 85 WSG (85% daminozide) to produce high quality plants. On certain crops, a tank mix of Dazide 85 WSG and Citadel can provide a synergistic effect that results in enhanced activity.

Size: 1 gal

### Concise (Generic for Sumagic)

Code: **FACON1G**

Concise is an effective growth retardant for use on a broad variety of ornamentals. Concise reduces plant height by limiting internode elongation, producing more desirable, compact and marketable plants. Concise has been shown to increase the quality of plants even in the absence of noticeable growth reduction. These desirable qualities include darker colors, higher chlorophyll content, greater leaf thickness, stronger stems, increased water retention and, at times, increased flower number and size.

Size: 1 gal

### Configure

Code: **FACON.5G**

Configure™, the only pure 6-BA plant growth regulator, is an effective product for use on ornamental crops to increase lateral branching and promote flowering in certain ornamental species. In addition, applications of configure may reduce the overall height of the plant resulting in more compact and marketable plants. Configure is also labeled for use on containerized annual and perennial flowering and foliage crops and tropical plants.

Size: 0.5 gal

### Dazide (B Nine SP)

Code: **FAD851P, FAD855P**

Dazide 85 WSG is formulated in an easy-to-use, high-quality water soluble granule. Dazide 85 WSG offers effective growth control for a wide range of ornamental plants, including chrysanthemums, gardenias, azaleas, hydrangeas, and poinsettias, as well as petunias, marigolds, and other flowering and foliage plant species. Dazide 85 WSG helps growers manage plant growth and development to ensure plants are more compact, stronger, and better able to cope with transportation or transplanting, thus meeting increasingly stringent customer needs.

Size: 1 lb, 5 lb

### Florgibb 4L (Generic For ProGibb T&O)

Code: **FAFG1G**

Florgib contains gibberellic acid (GA3). Gibberellins are compounds that are naturally produced within plants to stimulate growth. Fine has developed a unique fermentation method of naturally producing GA3 and markets the compound for use in ornamental plants as florgib. Florgib has a huge variety of useful applications including elongation of peduncles in Pompom Chrysanthemums, earlier flowering and increased yield in Statice, and accelerated plant growth with increased number of flowering stems in Gypsophila.

Offering flexibility of use, florgib is formulated as a liquid and is easy to handle and measure.

Size: 1 gal

### Fresco (Generic for Fascination)

Code: **FAFRE1Q**

Fresco is approved for reduction of leaf yellowing in Easter lily, LA hybrid lily and Asiatic lily. Fine is undertaking work to extend the fresco label to cover other ornamental plant species.

Size: 1 qt

### Piccolo (Generic For B-Nine)

Code: **FAPIC1Q, FAPIC1G, FAPIC2.5G**

Piccolo offers control of height and radius across a wide range of ornamental crops. Piccolo enhances the quality of bedding plants, flowering and foliage plants, bulb crops, perennials, and woody ornamentals, making them easier to market and more profitable to produce. Piccolo has given excellent results with leading growers and has been proven in extensive university research trials.

Size: 1 qt, 1 gal, 2.5 gal

### Piccolo 10XC

Code: **FAPIC10XC1Q**

10X the strength of Piccolo. Piccolo 10 XC's excellent results have been proven in leading university research trials. It may be applied by spray or drench, and is labeled for use on bedding plants/plugs, flowering and foliage plants, bulb crops, perennials and woody ornamentals.

Size: 1 qt



# CHEMICAL ACCESSORIES

American Clay Works carries many products used for protection in application of chemicals, including gloves, tyvek suits and respirators. If you have any questions regarding your protection when applying a product please refer to the chemical's label or call American Clay.

## Respirators (Replacement Cartridges Also Available)

### 3M™ Half Facepiece Respirator Assemblies 6000 Series

3M™ Half Facepiece Respirator Assemblies 6000 Series, with 3M™ Particulate Filters 3M2091 have a lightweight, well-balanced design that contributes to greater worker comfort. This respirator is NIOSH approved for environments containing certain oil and non-oil based particles. For use in a variety of applications including welding, brazing, torch cutting, metal pouring, soldering, and exposure to lead, asbestos, cadmium, arsenic, and MDA for concentrations up to 10 times the Permissible Exposure Limit (PEL).



### Survivair Premiere S-Series Half Mask Respirator

The Survivair Premier S-Series is a cartridge silicone half mask that is available in three sizes. One of the easiest breathing respirators of its type, the Survivair Premier incorporates a perspiration port to reduce facepiece slippage and skin irritation. Its low breathing resistance allows for maximum comfort. The Survivair Premier includes a soft sealing flange with rolled edges for increased wearer comfort.

### 3M™ Full Facepiece 6000 Series Respirators, Reusable

3M™ Full Facepiece Respirators 6000 Series, Resuable bayonet style provides low-maintenance and offers a wide field of vision. These NIOSH approved respirators meet all the requirements of ANSI Z87.1-2003 for high impact (Z87). Lightweight, well-balanced with silicone face seal enhances comfort and durability. Supplied with a resealable storage bag. For use with all 3M™ Particulate Filters and Gas/Vapor Cartridges. This full facepiece reusable respirator offers lightweight comfort and ease of use.



## Gloves

### Safety Zone Black Nitrile Gloves

Nitrile Gloves are the perfect compromise between latex and vinyl. Nitrile is made from an allergy safe compound that feels a lot like latex but it's much stronger and is more comfortable to wear. Nitrile is perfect for demanding applications, especially cleaning and dishwashing.

**Sizes:** Small, Medium, Large, XL

### High Risk Latex Gloves

High quality Latex Gloves for use in high risk applications. Textured Surface, Low Protein and Contact Sensitizers, Double Chlorinated, Tapered, Beaded Cuff. Box of 50

**Sizes:** Medium, Large

## Other Safety Items

### Clear Splash Goggle with Fogless Lens

**Code:** FS19052559

### Moldex Dust Mask: Disposable, Non-Toxic

**Code:** SEDMM - 50 per box

### Standard Dust Mask

**Code:** SEDMM

## Protective Clothing

### General Tyvek Work Coveralls

The ideal garment where low cost, effective barrier protection is needed ... covers worker completely with DuPont Tyvek material. Lakeland coveralls are full-cut for comfort and ease of movement. A full length zipper and shirt collar are combined with double seam reinforced construction for durability, economy and practicality. Unique design eliminates top shoulder seams for greater protection from falling dirt or harmful particles.

**Code:** SETW (White), SETY (Yellow)



### NexGen Protective Coveralls

Unique one piece jumpsuit construction offers maximum protection for head to foot coverage. Attached hood and boots are fully cut to allow ease of movement under most working situations. Elastic in hood gathers tightly for positive closure while elastic wrist makes for a complete protective barrier.

**Code:** Hood and Boot Coveralls

- FS190882147 (XL)
- FS190882146 (L)
- FS190882145 (M)
- FS190882144 (S)





# Pesticide Application Signs and Charts

**DANGER PELIGRO  
PESTICIDES PESTICIDAS**

**KEEP OUT  
NO ENTRE**

PRODUCT NAME: \_\_\_\_\_ AREA TREATED: \_\_\_\_\_ ACTIVE INGREDIENT: \_\_\_\_\_

APPLICATION \_\_\_\_\_ MONTHS/DAYS/TIME \_\_\_\_\_ SALES REG-60787X  
Month/Day/Time \_\_\_\_\_

**DANGER PELIGRO  
PESTICIDES PESTICIDAS**

**AREA UNDER FUMIGATION  
AREA UNDER FUMIGUEISHUN**

**KEEP OUT  
NO ENTRE**

FUMIGANT IN USE \_\_\_\_\_ APPLICATION \_\_\_\_\_ APPLICATOR'S NAME \_\_\_\_\_  
Month/Day/Time \_\_\_\_\_ ADDRESS \_\_\_\_\_  
PHONE NUMBER \_\_\_\_\_

**DANGER PELIGRO  
PESTICIDES PESTICIDAS**

**KEEP OUT  
NO ENTRE**

PRODUCT NAME \_\_\_\_\_ AREA TREATED \_\_\_\_\_ APPLICATION \_\_\_\_\_  
Month/Day/Time \_\_\_\_\_

**DANGER**

**PESTICIDE  
STORAGE  
AREA**

**DANGER**

**PESTICIDE  
STORAGE  
FIRE WILL CAUSE  
TOXIC FUMES**

**DANGER**

**CHEMICAL  
STORAGE**

**WARNING**

**DO NOT DRINK,  
WASH, OR  
PREPARE FOOD  
FROM WATER OF  
THIS OUTLET**

### Protect Yourself from Pesticides / Protejese de los Pesticidas

**IN AN EMERGENCY: EN UNA EMERGENCIA:**

Get medical help immediately. Siempre obtenga asistencia medica con urgencia.

If you need an ambulance, tell them where you are. Si usted necesita una ambulancia, dígales dónde se encuentran.

If you have questions or concerns, call the pesticide regulatory agency. Si tiene preguntas o inquietudes, llame a la agencia reguladora de pesticidas.

**FOR MEDICAL TREATMENT INFORMATION, CALL THE POISON CONTROL CENTER: 1-800-222-1222. PARA INFORMACION SOBRE TRATAMIENTO MEDICO, LLAME AL CENTRO DE CONTROL DE ENFERMEDADES: 1-800-222-1222.**

**Wash your work clothes before wearing them again. Wash separately from other clothes. Lave su ropa de trabajo antes de volver a usarla. Lave separada de su ropa.**

**Get medical help as soon as possible if you think you've been exposed to a pesticide. Consulte a un médico tan pronto como sea posible si cree que ha estado expuesto a un pesticida.**

**Wash your hands before you eat, drink, or change your clothes. Lave sus manos antes de comer, beber o cambiar su ropa.**

**Wash your face before you eat, drink, or change your clothes. Lave su cara antes de comer, beber o cambiar su ropa.**

**Wash your body and hair with soap or shampoo right after work, then put on clean clothes. Lávese el cuerpo y el cabello con jabón o champú inmediatamente después del trabajo; luego póngase ropa limpia.**

**Wash your hands before you eat, drink, or change your clothes. Lave sus manos antes de comer, beber o cambiar su ropa.**

**Wash your face before you eat, drink, or change your clothes. Lave su cara antes de comer, beber o cambiar su ropa.**

**Wash your body and hair with soap or shampoo right after work, then put on clean clothes. Lávese el cuerpo y el cabello con jabón o champú inmediatamente después del trabajo; luego póngase ropa limpia.**

**Wash your work clothes before wearing them again. Wash separately from other clothes. Lave su ropa de trabajo antes de volver a usarla. Lave separada de su ropa.**

**Get medical help as soon as possible if you think you've been exposed to a pesticide. Consulte a un médico tan pronto como sea posible si cree que ha estado expuesto a un pesticida.**

¿Preguntas sobre pesticidas? Call 1-800-858-7378 (National Pesticide Information Center)  
¿Tiene preguntas sobre pesticidas? Llame al 1-800-858-7378 (Centro Nacional de Información de Pesticidas)

Pesticide Application Record for \_\_\_\_\_  
(greenhouse, nursery, farm unit, company name, etc.)

Year: Date (Mo/Da) Time	Crop or Commodity	Location or Greenhouse	# of units Sq. Ft. or Acres	EPA Registration Numbers	Active Ingredient Brand or Product Name	Total Amount (oz., lb., qt., gal., indicator)	PEE Requirements Workers/ Workers/ Applicators	REI Duration (Hours)	REI Expiration (Mo/Da/Time)

**Nearest Emergency Medical Facility is located at:** \_\_\_\_\_

**Emergency Phone Numbers**

**Name** \_\_\_\_\_ **Poison Control Center** \_\_\_\_\_

**Street** \_\_\_\_\_ **Spill Response DNR** \_\_\_\_\_

**City** \_\_\_\_\_ **Sheriff/Police** \_\_\_\_\_

**Phone** \_\_\_\_\_ **Fire Department** \_\_\_\_\_

The EPA has new requirements for posting areas treated with pesticides. The items required are as follows:

- (1) Federal Worker Protection Standard in two languages
- (2) Pesticide Safety Poster
- (3) Combination emergency information sign
- (4) Pesticide Application posting sign
- (5) Pesticide Application record tablet



# SOIL MIXES



## BRANDS CARRIED

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**PRO-MIX**<sup>®</sup>  
NOTHING SAYS GROWING MEDIA BETTER™

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p. 2-3  
[toplastics.com](http://toplastics.com)

***lambert***

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p. 4-5  
[landmarkplastics.com](http://landmarkplastics.com)

**RIOCOCO**<sup>®</sup>  
WORLDWIDE  
A GROWING MEDIUM LIKE NO OTHER

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[nurserysupplies.com](http://nurserysupplies.com)

**FLUENTES  
HYDROKORRELS**

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Contact ACW Supply for  
more information

 **gro|dan**<sup>®</sup>

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[grodan101.com](http://grodan101.com)

**GROW-TECH**<sup>LLC</sup>   
Advanced Rooting Substrate Technology

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[grow-tech.com](http://grow-tech.com)



# PRO-MIX®

NOTHING SAYS GROWING MEDIA BETTER™

Introduced in 1968, PRO-MIX has always provided commercial growers and consumers with cutting-edge and value-added growing media products. PRO-MIX growing media are enhanced with high-performance active ingredients and are considered a reference in the market, as they represent innovative and unique solutions.

## HP Biofungicide™ + Mycorrhizae™

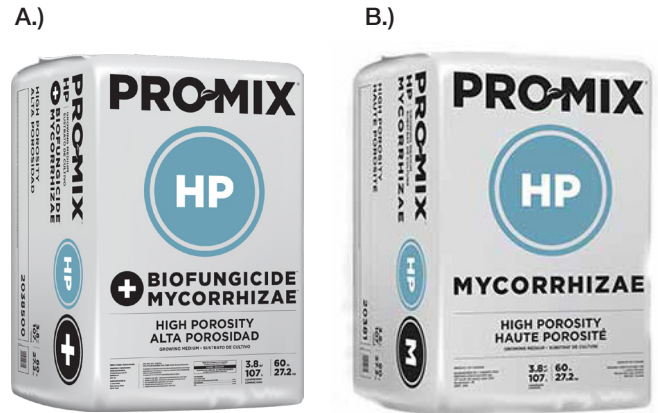
With its high perlite content, Pro-Mix HP provides a great growing environment to growers looking for a significant drainage capacity, increased air porosity and lower water retention. The added benefit of fibrous peat moss and coarse perlite makes this formulation ideal for growers who require a superior-quality product adapted to their needs for watering flexibility and crop seasonality.

### Ingredients:

- Canadian sphagnum peat moss (65-75%)
- Perlite - horticulture grade
- Dolomitic and calcitic limestone (ph adjuster)
- Wetting agent

### Active Ingredients:

- A.) Biofungicide + Mycorrhizae
- B.) Mycorrhizae



## BX Biofungicide™ + Mycorrhizae™

Pro-Mix BX is a solution for growers seeking to benefit from both the nutrient retention ability of vermiculite and a perlite content providing limited but proper drainage capacities. Combined with high-quality fibrous peat moss, this formulation is ideal for growers looking for a general purpose medium which creates a well-balanced growing environment.

**Ingredients:**

- Canadian sphagnum peat moss (75-85%)
- Perlite - horticulture grade
- Vermiculite - horticultural grade
- Dolomitic and calcitic limestone (ph adjuster)
- Wetting agent

**Active Ingredients:**

- A.) Biofungicide + Mycorrhizae
- B.) Mycorrhizae

## HP-CC Biofungicide™ + Mycorrhizae™

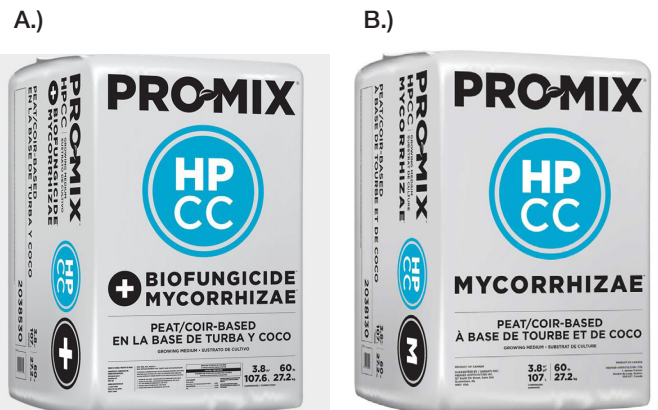
When seeking the ideal balance between air porosity, drainage capacity and water retention, Pro-Mix HPCC is the solution growers select. With unique chunk coir reducing soil compaction and carefully selected peat moss, this formulation provides qualities promoting growth and offering a delicate, well-calculated control over the root zone. Pro-Mix HPCC provides growers what they need to optimize the quality of their hanging baskets, large containers and long-term crops.

### Ingredients:

- Canadian sphagnum peat moss (65-75%)
- Perlite - horticulture grade
- Vermiculite - horticultural grade
- Dolomitic and calcitic limestone (ph adjuster)
- Wetting agent

### Active Ingredients:

- A.) Biofungicide + Mycorrhizae
- B.) Mycorrhizae





### MP Organik Multi-Purpose

Pro-Mix MP Mycorrhizae Organik provides the perfect solution for growers in need of an organic-certified, growing medium that delivers well balanced air/water qualities. OMRI-Listed, this formulation is ideal for a variety of growing uses and is designed to meet crop requirements for certified organic growers. Enriched with mycorrhizae, this growing medium will not only improve the overall growth and yields of your crops, it will also increase your plants' resistance to environmental stresses.

#### Ingredients:

- Canadian sphagnum peat moss (75-85%)
- Coir - horticulture grade
- Perlite - horticultural grade
- Calcitic limestone (ph adjuster)
- Organic Wetting agent

#### Active Ingredients:

- Mycorrhizae

### LP15 Multi-Purpose

Designed to provide growing environment that offers good water retention with fibrous peat moss and a low perlite formulation Pro-Mix LP15 offers growers the needed flexibility for multiple purposes. Combined with cutting-edge active ingredients, Pro-Mix LP 15 will deliver on your expectations.

#### Ingredients:

- Canadian sphagnum peat moss (80-90%)
- Perlite - horticulture grade
- Dolomitic and calcitic limestone (ph adjuster)
- Wetting agent

#### Active Ingredients:

- Mycorrhizae



### PGX Plug and Germination

Balance and precision are essential in horticulture, even more so at the beginning of a crop. Pro-Mix PGX is formulated with vermiculite for increased buffering capacity and nutrient retention at the early stages of plant growth. This carefully developed formulation optimizes plant growth by creating a root zone environment that is well adapted for plug production and seed germination applications.

#### Ingredients:

- Canadian sphagnum peat moss - short fiber (75-85%)
- Vermiculite - plug grade
- Dolomitic and calcitic limestone (ph adjuster)
- Wetting agent

#### Active Ingredients:

- Biofungicide
- Biostimulant





Quality has always been a priority at Lambert, that's why the company owns a complete quality control laboratory. The laboratory staff developed standards and procedures to make sure that every cubic foot of product that leaves our yard complies with our standards. Quality control procedures are also developed regularly to increase the quality of our products.



### LM-6 High Porosity Mix

Lambert LM-6 High Porosity Mix is a high porosity growing media with long-fibered Canadian sphagnum peat moss including the addition of large peat chunks and coarse perlite. LM-6 is designed for crops that require higher air capacity and drainage.

#### Ingredients:

- Canadian sphagnum peat moss (75 - 85%)
- Dolomitic limestone
- Horticultural perlite
- Wetting agent
- Calcitic limestone
- Starter charge



### LM-6 Organic High Porosity Mix

Lambert LM-6 Organic Professional High Porosity Mix is a combination of premium long-fibered Canadian sphagnum peat moss, chunks and coarse perlite with an organic wetting agent and an extended-release organic fertilizer. Ideal for plants that require higher aeration and drainage.

#### Ingredients:

- Canadian sphagnum peat moss (75 - 85%)
- Dolomite limestone
- Horticultural perlite
- Organic wetting agent
- Calcitic limestone
- Organic slow release fertilizer

### LM-18 Germination Mix

LM-18 Germination Mix is a composition of fine Canadian sphagnum peat moss and fine perlite. LM-18 is a media formulated to promote effective and uniform germination. The added amount of perlite contributes to the germination of specific seeds that require more air space providing better drainage.

#### Ingredients:

- Canadian sphagnum peat moss (80 - 90 %)
- Dolomitic limestone
- Horticultural perlite
- Wetting agent
- Calcitic limestone
- Starter charge



### LM-8 Bark Mix

Lambert LM-8 Bark Mix is a blend of Canadian sphagnum peat moss with aged bark and perlite. This mix is great for use in large container, perennials, hardy mums and nursery crops. This bark media is ideal for growers who wish to have a media that provides weight for container grown crops that tend to be top-heavy.

#### Ingredients:

- Canadian sphagnum peat moss (60 - 70%)
- Dolomitic limestone
- Aged bark
- Wetting agent
- Horticultural perlite
- Starter charge



### LM-8+15V Mix (Custom)

Lambert LM-8 Bark Mix with %15 added vermiculite is a blend of Canadian sphagnum peat moss with aged bark and perlite. This mix is great for use in large container, perennials, hardy mums and nursery crops. This bark media is ideal for growers who wish to have a media that provides weight for container grown crops that tend to be top-heavy.

#### Ingredients:

- Canadian sphagnum peat moss (80 - 90%)
- Horticultural perlite
- Horticultural vermiculite
- Calcitic limestone
- Dolomite limestone
- Wetting agent
- Starter charge



### GFM PC-25 High Porosity Peat-Coir Mix

Lambert The Green Formula PC-25 High Porosity Peat & Coir Mix is designed to procure excellent ratio of drainage, air porosity and water retention.

#### Ingredients:

- Canadian sphagnum peat moss (60-70%)
- Coconut coir
- Horticultural perlite
- Calcitic limestone
- Dolomitic limestone
- Wetting agent
- Starter charge





# APPROXIMATELY HOW MUCH SOIL YOU WILL NEED TO FILL:

## Round Pots

Container	Per cubic foot	3.8 cu.ft. compressed bale	2.8 cubic foot bag
2 1/4'	260	1853	780
3"	121	862	363
4"	45	320	135
5"	25	175	75
6"	15	104	45
8"	5.5	40	16
10"	3	20	9
12"	2	14	6



## Square Pots

Container	Per cubic foot	3.8 cu.ft. compressed bale	2.8 cubic foot bag
2 1/2"	356	2494	1068
3"	127	904	381
4"	58	414	174



## Hanging Baskets

Container	Per cubic foot	3.8 cu.ft. compressed bale	2.8 cubic foot bag
6"	20	142	60
8"	10	71	30
10"	5	35	15



## Azalea Pots

Container	Per cubic foot	3.8 cu.ft. compressed bale	2.8 cubic foot bag
4"	63	448	189
5"	31	220	93
6"	18	128	54
6 1/2"	15	106	45
8"	7	50	21
10"	4	28	12



## Geranium Pots

Container	Per cubic foot	3.8 cu.ft. compressed bale	2.8 cubic foot bag
4 1/2"	40	285	120



## Flats

Container	Per cubic foot	3.8 cu.ft. compressed bale	2.8 cubic foot bag
11" x 21" 804	5.9	41	18
11" x 21" 806	7.1	50	21
11" x 21" 1203	5.9	41	18
11" x 21" 1204	6.7	48	20
11" x 15" 601	5.9	41	18
12" x 14" 806	7.7	55	23



## Plug Trays

Container	Per cubic foot	3.8 cu.ft. compressed bale	2.8 cubic foot bag
52 Square	9	64	-
72 Square	14.2	100	-
128 Round	9.7	69	-
200 Round	19	135	-
288 Square	16.5	118	-
392 Round	18.3	130	-
406 Square	16.5	118	-
512 Round	15	106	-



## Coverage Estimates

Thickness	4 Cu. Ft. Perlite	6 Cu. Ft. Can. Peat (12 Cu. Ft. Loose)	1 Cubic Yard Peat Mulches, Topsoil, etc.
2 inches	24 Sq. Ft.	72 Sq. Ft.	72 Sq. Ft.
1 inch	48 Sq. Ft.	144 Sq. Ft.	144 Sq. Ft.
1/2 inch	96 Sq. Ft.	288 Sq. Ft.	288 Sq. Ft.
1/4 inch	192 Sq. Ft.	576 Sq. Ft.	576 Sq. Ft.





Since the company's inception, Riococo has been manufacturing world-class coir products from the facilities in Sri Lanka. Their use of the highest quality raw materials, which were produced by nature and combined with state-of-the-art technologies and equipment, enables them to produce the highest quality coir fiber products.

### Riococo ACW Urban-C Coir Block

Riococo ACW Supply Urban-C Coir Block with a 5-8mm chunk size in a retail package (with a handle!) is a great alternative to peat moss. It's an organic soilless coconut fiber growing medium with superior water holding capacity when compared to other grow media. Riococo Unwrapped Coir Block is free from seeds and pathogens and pre-washed for low EC and balanced pH.



### ACW Urban-A Mix

Fafard has recently released an organic line of soil. American Clay stocks FOF20 and FOF30 and other mixes are available in pallet quantity by request. These mixes meet all National Organic Program guidelines. Urban-A Mix, exclusively designed by and produced for American Clay is a blend of Peat Moss, Coco Coir, Large Perlite, an Organic Wetting Agent, Mycorrhizae, and Vermicompost. This is a great general purpose mix. FOF20 contains Canadian Sphagnum Peat Moss, Perdue Organic Fertilizer, Perlite and Vermiculite. It is a great propagation mix for seeds, cutting and liners. FOF30 contains Canadian Sphagnum Peat Moss, Aged Pine Bark, Perdue Organic Fertilizer, Perlite and Vermiculite. It is a great general purpose mix for greenhouse-grown plants in containers or hanging baskets.

Urban-A Mix - ACWUMA2.8CF FOF20 - FFOF203CF  
FOF30 - FFOF303CF





### Coir Starter Block

Grow starters are also one of our newest inventions in the propagation product family. Using our newest Riococo grow starters, propagators are able to propagate faster and produce healthy plants organically. Excellent water holding and equal distribution of water throughout the block ensures optimum management of the air and water balance and the equal distribution of nutrient and fertilizer solutions. Riococo R101 Coir Block is made from 100% coir fiber compressed disc packed in a biodegradable Riococo cellulosic paper.



### Starter Plug

Specifically designed for sowing seeds, Starter Plugs provide you with a sterile and porous substrate that aids in rapid and even root development.

### Riococo Growbags

Riococo Growbags are a blend of 15 mm sized coco peat and crushed coco chips. The selected raw materials are blended and compressed into 8:1 ratio to make slabs for the required size. Riococo Growbags are packed in UV stabilize co-extruded bags. (400 Growbag also available)

#### 100 Growbag



Material Blend: 100% Natural Coir Mix  
Water Holding Capacity: 7.32 L/Kg  
Air Filled Porosity: 5.2%

#### 200 Growbag



Material Blend: 80% Natural Coir Mix / 20% Coir Chips  
Water Holding Capacity: 6.73 L/Kg  
Air Filled Porosity: 10.2%

#### 300 Growbag



Material Blend: 30% Natural Coir Mix / 70% Coir Chips  
Water Holding Capacity: 5.42 L/Kg  
Air Filled Porosity: 25.06%

### Riococo Unwrapped Coir Block Coco Peat

Riococo Unwrapped Coir Block Coco Peat with a 5-8mm chunk size is a great alternative to peat moss. It's an organic soilless coconut fiber growing medium with superior water holding capacity when compared to other grow media. Riococo Unwrapped Coir Block is free from seeds and pathogens and pre-washed for low EC and balanced pH.



### Riococo Unwrapped 10C Chunky Coir Block

Riococo Unwrapped 10C Chunky Coir Block Coco Peat with a larger chunk size than other blocks. The 10C Chunky Coir Block is a great alternative to peat moss. It's an organic soilless coconut fiber growing medium with superior water holding capacity when compared to other grow media. Riococo Unwrapped Coir Block is free from seeds and pathogens and pre-washed for low EC and balanced pH.

\*Coco Coir bricks consist of the coarse coir fibers extracted from the husk on the outer shell of a coconut. Coconut coir bricks are increasingly used as a growing medium by commercial greenhouse operations. Because of its superior water holding capacity, excellent air space and drainage, coco coir bricks are useful in modern hydroponics and as a soil amendment for potted plants, containers and gardens.







# FLUENTES HYDROKORRELS

## Hydrokorrels

Hydrokorrel expanded clay is a popular medium for both aquaponic and hydroponic gardening around the world. Hydrokorrels are a light weight aggregate made by heating clay in a rotary kiln. The yielding gases expand the clay by thousands of small bubbles forming during heating producing a honeycomb structure perfect for encouraging root growth.

- Strong pebble structure doesn't crush
- Records high and low points for both temperature and humidity



- Made of 100% natural clay. Pebbles are of uniform, round shape.
- Inert, pH-neutral, clean and decorative.
- For Orchids: porous structure provides excellent aeration and acts as a water reservoir.
- The size of the pebbles is perfect for medium to large Cattleyas and Laelias.
- For Hydroponics: Ensures good root aeration and prevents rotting, excess acidity and soil pests.





Stone wool is made from a natural, volcanic rock called basalt. Grodan substrates are clean and are free of pollutants and plant diseases. They also enable recirculation of water and nutrients, so there is no waste of input materials.



### A-OK Starter Plug Sheets

Grodan Rockwool Propagation Plugs offer a unique and effective solution to your germination needs. Specifically designed for sowing seeds, Rockwool Propagation Plugs provide you with a sterile and porous substrate that aids in rapid and even root development. The plugs can be either manually transplanted or used in automated transplant machines.

### Grodan Block Delta

Stonewool Cubes are one of our most popular items. Suitable for a wide range of plants, Stonewool Cubes are effective in growing anything from tomatoes, lettuce, flowers and even aquatic plants. The blocks are suitable for producing vegetable and ornamental crop production Grodan Delta blocks feature grooves at the base to promote excellent drainage. These growing blocks are used for direct sowing or can receive rooted propagation cubes such as the AO 36/40 plugs into the hole sizes provided by the blocks. The blocks can then be placed on top of a slab to provide for a larger growing volume.



### Grotop Expert Sheets

Grotop Expert is based on the Next Generation technology. With its unique hydrophilic fibres and vertical fibre structure – resulting in a high resaturation capacity - the slab is perfectly suited for Precision Growing. Grotop Expert represents the ultimate solution for growers seeking a substrate with a wide control range, a rapid start to cultivation and exceptional vigour throughout the entire cultivation period.

### Therm-O-Rock Perlite

Therm-O-Rock West expertly processes perlite to fit your specific needs. The products shown here are but a sample of diverse products we have been producing for horticultural, industrial, and building applications. Our service and product availability make us the perlite industry leader in the Western region of the United States. If you are a commercial grower, or are in the construction business, we may be of great service.

This lightweight Perlite provides superb aeration and moisture retention when mixed in with other soil materials. Perlite supports root growth and retains moisture, air, and nutrients which it releases as plants grow. Also suitable for hydroponic greenhouses. Can be made very low-density as required. Easy handling, loading & unloading.



### Vermiculite

Therm-O-Rock West understands the specific needs of various industrial users of vermiculite. Our vermiculite products are processed with your particular application in mind.

This lightweight vermiculite provides superb aeration and moisture retention when mixed in with peat, bark, or compost. Also makes excellent fertilizer. Vermiculite soil supports root structure and stimulates fast root growth. Can be used by itself to aid soil-less hydroponic greenhouses.





At Grow-Tech, Inc., we pride ourselves on finding solutions to grower problems through the design and manufacture of superior growing media. Our products are designed to reduce labor, boost root development and increase germination rates. Whether you grow poinsettias or microgreens, in a greenhouse, a warehouse or a storage container, Grow-Tech has a product to meet your needs.

**Flexi-Plugs**

FlexiPlugs are created by blending the highest quality peat with other organics and a foam binder. The result is a stabilized propagation medium that promotes faster rooting for cuttings while providing the consistent moisture needed for seed germination. Our pH balanced plug also contains micronutrients and active biologicals so it has all the elements needed to promote healthy root growth and young plant vigor.



**Flexi-Trays**

FlexiTrays consist of stabilized plugs made of peat, other organics and a foam binder. The plugs' consistent moisture control and optimal aeration reduce rooting times which means a faster crop turnaround for you. FlexiTrays provide a ready-to-use system that increases the efficiency of your greenhouse by allowing for earlier transplanting, better crop timing and full automation. FlexiTrays are easy to use and one of our best selling products for starting plants from flowers and vegetables to hemp and marijuana. ACW Supply stocks 50 cell Landmark True Flexi-Plugs and other sizes seasonally. Full pallets available by special order of any size available.

Count	Cell Type	Brand	Tray Width	Tray Length	Cell Width	Cell Height	Cell Volume	Dibble Size
50	Square	Dongjin Plastics	11"/28cm	21"/53cm	1.85"/4.7cm	1.97"/5cm	3.71"/60.88cm	4mm
50	Square	Landmark Plastics	10"/25cm	20"/50.8cm	1.45"/3.68cm	1.63"/4.14cm	13"/33.2cm	4mm, Triple
50	Round	TO Plastics	10"/28cm	21"/53cm	1.94"/4.9cm	1.75"/4.45cm	26.77"/68cm	4mm
60	Strip	Dillen	10"/25cm	20"/51cm	n/a	3"/7.62cm	n/a	4mm
72	Strip	Dillen	10"/25cm	20"/51cm	n/a	2.13"/5.41cm	n/a	4mm
72	Square	Dongjin Plastics	11"/28cm	21"/53cm	1.57"/3.99cm	1.97"/5.0cm	2.38"/39cm	4mm
72	Round	East Jordan Plastics	10"/25cm	20"/51cm	1.25"/3.18cm	2"/5.08cm	6.5"/16.4cm	6mm, TC
72	Square	Landmark Plastics	11"/28cm	21"/53cm	1.25"/3.18cm	1.75"/4.45cm	11"/28cm	4mm
72	Round	TO Plastics	11"/28cm	21"/53cm	1.65"/4.19cm	1.58"/4.01cm	17.7"/45cm	6mm
78	Strip	Blackmore	11"/28cm	21"/53cm	1.38" x 1.38"	1.875"/4.76cm	11"/28cm	4mm
78	Strip	TO Plastics	10"/25cm	20"/51cm	1.13"/2.87cm	2"/5.08cm	8.9"/22.61cm	4mm, Double
84	Hex	Landmark Plastics	11"/28cm	21"/53cm	1.13" x 1.31"	1.63"/4.14cm	8.66"/22cm	4mm
98	Square	Dongjin Plastics	11"/28cm	21"/53cm	1.5"/3.81cm	1.97"/5.0cm	2.44"/40cm	4mm
98	Round	East Jordan Plastics	10"/25cm	20"/51cm	1.31"/3.33cm	1.63"/4.14cm	10.5"/26.5cm	6mm
105	Square	Dongjin Plastics	11"/28cm	21"/53cm	1.33"/1.38cm	1.97"/5.0cm	1.80"/29.4cm	4mm
105	Hex	Landmark Plastics	11"/28cm	21"/53cm	1.25" x 1.38"	1.5"/5.08cm	9"/23cm	4mm
128	Square	Dongjin Plastics	11"/28cm	24"/53cm	1.2"/3.05cm	1.97"/5.0cm	1.41"/23.07cm	6mm
128	Square	TO Plastics	11"/28cm	21"/53cm	1.19"/3.02cm	1.97"/5.0cm	9.88"/25cm	6mm
144	Round	Dillen	10"/25cm	20"/51cm	0.94"/2.39cm	2"/5.08cm	9.7"/24.6cm	4mm
162	Square	TO Plastics	11"/28cm	21"/53cm	1.07"/2.72cm	1.75"/4.45cm	6.7"/17cm	6mm
200	Square	East Jordan Plastics	10"/25cm	20"/51cm	0.875"/2.22cm	1.25"/3.18cm	3.8"/9.67cm	6mm
200	Square	ITML	11"/28cm	24"/53cm	0.91"/2.31cm	1.75"/4.45cm	4.8"/12.3cm	4mm
288	Square	Landmark Plastics	11"/28cm	24"/53cm	0.75"/1.91cm	1"/2.54cm	2.8"/7.2cm	SEED
384	Strip	Blackmore	11"/28cm	24"/53cm	.56" x .63"	1"/2.54cm	1.65"/4.2cm	SEED

**BioStrate**

This lightweight biobased textile is designed for the hydroponic production of microgreens, salad greens and wheatgrass. BioStrate absorbs and retains water while providing an optimal environment for dense healthy root development. Our blend of biopolymers and natural fibers is designed to manage water efficiently for optimal growth in a variety of hydroponic systems.



# FERTILIZERS



## BRANDS CARRIED

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p. 2-9  
[kimatec.com](http://kimatec.com)



p. 10-13  
[plantmarvel.com](http://plantmarvel.com)



p. 14  
[icl-sf.com](http://icl-sf.com)



p. 15  
[icl-sf.com](http://icl-sf.com)



p. 22  
[plant-success.com](http://plant-success.com)



p. 24  
[microbelifehydro.com](http://microbelifehydro.com)

In 2010, American Clay Works & Supply Company became the Master Distributor, for the United States and Canada, of Kimatec Fertilizers. Kimatec has 20 years experience in producing nutrients in Almeria, Spain. For many years they were focused on greenhouse food production fertilizers, but have branched out into field agriculture, turf and ornamental, and other applications, as their different fertilization methods have been accepted by other growing communities at large. They currently sell to over 20 countries, and we are proud to work with them in introducing their fertilizers in the US. We are currently stocking 13 products from Kimatec, many organic amino formulations, as well as combination conventional/amino formulations. We plan to introduce more Kimatec products in the coming years, as well as build on the lines we are already carrying.

Please visit [www.kimatec.com](http://www.kimatec.com) for trial data and more information.



# ESPARTAN

## 2.70-3.03-2.60 Organic Fertilizer derived from Fermented Sugar Beet Molassas

*(2-3-2 in States Requiring Whole Number NPK Labeling.)*

Espartan is a product formulated from organic matter obtained from selected vegetables. The product stimulates the development of the green organs and fruits of plants. The product is rich in organic matter (33.50%) and Fulvic Acids (19.00) obtained from the concentration of vegetable remains. It also contributes with the essential elements; Nitrogen at 2.70%, Phosphorous at 3.03%, and Potassium at 2.60%. The color of the product is black/brown, typical of organic matters. The density is 1.19 g/cc and the pH is 5.80-5.90. Espartan is a product that can to be applied to the soil to take advantage of the effects of the organic matter and fulvic acid. The product improves soil texture and structure, favours the plant metabolism, increases the development of the roots, increases microbial life and assists in nutrient absorption. It can also be used in hydroponic application as an organic NPK fertilizer amendment. **NOP Organic Certified!**

Like all Kimatec Products, Espartan is extremely soluble and will not leave a biofilm buildup in irrigation systems. Espartan is one of our best selling Kimatec Fertilizers. With its low application rate (1.5 ml to 20 ml per gallon depending on application type) a bottle goes a long way. This is a great product to introduce you to the power of Kimatec's fertilizer line.

Available in 1 Liter, 5 Liter, 20 Liter and 1000 Liter.





# BOMBARDIER

## 8-0-0 Organic Fertilizer derived from Fermented Sugar Beet Molassas and Fermented Glucose Syrup

Bombardier is a liquid fertilizer obtained from the concentration of selected vegetables. Bombardier has a double action; to the soil structure and to the crop quality. Due to its origin, it presents a high concentration of Nitrogen, amino acids, organic matter, polysaccharides, and fulvic acid.

Bombardier, the flagship product of Kimitec, is very effective in irrigation, hydroponic and foliar application.

### Benefits To Plants:

- High plant stimulation
- Better metabolic and enzymatic activity
- Higher cellular division
- Improves the resistance to stress conditions
- Increases productivity and crop quality
- Promotes good plant growth
- Increases fruit size and quality
- Improves Rooting System
- Increased Degrees Brix

### Benefits To Soil:

- Improves soil structure
- Improves soil aeration
- Better nutrient absorption
- Improves humidity retention
- Allows for reduced use of other fertilizers



# BOMBARDIER sugar

## 8-0-0 for increasing Degrees Brix

Bombardier Sugar is a new generation of fertilizer with an exclusive formulation. Bombardier Sugar increases the synthesis of saccharose. Through this we obtain a direct effect in ripening and increasing in Degrees Brix (°Bx). As a consequence, the size and quality of fruit is improved as well as the sugar content of the fruit. The product is based on fundamentals and benefits of Aminoacids, Fulvic Acids, Organic Matter and oligosaccharides (short chain saccharides that are easily absorbed by the plant) inside the fruit.

Available in 1 Liter, 5 Liter, 20 Liter and 1000 Liter.





# CAOS

## 10.5% Liquid Calcium Chloride chelated with Lignosulphate

*Allowed as Foliar Spray in Organic Agriculture*

Caos is a product with a high concentration of calcium that prevents and corrects the possible calcium deficiencies in all kinds of crops. Its special formulation with lignosulphonated compounds allows improved calcium absorption. Allowed in organic production as a foliar spray to treat physiological disorder. The symptomatology of calcium deficiency is diverse and varies from simple foliar chlorosis to the necrosis of the fruit. In general, it affects the organs of the plant that have higher calcium demands: meristematic apices and fruit.

Caos is one of the highest rated Kimitec Products by our growers for use in both fruits and vegetables to eliminate blossom end rot, as well as in flower production to increase calcium without having to use a calcium nitrate product when nitrogen is not wanted or needed.

Available in 1 Liter, 5 Liter, 20 Liter and 1000 Liter.



# TUNDAMIX

Tundamix is a Microelement Liquid Concentrate containing 5 essential elements complexed with Lignosulphate that can be used in any crop: vegetables, orchard, fruit trees, ornamental, flowers, nurseries, lawn, etc.

### Tundamix Liquid Microelements:

- Copper (Cu) ..... 0.1 % – 0.1% Chelated Copper
- Iron (Fe)..... 2.5 % – 2.5% Chelated Iron
- Manganese (Mn) ..... 1.4 % – 1.4% Chelated Manganese
- Molybdenum (Mo)..... 0.1 % – 0.1% Chelated Molybdenum
- Zinc (Zn) ..... 0.2 % – 0.2% Chelated Zinc

Tundamix is allowed in organic agriculture according to the requirements of: USDA/NOP Final Rule (USA) 205.601(j)(4) and 205.601(j)(6).

Available in 1 Liter, 5 Liter, 20 Liter and 1000 Liter.



# KATON

## 0-0-26 EDTA Chelated Liquid Potassium

Katon is a liquid solution, with a high potassium concentration, indicated for the prevention and correction of potassium deficiencies and favoring the ripening of fruits in the final stages of the crop. Since it is formulated with a high potassium concentration, and because it is a completely soluble solution, Katon provides the necessary potassium at times of maximum demand in a manner that is easily assimilated by crops. Katon is chelated with EDTA granting easy assimilation into the plant.

Available in 1 Liter, 5 Liter, 20 Liter and 1000 Liter.



# AMIFORT

## 5-0-0 26% Free Amino Acids

Amifort is a liquid fertilizer composed of L-Amino Acids (26%) proceeding from double enzymatic hydrolysis. Amifort is completely water soluble and suitable for use in hydroponics and works very well as a foliar application. Derived through double enzymatic hydrolysis of plant proteins.

Amifort increases the effect of pesticides by chelating the pesticides with Amino Acids, so it is recommended to reduce pesticide dose, especially with products containing sulfur.

Available in 1 Liter, 5 Liter, 20 Liter and 1000 Liter.



# RHYZO

## 7.5-39-0 Non-Hormonal Rooting

(7-39-0 available for States requiring whole number NPK)

Rhyzo is a new type of Root enhancing additive and bio-nutrient. Rhyzo is a new formulation and an alternative to products based on hormones. The high rooting power is based on the specific aminogram, b vitamins and high Phosphorous concentration. Rhyzo is particularly indicated for encouraging rooting, and activating the root system, thus increasing the growth potential for all type of crops (horticultural crops, fruit crops, citrus and olive trees, nurseries, etc) during the initial stages of the vegetative cycle and is also useful throughout your crop cycle to reclaim roots that have been damaged by stress.

Available in 1 Kg.



# RHYZO

## O<sup>2</sup> Natural

## Rhyzo O2 Natural 32% amino acids

Rhyzo O2 Natural is an alternative rooting product that is not based on hormones. Rhyzo O2 Natural gets its superior rooting power based on the specific aminogram. Kimitec Rhyzo O2 Natural is particularly indicated for encouraging rooting, activating the root system and stimulating the growth of all types of crops (horticultural crops, fruit crops, citrus and olive trees, nurseries, etc.) during the initial stages of the vegetative cycle.

**Kimitec Rhyzo O2 Natural is especially recommended in the following situations:**

- Initial stages of crop cycles
- Transplanting periods
- Adverse climate conditions
- Cold periods - winter
- Critical periods such as flowering, ripening, flower setting
- Plant starts
- Critical periods: flowering, start of ripening, development of the fruit, etc

Available in 1 KG







# RHYZO FL

Kimatec Rhyzo FL Liquid is a new type of root enhancing additive and bio-nutrient. Rhyzo is a new formulation and an alternative to products based on hormones. The high rooting power is based on the specific aminogram, b vitamins and high Phosphorous concentration. Kimatec Rhyzo is particularly indicated for encouraging rooting, and activating the root system, thus increasing the growth potential for all type of crops (horticultural crops, fruit crops, citrus and olive trees, nurseries, etc) during the initial stages of the vegetative cycle.

**Recommended For:**

- Initial stages of the crop
- Transplanting periods
- Adverse climatic conditions, most of all during cold periods
- Stress conditions (hydric, heat, root loss, etc.)
- Winter
- Critical periods: flowering, start of ripening, development of the fruit, etc

**Kimatec Rhyzo FL Liquid contains:**

Total Nitrogen.....	1.0%
Zinc.....	0.35%
Free amino acids.....	6.0%
Glucose.....	4.0%



# BIOALGAX

**Guaranteed Analysis**

Soluble Potash (K2O) .....4.5 %  
*Derived from: seaweed extract of Ascophyllum nodosum*

**Contains Non-Plant Food Ingredients:**

Seaweed Extact ..... 22.0 %

Product composed of seaweed extracts 100% of the variety Ascophyllum Nodosum. Bio Algax is an active source of cytoquinines, auxines and giberelines that besides, reinforces the endurance against stress, improving the contribution of macro and micro nutrients, increasing the systematic endurance of the plants and increasing also the pesticides action.

- Aspect: Black Liquid
- pH: 10
- Specific Gravity: 1.13 gr/cc

**Available in 1 Liter, 5 Liter**





# batallón

### Guaranteed Analysis

Soluble Nitrogen (N)..... 1.0%  
*1% Water Soluble Nitrogen*

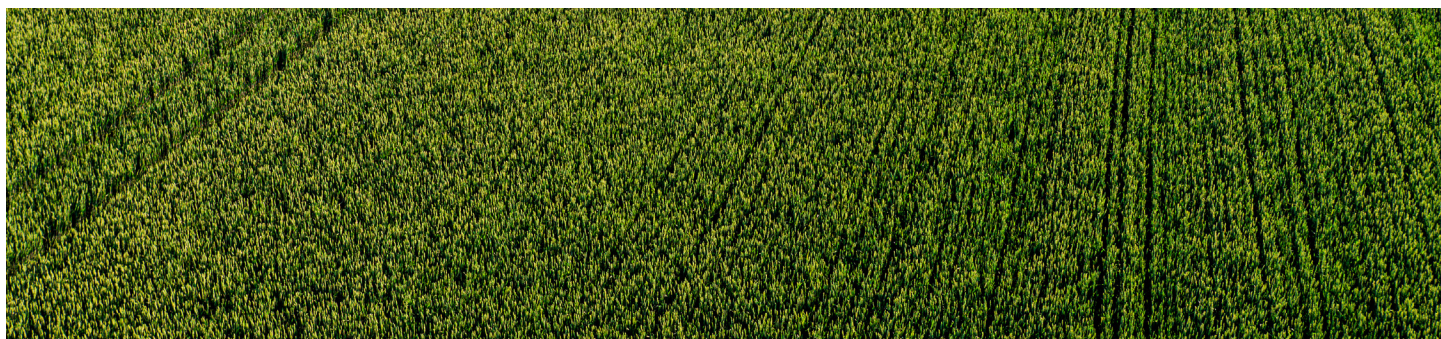
Soluble Potash (K<sub>2</sub>O)..... 5.0 %  
*Derived from: fermented vegetables*

### Contains Non-Plant Food Ingredients:

Fulvic Acids ..... 37.6 %

Kimitec Batallon with 37.6% fulvic acids is a unique product that is used to feed the microbes in your grow media. During the process the microbes will break down the nutrients in the grow media and make them super available to the plants. When using Kimitec Batallon consider lowering the overall nutrient strength to avoid burning the plants.

Available in 1 Liter, 5 Liter, 20 Liter



# NUTRIPHOS COMPLEX

### Guaranteed Analysis

Total Nitrogen (N)..... 6.0 %  
 Ureic Nitrogen.....3.0%  
 Ammoniacal Nitrogen .....1.5 %  
 Nitric Nitrogen .....1.5 %  
 Available Phosphate (P<sub>2</sub>O<sub>5</sub>)..... 21.0 %  
*Derived from: Phosphoric acid, Ammonium Nitrate, Urea, Lignosulphonate and vitamins*

### Contains Non-Plant Food Ingredients:

Total Organic Matter..... 16.0 %  
 Fulvic Acids..... 16.0 %  
 Vitamins..... 0.01 %  
 Inositol.....0.01 %

### Features:

- High Phosphorous assimilation
- Total Phosphorous bioavailability
- Fast assimilation
- Reduces phosphorous locked in soil
- More quantity of fruits with high quality

### Benefits:

- Fast Rooting.
- Blooming.
- More Fruit Set.
- More Energy and vigor
- More QUALITY in fruits and seeds.
- Vegetative Development

Liquid fertilizer with high content in Phosphorous. Fulvic Acids have a complexing effect of nutrients that are locked on the soil and non available for the plant, and makes them available. The product also contains Vitamin bioactivators that helps the sap circulation into the plant, mainly in cold conditions.

Available in 1 Liter, 5 Liter



## Observations When Applying Amino Acids to Plants:

### Trophic effect:

Free amino acids, when quickly metabolized, give birth to biologically active substances. They also invigorate and stimulate vegetation.

### Hormonal effect:

Free amino acids stimulate the formation of:

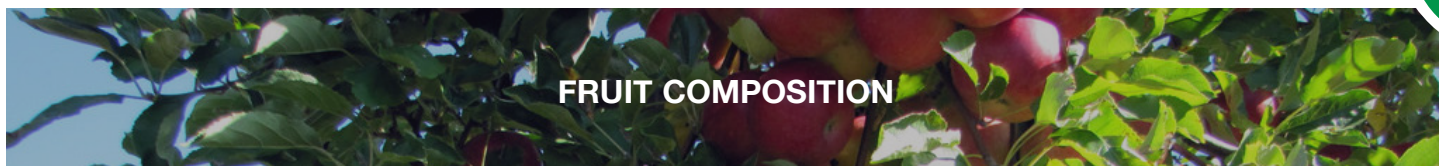
- Chlorophyll
- Indole-3-Acetic acid
- Vitamins
- Various enzymatic systems
- Greater vitamin content in fruits.

### Trophic + Hormonal effect

- Flowering is stimulated
- Better fruit setting
- Higher precociousness, size and coloration of fruits
- Greater sugar richness

### Amino Acid Effect on Plants:

L-Aspartic Acid:	Promotes Germination
L-Glutamic Acid:	Chelation Stimulates Growth Promotes Germination Favours the Opening of the Stomas Improves Pollination
L-Arginine Acid:	Cold Resistance Induces Synthesis of Flower and Fruit Related Hormones
L-Cysteine Acid:	Chelation
L-Phenylalanine:	Promotes Germination
L-Glycine:	Chelation
L-Histidine:	Chelation Improves Ripening of Fruits
L-Alanine:	Cold Resistance Chlorophyll Synthesis Stimulation Improves Quality of Fruits
L-Lysine:	Chelation Chlorophyll Synthesis Stimulation Promotes Germination Improves Pollination
L-Methionine:	Promotes Germination Stimulates Ethylene Production Improves Pollination Precursor of Growth Factors
L-Proline:	Anti-Stress Action Favors Fertility of Pollen
L-Serine:	Chelation
L-Threonine	Promotes Germination
L-Tryptophan:	Auxin Precursor
L-Valine:	Auxin Precursor Improves Quality of Fruits



## FRUIT COMPOSITION

The chemical composition of fruits depends on the type of fruit and its ripeness, but, in general terms, the main compounds of fruits are:

**1. Water:** More than 80% and 90% of the composition of the fruit is water. Due to this high percentage of water and aromas of its composition, the fruit is very refreshing.

**2. Carbohydrates:** Between 5% and 18% of the fruit is made up of carbohydrates. Content can vary from 20% in the banana to 5% in melon, watermelon and strawberries. Other fruits have an average of 10%. The carbohydrate content can vary according to species and also according to the harvest time. Carbohydrates are usually simple sugars like fructose, sucrose and glucose, easily digested and quickly absorbed.

Some aminoacids take part in Gluconeogenesis. Gluconeogenesis (abbreviated GNG) is a metabolic pathway that results in the generation of glucose from non-carbohydrate carbon substrates such as lactate, glycerol, and glucogenic amino acids. Some others (alanine, glutamic acid and aspartic acid) take part in the tricarboxylic acid cycle (TCA cycle), the Krebs cycle.

**3. Fiber:** Approximately 2% of the fruit is dietary fiber. The main components of fiber in fruit are pectin and hemicellulose. The fruit skin is the part with the highest concentration of fiber. Soluble fiber or gelling such as pectin form viscous mixtures with water. The viscosity depends on the fruit from which it comes and the degree of maturation. Pectins, therefore, play an important role in the consistency of the fruit.

**4. Vitamins:** carotenes, vitamin C, vitamins of group B. According to the level of vitamins there are two large groups of fruits:

- High content in vitamin C: containing 50 mg/100, such as citrus, melons, strawberries and kiwi.
- High content in vitamin A: rich in carotenoids, such as apricots, peaches and plums.

Amino acids are essential in the natural synthesis of many vitamins. These vitamins are essential in the metabolism and for growth and for the proper functioning of the body.

**5. Minerals:** fruits are rich in potassium, magnesium, iron and calcium. The most important mineral is Potassium. Fruit with high content in Potassium are stone fruits such as apricot, cherry, plum, peach, etc..

**6. Calories:** The calorific value is determined by its sugar concentration, varying between 30-80 Kcal/100g. As an exception we have avocado fruit that contains 16% lipids and coconut that ends up having up to 60%. But most fruits are low calorie with respect to its weight.

**7. Protein:** Protein and fat, nitrogen compounds such as proteins and lipids are scarce in the edible part of fruits, while important in the seeds of some of them

Proteins (also known as polypeptides) are organic compounds made of amino acids arranged in a linear chain and folded into a globular form. The amino acids in a polymer are joined together by the peptide bonds between the carboxyl and amino groups of adjacent amino acid residues. The nutritive value of protein depends on the essential amino acid content.

**8. Flavors and Pigments:** Fruit contains acid and other aromatic substances that (together with high water content) make them refreshing. The flavor of each fruit is determined by their content of acids, sugars and other flavorings. Malic acid predominates in apples, citric acid in oranges, lemons and tangerines and tartaric acid in grapes.

Aminoacids are involved in carbohydrates synthesis (sugars, energy reserves), so they can enhance the flavor of the fruit. There are amino acids involved indirectly (through ethylene biosynthesis) and directly in the process of ripening of fruits and vegetables, so they can improve the color of the fruit.



Established in 1922, Plant Marvel pioneered and popularized the use of water soluble fertilizers. They introduced their original 12-31-14 General Purpose Hi Phosphate formulation over 90 years ago helping to fuel the growth of soilless growing and hydroponics. Some years later they've incorporated soluble forms of minor and trace elements into their expanding line of soluble N-P-K fertilizers.



### General Purpose Triple Twenty 20-20-20

General Purpose 20-20-20 provides over 60% nutrient value in a 1-1-1 ratio which makes it suitable for general use in a wide variety of growing situations. It is widely used on containerized stock in the nursery industry and for greenhouse crops such as foliage plants and bedding plants. For institutional and general landscape maintenance, it is ideal because it works well on turf, trees or shrubs as well as blooming plants and can be used as a single all purpose spray feed. It contains high levels of ammoniacal nitrogen, which makes it an ideal warm weather all purpose feed. It is not recommended for use on poinsettias, gloxinias, Easter lilies, mums, geraniums, and other flowering crops that specifically require a higher nitrate nitrogen ratio.

#### Guaranteed Analysis

Total Nitrogen (N) .....	18%	Copper (Cu).....	0.02%
7.15% Ammoniacal Nitrogen		0.02% Chelated Copper (Cu)	
10.85% Nitrate Nitrogen		Iron (Fe) .....	0.2%
Available Phosphate (P2O5) .....	6%	0.20% Chelated Iron (Fe)	
Soluble Potash (K2O) .....	18%	Total Manganese (Mn) .....	0.5%
Calcium (Ca) .....	1.3%	0.5% Chelated Manganese (Mn)	
Magnesium (Mg) .....	2.35%	Molybdenum (Mo) .....	0.001%
Boron (B) .....	0.02%	Zinc (Zn).....	0.05%
		0.05% Chelated Zinc (Zn)	

### Blossom Booster 10-30-20

Blossom Booster 10-30-20 is recommended when high phosphate and potash levels are required. Excellent plant starter formulation for young plants and transplants. Ideal for hydrangeas since the high phosphorus content ties up excess aluminum in the soil causing a strong pink coloration in the blooms. Blossom Booster promotes better fruit set on greenhouse tomatoes and floral plants during blooming phase, induces bud set, intensifies colors, and flower size on orchids and African violets.

#### Guaranteed Analysis

Total Nitrogen (N) .....	10%	Copper (Cu).....	0.015%
4.67% Ammoniacal Nitrogen		0.015% Chelated Copper (Cu)	
5.33% Nitrate Nitrogen		Iron (Fe) .....	0.12%
Available Phosphate (P2O5) .....	30%	0.12% Chelated Iron (Fe)	
Soluble Potash (K2O) .....	20%	Total Manganese (Mn) .....	0.06%
Magnesium (Mg) .....	1.2%	0.06% Water Soluble Manganese (Mn)	
Sulfur (S) .....	1.6%	Molybdenum (Mo) .....	0.001%
Boron (B) .....	0.02%	Zinc (Zn).....	0.015%
		0.015% Chelated Zinc (Zn)	

### High Cal-Mag Vegetable 12-5-19

This high calcium analysis was specifically designed to meet the nutritional needs of field grown vegetable crops when the irrigation waters require a heavy supplement of calcium.. The additional calcium supplied by this formula will be adequate to prevent calcium related deficiency such as blossom end rot. With elevated calcium, potassium and magnesium to provide solid root growth, strengthened xylem for nutrient transport through the plant, and healthy chloroplast for light energy converting to chemical energy, this formula will deliver a robust and healthy crop.

#### Guaranteed Analysis

Total Nitrogen (N) .....	18%	Copper (Cu).....	0.02%
7.15% Ammoniacal Nitrogen		0.02% Chelated Copper (Cu)	
10.85% Nitrate Nitrogen		Iron (Fe) .....	0.2%
Available Phosphate (P2O5) .....	6%	0.20% Chelated Iron (Fe)	
Soluble Potash (K2O) .....	18%	Total Manganese (Mn) .....	0.5%
Calcium (Ca) .....	1.3%	0.5% Chelated Manganese (Mn)	
Magnesium (Mg) .....	2.35%	Molybdenum (Mo) .....	0.001%
Boron (B) .....	0.02%	Zinc (Zn).....	0.05%
		0.05% Chelated Zinc (Zn)	



## Poinsettia Cal-Mag 14-3-14

This Cal-Mag formula is specifically designed for poinsettia production. It supplies most of its nitrogen in the nitrate form and is an ideal feed for crops responsive to nitrate nitrogen during low light periods and all ammonium sensitive plants. It is also an ideal source of calcium and magnesium that is immediately available and ideal for overcoming a calcium deficiency. It will maintain solubility in a concentrate tank when nitrate and/or magnesium nitrate are added. To avoid calcium precipitation, do not mix with other fertilizers or materials that contain phosphate or sulfur compounds.

### Guaranteed Analysis

Total Nitrogen (N) .....	14%	Copper (Cu).....	0.01%
1.94% Ammoniacal Nitrogen		0.01% Chelated Copper (Cu)	
12.08% Nitrate Nitrogen		Iron (Fe) .....	0.12%
Available Phosphate (P2O5) .....	3%	0.12% Chelated Iron (Fe)	
Soluble Potash (K2O) .....	14%	Total Manganese (Mn) .....	0.06%
Calcium (Ca) .....	6.0%	0.06% Water Soluble Manganese (Mn)	
Magnesium (Mg) .....	2.0%	Molybdenum (Mo) .....	0.08%
Boron (B) .....	0.01%	Zinc (Zn).....	0.07%
		0.07% Chelated Zinc (Zn)	

## Plug Special 13-2-13

A plug growing formula with high nitrate nitrogen, calcium, magnesium, and minor elements, mostly derived from the chelated (EDTA) form, and all combined into a totally soluble mix. Test nutrient levels in both water and growing media prior to use. Suggested use for plugs on a constant feed basis is at 50 to 75 PPM Nitrogen. Use growth results and nutritional monitoring to adjust this rate. Avoid mixing with acids or other NPK fertilizers.

### Guaranteed Analysis

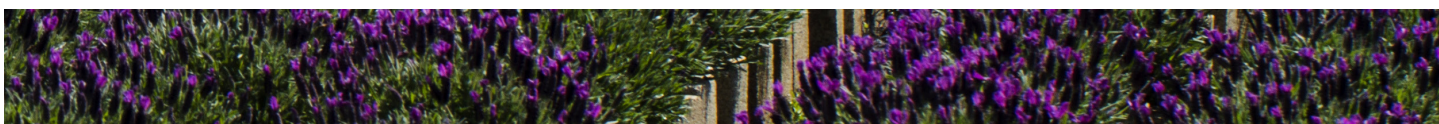
Total Nitrogen (N) .....	13%	Copper (Cu).....	0.03%
0.80% Ammoniacal Nitrogen		0.03% Chelated Copper (Cu)	
12.2% Nitrate Nitrogen		Iron (Fe) .....	0.05%
Available Phosphate (P2O5) .....	2%	0.05% Chelated Iron (Fe)	
Soluble Potash (K2O) .....	13%	Total Manganese (Mn) .....	0.03%
Calcium (Ca) .....	6%	0.03% Chelated Manganese (Mn)	
Magnesium (Mg) .....	3%	Molybdenum (Mo) .....	0.0075%
3% Water Soluble Magnesium (Mg)		Zinc (Zn).....	0.028%
Boron (B) .....	0.0017%	0.028% Chelated Zinc (Zn)	

## Cal-Mag 15-5-15

Cal-Mag Special 15-5-15 PLUS supplies most of its nitrogen in the nitrate form and is an ideal feed for crops responsive to nitrate nitrogen during low light periods and all ammonium sensitive plants. It is also an ideal source of calcium and magnesium that is immediately available and ideal for overcoming a calcium deficiency. It will maintain solubility in concentrate tank when calcium nitrate and/or magnesium nitrate are added. To avoid calcium precipitation do not mix with other fertilizers or materials that contain phosphate or sulfur compounds.

### Guaranteed Analysis

Total Nitrogen (N) .....	15%	Copper (Cu).....	0.01%
2.86% Ammoniacal Nitrogen		0.01% Chelated Copper (Cu)	
12.14% Nitrate Nitrogen		Iron (Fe) .....	0.10%
Available Phosphate (P2O5) .....	5%	0.10% Chelated Iron (Fe)	
Soluble Potash (K2O) .....	15%	Total Manganese (Mn) .....	0.05%
Calcium (Ca) .....	5.0%	0.05% Chelated Manganese (Mn)	
Magnesium (Mg) .....	2.0%	Molybdenum (Mo) .....	0.007%
Boron (B) .....	0.02%	Zinc (Zn).....	0.08%
		0.07% Water Soluble Zinc (Zn)	





### Cal-Mag 17-5-17

This Cal Mag Special formula is probably very close to being the perfect fertilizer all in one bag. It contains all the major, secondary and minor elements almost any crop would need. NPK, calcium, magnesium, six trace elements and a very high ratio of nitrogen in nitrate form. The calcium to magnesium ratio is perfectly proportioned so that they will not impede one another's uptake by acting as antagonists. And while slightly on the acid side, this formula allows the delivery of these essential cations without a major impact on media pH.

#### Guaranteed Analysis

Total Nitrogen (N) .....	17%	Copper (Cu).....	0.02%
4.33% Ammoniacal Nitrogen		0.02% Chelated Copper (Cu)	
12.67% Nitrate Nitrogen		Iron (Fe) .....	0.10%
Available Phosphate (P2O5) .....	5%	0.10% Chelated Iron (Fe)	
Soluble Potash (K2O) .....	17%	Total Manganese (Mn) .....	0.05%
Calcium (Ca) .....	4.0%	0.05% Chelated Manganese (Mn)	
Magnesium (Mg) .....	1.0%	Molybdenum (Mo) .....	0.0007%
Boron (B) .....	0.02%	Zinc (Zn).....	0.05%
		0.05% Chelated Zinc (Zn)	

### General Purpose 20-10-20

General Purpose 20-10-20<sup>PLUS</sup> is an all purpose feed with elevated levels of Nitrate Nitrogen to give better nutritional control when feeding the cool darker months. Commonly used as a foliar application or root feed on ornamentals, turf and nursery stock. Because it formulated to provide a balance of both major and minor elements, it is a safe choice when feeding a wide range of plant life with the same fertilizer. It will provide immediate but gentle nourishment in a form of application that can overcome and bypass other nutrient complication due to soil problems.

#### Guaranteed Analysis

Total Nitrogen (N) .....	20%	Boron (B) .....	0.02%
7.90% Ammoniacal Nitrogen		Copper (Cu).....	0.05%
12.10% Nitrate Nitrogen		0.5% Chelated Copper (Cu)	
Available Phosphate (P2O5) .....	10%	Iron (Fe) .....	0.10%
Soluble Potash (K2O) .....	20%	0.10% Chelated Iron (Fe)	
Calcium (Ca) .....	5.0%	Total Manganese (Mn) .....	0.05%
Magnesium (Mg) .....	0.11%	0.05% Chelated Manganese (Mn)	
0.11% Water Soluble Magnesium (Mg)		Molybdenum (Mo) .....	0.01%
Sulfur (S) .....	0.16%	Zinc (Zn).....	0.05%
0.16% Combined Sulfur		0.05% Chelated Zinc (Zn)	

### Acid Special 21-7-7

An effective formula that will help in lowering pH when irrigation water or media are high in alkalinity. Generally used as an occasional feed for correcting these problems in most crops and as a basic feed for acid loving woody ornamentals and foliage plants. Commonly used as a foliar application or root feed on ornamentals, turf and nursery stock.

#### Guaranteed Analysis

Total Nitrogen (N) .....	21%	Copper (Cu).....	0.05%
14.00% Ammoniacal Nitrogen		0.05% Chelated Copper (Cu)	
2.10% Nitrate Nitrogen		Iron (Fe) .....	0.10%
4.90% Urea Nitrogen		0.10% Chelated Iron (Fe)	
Available Phosphate (P2O5) .....	7%	Total Manganese (Mn) .....	0.05%
Soluble Potash (K2O) .....	7%	0.05% Chelated Manganese (Mn)	
Sulfur (S) .....	10%	Molybdenum (Mo) .....	0.0009%
10% Combined Sulfur (S)		Zinc (Zn).....	0.05%
Boron (B) .....	0.02%	0.05% Chelated Zinc (Zn)	





### Hydroponic Special 4-18-38



Hydroponic Special 4-18-38 represents a basic formulation that the grower, through leaf analysis, can manipulate to provide virtually any combination of nutrient levels desired. Hydroponic Special contains all the necessary elements to provide basic diet for Hydroponic Culture.

### General Purpose 21-5-20



General Purpose 21-5-20 is an all purpose feed with elevated levels of Nitrate Nitrogen to give better nutritional control when feeding the cool darker months. Commonly used as a foliar application or root feed on ornamentals, turf and nursery stock.

### K-Blast 9-15-30



K-Blast was specifically designed to enhance fruit size, harvested fruit yield and post harvest shelf life. The synergy provided by the NPK ratio enhances the translocation of carbohydrates toward fruit formation which will result in increased yield.

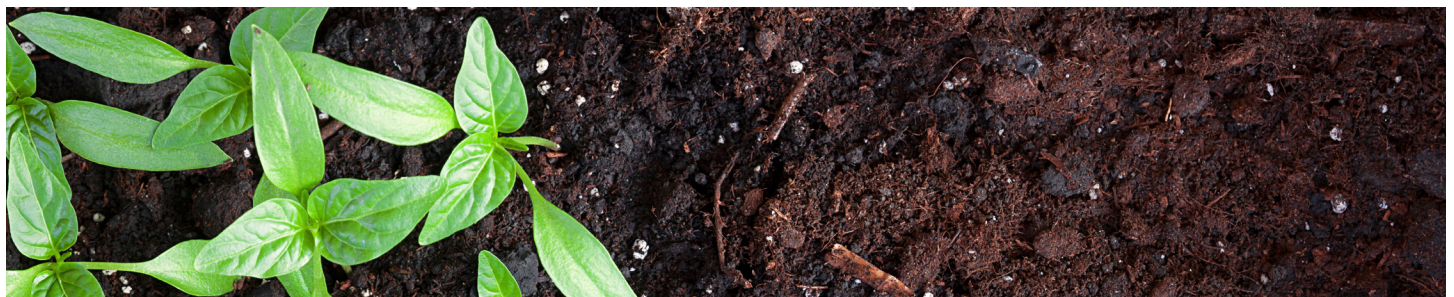
### Chemec-B® - Chelated Minor Element Complex



Chemec is a completely soluble, high quality, concentrated micro nutrient compound in chelated form. The Iron has two forms of chelation to make it effective over a broad range of pH. It has the ability to correct a minor element deficiency through soil application.

ACW Supply carries a wide range of Plant Marvel fertilizers as well as many special formulations. Please contact ACW Supply for a full list of fertilizers or with any questions about their products.

**\*Sold in 25lb bags or in 5lb containers with minimums.**



### Hydroponic Special 6-10-27



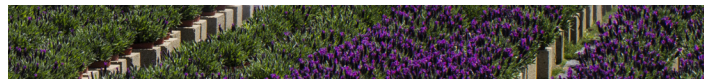
Hydroponic Special 6-10-27 represents a basic formulation that the grower, through leaf analysis, can manipulate to provide virtually any combination of nutrient levels desired. Hydroponic Special contains all the necessary elements to provide basic diet for Hydroponic Culture.

### Tropical Foliage Special 24-8-16



Tropical Foliage Special 24-8-16 is formulated to give nutrient ratios shown to be at optimum levels for tropical foliage plants by Florida researchers. Excellent as a regular feed for established foliage plants as well as a maintenance feed for Interiorscape use.

### Geranium and Bedding Plant Special 17-17-17



Geranium and Bedding Plant Special was developed to provide an almost neutral pH effect on the soil media and to deliver higher rates of nitrate nitrogen than provided for in their standard 20-20-20. Approximately 50% of the nitrogen contained in this formula is nitrate nitrogen.

### Organic Bicarbonate Reducer - 99% Citric Acid



A reducer that is derived from Citric Acid. It has the advantage over harsh mineral based "Hazmat" acids, like Nitric, Phosphoric or Sulfuric Acid, of being nonhazardous and easy to handle, easily dissolves in water and is highly compatible with other water soluble products.





Peters Professional fertilizers are the world's leading water-soluble fertilizers. With its exclusive M-77 chelating formula, Peters Professional assures that nutrients and trace elements remain readily available for fast and easy uptake. **\*Sold in 25lb bags**

**General Purpose 20-20-20**

When growing media contains mineral soil, this formula provides acidifying action to help combat excessive pH. Also use when reduced micronutrients are desired.

- B (Base) formulation can be used alone or rotated with a C (Customizing) component
- Appropriate for Water Types 2, 3 and 4 as a drip, drench or foliar feed
- Contains a full range of essential micronutrients
- Also available in no dye formulation (SKU# 99291)



**Peat-Lite Special 15-16-17**

The perfect 1:1:1 N-P-K formulation for geraniums raised in soilless growing media.

- B (Base) formulation can be used alone or rotated with a C (Customizing) component
- Appropriate for Water Types 2, 3 and 4
- Contains a full range of essential micronutrients

**Peat Lite 20-10-20**

Crops that are sensitive to excess micronutrients thrive with this classic formula with its acidifying action that corrects an overload of growing media pH.

- B (Base) formulation can be used alone or rotated with a C (Customizing) component
- Effective for all Water Types
- Contains a full range of essential micronutrients



**Hydroponic Special 5-11-26**

Designed exclusively for hydroponic culture, this classic formula is ideal for most hydroponic crops, especially tomatoes, cucumbers and lettuce.

- Flexible B (Base) formulation is easily augmented to meet unique plant needs
- Effective for all Water Types
- Buffered to help maintain acceptable working solution pH

*Other Formulations Available in Pallet Quantities*



For 50 years, Osmocote has been the brand that professional gardeners trust for plant nutrition. Each granule is coated with a unique resin that controls nutritional release. Plants get what they need, when they need it. Osmocote has decades of rigorous field testing to confirm product effectiveness.

Osmocote uses a proprietary biodegradable resin-coating to encapsulate a nutritional prill called a granule. Each homogeneous prill contains a thoughtfully blended mix of nitrogen, phosphorous and potassium. **\*Sold in 50lb Bags**

**Osmocote Classic**  
- No Micronutrients

**Osmocote Pro**  
- Micronutrients in the prill

**Osmocote Plus**  
- Micronutrients around the prill

### E-Max Topdress 12-6-8

Osmocote Blend 12-6-8 2-3 month topdress is a heterogeneous blend of Polymer-Coated Urea, uncoated Phosphorus and Potassium and micronutrients. Only a portion of the Nitrogen is coated; a majority of the product is soluble and quickly available after it is applied and watered in.

- For use on nursery stock, foliage and landscapes.
- This product contains coated urea nitrogen featuring E-Max Release Technology and uncoated, granular micronutrients.



### Topdress 17-3-6

Osmocote Blend 17-3-6 4-6 month is a quick green-up, topdress product formulated to give the plants a boost prior to the selling season or any time during the year. It contains our top quality Poly-S® coating to provide Nitrogen that releases up to 6 months. This product also contains STEP® Hi-Mag micronutrients.

- For use on nursery stock, foliage and landscapes.
- Contains Poly-S and micronutrients

### Osmocote Classic 14-14-14 (3-4 month) *\*no micronutrients*

Osmocote 14-14-14, the original time tested and proven resin coated fertilizer, safely and consistently delivers N-P-K nutrition for up to 4 months. Often used in greenhouse production as a base feed, it is incorporated into the growing media or top dressed onto hanging baskets at point of sale to provide long term nutrition to the green goods consumer.

- Homogeneous Osmocote N-P-K delivers nutrition consistently for many months.
- Provides a sustained supply of nitrogen, phosphorus and potassium critical for proper plant growth and development.
- Safe & predictable nutrient release.
- Eliminates repeated applications, saving time, labor, and ultimately dollars.



### Osmocote Pro 19-5-8 (8-9 month)

Osmocote Blend 19-5-8 8-9 month used in outside container nurseries as a multi-purpose fertilizer. It is used on a wide variety of plants that are grown in bark mixes.

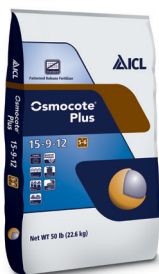
- Featuring 100% coated, homogeneous N-P-K prills blended with a proven micronutrient package (equivalent to Micromax®) provides plants elements essential for high quality growth in a form they can easily utilize
- For use on nursery stock, foliage and landscapes
- For general purpose outdoor nursery production
- This product contains coated urea and micronutrients in sulfate/oxide form.



## Osmocote Pro 17-5-11 (3-4 month & 5-6 month)

Osmocote Blend 17-5-11 is recommended for use in greenhouse, nursery, field grown and landscape environments. It is generally blended into the growing media, but it can be topdressed in the pot, subdressed or dibbled. It is recommended that the pot is thoroughly watered before or directly after planting to release the minor nutrients from the Micromax granules and disperse it into the media.

- Featuring 100% coated, homogeneous N-P-K prills blended with a proven micronutrient package (equivalent to Micromax®) to provide plant elements essential for high quality growth in a sulfated form they can easily utilize
- Elevated level of iron in sulfate form is easily taken up by plants and encourages good foliage color
- Choice of longevities offers the flexibility to deliver consistent, reliable nutrition for as long as plants need it
- Provides good cost-in-use value
- Contains no urea so can be used in covered production areas as well as outdoor nursery, foliage and landscape plants



## Osmocote Plus 15-9-12 (3-4 month & 5-6 month)

Osmocote Plus 15-9-12 Standard contains homogenous 100% resin coated fertilizer cores that contain the major nutrients - nitrogen, potash, phosphorous plus the secondary nutrients magnesium and sulfur, as well as the minor nutrients boron, copper, iron, manganese, molybdenum and zinc. Our unique coating made from plant resins releases nutrients with an even (standard) pattern over the 3-4 or 5-6 month time period.

- For use in greenhouse, nursery and foliage production, container gardens, interiorscapes and landscapes.
- Contains 100% resin coated N-P-K plus micronutrients nutrient cores. ICL Specialty Fertilizers Patterned Nutrient Release Technology™ meets specific feeding cycles with unmatched consistency, efficiency and safety.
- “Standard” release products are recommended for use when consistent fertility is required throughout the plant’s growth cycle
- Special circumstances such as sensitive or high-value crops can be fertilized with this product
- For use with Dibbling equipment
- Can be Incorporated into growing media or Surface Applied in the container

### Other Formulations Available in Pallet Quantities





# ACW SUPPLY

## GENERIC SALTS & ORGANIC SOLIDS

ACW Supply carries a wide range of single mineral salts and organic solids in **40 or 55lb bags**. Mineral fertilizers greatly affect the soil (physical, chemical, and biologic properties) and plants - feeding the plants and enriching the soil at the same time.

### SALTS

#### Calcium Carbonate

- Acceptable for use in conventional and organic growing by the WSDA organic program, CDFA OIM program.
- Allowed in Organics (OMRI Listed)

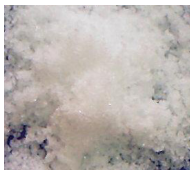


#### Calcium Nitrate **15.5-0-0 + 19% Ca**

- Fully water soluble nitrogen and calcium fertilizer. It is a free flowing, fine granular or prilled material which dissolves quickly in water without any residues.
- Technical Greenhouse Grade

#### Calcium Chloride

- Fully water soluble calcium fertilizer (soluble grade) Is suited to application through all fertigation and hydroponics systems.
- High Purity
- Technical Greenhouse Grade

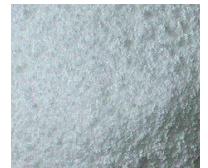


#### Magnesium Nitrate **11-0-0 + 16% Mg**

- Provides plants with readily-available magnesium, which is essential for their healthy growth.
- 9.6 mag (or 16% mag oxide)
- Technical Greenhouse Grade

#### Magnesium Sulfate (Epsom Salt)

- Tests show that Epsom salt helps produce more flowers and makes pepper plants grow larger. Experts say it can increase harvests, make fruit taste sweeter.
- Allowed in Organics
- Technical Greenhouse Grade



#### Potassium Nitrate **13-0-46**

- Potassium nitrate is a high quality source of both potassium and nitrogen, two essential macronutrients (primary nutrients) for plants.
- Technical Greenhouse Grade

#### Potassium Sulfate **0-0-50**

- Sulfur 17% - A naturally mined product. For lower application rates you can mix it into a fertilizer to get a more even distribution.
- Organic Certified
- Technical Greenhouse Grad





### Copper Sulfate

- This compound is highly advantageous in addressing an overly alkaline environment, remedying plant fungi, unwanted root growth, algae growth, etc.
- Allowed in Organics
- Technical Greenhouse Grade

### Zinc Sulfate

- Zinc deficiencies are more common on sands, sandy loams and organic soils because these soils originally contain low total zinc levels.
- Allowed in Organics
- Technical Greenhouse Grade



### Iron Sulfate

- This product Keeps iron in your soil using exact specifications for quality and consistency in plant health technologies.
- Allowed in Organics
- Technical Greenhouse Grade

### Dolomitic Lime

- Reduces soil acidity and provide a high purity source of calcium and magnesium for plants.
- Allowed in Organics
- Technical Greenhouse Grade



### Gypsum

- Agricultural gypsum works as a soil amendment, conditioner and fertilizer to improve the soil, supplying calcium and plant available Sulfate Sulfur.
- Organic Certified

### Manganese Sulfate

- Broadcast 20-60 lbs. per acre preplant or at planting. For banded or side-dress applications, use 10-30 lbs.
- 32% Manganese, 18% Sulfur
- Allowed in Organics
- Technical Greenhouse Grade



### Ammonium Sulfate

- Functions to bind iron and calcium cations that are present in both well water and plant cells. It is particularly effective as an adjuvant for 2,4-D (amine), glyphosate, and glufosinate herbicides.
- Technical Greenhouse Grade

### Di-Ammonium Phosphate 18-46-0

- Made from two common constituents in the fertilizer industry - its relatively high nutrient content and excellent physical properties make it a popular choice in farming and other industries.
- Technical Greenhouse Grade



### Mono-ammonium Phosphate 12-61-0

- Monoammonium phosphate is used for all soil types, for ground and bed application, and for all agricultural crops and climates.
- Technical Greenhouse Grade



### Monopotassium Phosphate 0-52-34

- Monopotassium Phosphate fertilizer contains 52% Phosphorous and 34% Potassium and is water soluble.
- Recommended as a supplement to increase yield especially in fruit.
- [Technical Greenhouse Grade](#)



### Triple Superphosphate 0-45-0

- Desirable for fertilization of leguminous crops, such as alfalfa or beans, where no additional N fertilization is needed to supplement biological N fixation.
- Over 90 percent of the total P in this product is water soluble, so it becomes rapidly available for plant uptake.
- [Technical Greenhouse Grade](#)

### Agsil 16

- Agsil 16 is a soluble form of potassium silicate providing the plant a 100% available source of silicon and potassium that are essential for optimum plant growth and health.
- [Allowed in Organics](#)
- [Technical Greenhouse Grade](#)



### PeKacid

- PeKacid is the only solid, highly acidifying, dry mono-crystal, free flowing and water soluble fertigation fertilizer that contains both phosphorus and potassium.
- [Technical Greenhouse Grade](#)

## ORGANIC SOLIDS

### Fish Meal 9-4.5-0

- Stimulates vigorous growth and deep green color. A strong source of organic nitrogen, Fish Meal fertilizer is uniquely processed to retain maximum nutritional value without using high temperatures or synthetic chemicals.
- Applied to leaves it is assimilated quickly by plants. Often combined with kelp extract to enhance performance.

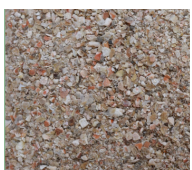


### Alfalfa Meal 2.5-0-2.5

- Excellent, all-purpose fertilizer when supplemented with a source of phosphorus. Alfalfa Meal has the ability to increase water retention, improve soil structure, and stimulate biological activity.
- It's great at replenishing worn out soils when used as a soil amendment. It can also be used as an accelerant in compost piles.

### Bat Guano 9-3-1

- Natural fertilizer containing nitrogen, phosphate and potassium. Nitrogen contributes to rapid green growth, phosphate to root growth and flowering while potassium builds strong stems.
- Feeds not only the plant but spurs an increase in beneficial soil microbe populations.



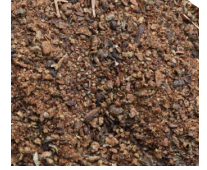
### Crustacean Meal 4-0-0 12% Ca

- Crustacean Meal is an excellent organic source of nitrogen, phosphorous, calcium and magnesium. The high calcium content and slow release nitrogen and phosphorous makes this a perfect general fertilizer ideal for tomato growers.
- 4% Nitrogen (N), 12% Calcium (Ca)



### Cottonseed Meal 5-2-1

- Cottonseed meal fertilizer is highly beneficial with a high organic content which aerates tight, dense soil and aids in retaining moisture in light, sandy soil. Due to its slow release time, cottonseed meal feed is safe to use liberally without danger of possible foliage burn, promotes healthy foliage, increases crop production and fosters profuse, spectacular blooms.
- Natural - Not Organic Certified



### Feather Meal 12-0-0

- Slow Release Nitrogen from hydrolyzed, ground feathers high in protein.
- An all-natural source of slow-release nitrogen, it is perfect for corn, tomatoes and fall harvested vegetables.

### Sodium Nitrate / Chilean Nitrate 15-0-2

- A mined product from the desert in Northern Chile, which is the only known deposit of this mineral salt in the world. NNS has an analysis of 15-0-2 and is considered soluble. Chilean Nitrate is commonly used in New England and elsewhere on organic farms as a form of nitrogen that is available to plants in cold soils.



### Pro-Pellit! Blood Meal 13-0-0

- Pro-Pellit! Blood Meal 13-0-0 provides a potent source of nitrogen to your soil and is ideal for heavy feeders like corn, broccoli, tomatoes, and leafy greens. It is proven to provide vigorous growth and nurture a deep, lush green in all plant types.

### Bone Meal 3-15-0

- Pro-Pellit! Bone Meal 3-15-0 provides plants with an exceptional source of three key nutrients: nitrogen, phosphorus, and calcium. These nutrients promote vegetative growth, deep root structures, robust stems, as well as, stalks and leaves.
- Ideal for bulbs, fruits, and other flowering plants



### Kelp Meal 1-0-2

- Kelp Meal (*Ascophyllum nodosum*) is sustainably harvested seaweed collected from North Atlantic waters. It is an organic plant food that provides natural nitrogen and potassium. The product feeds beneficial soil microbes and contributes to organic matter content in soils and soil mixes.

### Multi-Purpose Fertilizer 9-3-7

- Granulated, protein-based, multi purpose fertilizer with all essential elements for healthy plant growth. The nitrogen, derived from feather meal releases in concert with your plant's growth. As they grow faster, more nitrogen is available for uptake.



### Greensand

- Naturally occurring iron-potassium silicate used to remineralize soil. Long used in sustainable agriculture, PAR4® Greensand provides essential trace elements, including silicon, to help loosen hard soils, bind sandy soils, and contribute to plant health - strengthening the plants ability to withstand disease and insect attack.





The American Root Company was created with a very simple and organic idea; provide the world's most superior mycorrhizae products at an affordable cost to the consumer. Mycorrhizal fungi release powerful enzymes into the soil that dissolve hard-to-capture nutrients, such as phosphorus, iron and other "tightly bound" soil nutrients.

### Bigfoot Mycorrhizae Granular & Concentrate

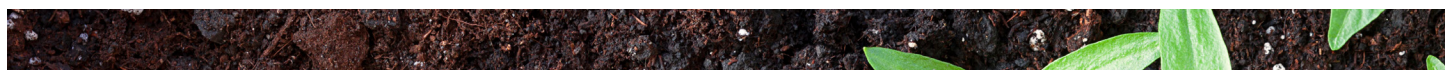
By combining the world's most powerful mycorrhizae and high performing ingredients as the carrier, Big Foot has mycorrhizae colonization levels that are unrivaled.



- Big Foot Granular is perfect for transplanting. Mix in soil.
- Granular needs to be applied near the roots of the plant. Do not apply granular on top of soil.
- Contains biochar, kelp, worm castings, humic acid and high performance mycorrhizal fungi - perfect for your plants.



- Big Foot Concentrate is a water-in product.
- Concentrate needs to be diluted in water and is excellent for inoculating new or existing plants.
- Contains biochar, kelp, worm castings, humic acid and high performance mycorrhizal fungi - perfect for your plants.



Mycorrhizal Applications, Inc. is a leader in the research and development of mycorrhizal inoculum for commercial use. Mycorrhizal fungi increase the surface absorbing area of roots 100 to a 1,000 times, thereby greatly improving the ability of the plant to access soil resources.

### MycoApply Granular & Powder



- Endo**
- Granular
  - 4 species Endomycorrhizae
  - 60,000 Propagules per lb.



- Endo/Ecto**
- Granular
  - 4 species Endo & 7 species Ecto
  - 60,000 Endo & 110 million Ecto Propagules per lb.



- Ultrafine Endo**
- Suspendable Powder
  - 4 species Endomycorrhizae
  - 130,000 Propagules per lb.

- Ultrafine Endo/Ecto**
- Suspendable Powder
  - 4 species Endo & 7 species Ecto
  - 130,000 Endo & 110 million Ecto Propagules per lb.



- All Purpose Granular**
- Granular
  - 9 species Endo & 7 species Ecto
  - 30,000 Endo & 140 million Ecto Propagules per lb.

- Soluble Maxx**
- Suspendable Powder
  - 9 species Endo & 10 species Ecto
  - 30,000 Endo & 1.5 billion Ecto Propagules per lb.
  - The ultimate product for re-establishing biological diversity in soil and ensuring maximum plant performance.
  - 1lb bags

- All Purpose Soluble**
- Suspendable Powder
  - 4 species Endo & 5 species Ecto
  - 40,000 Endo & 210 million Ecto Propagules per lb.





Plant Success Organics Granular and Soluble mycorrhizae provide a wide spectrum of beneficial soil microbes for most plant types. Mycorrhizae are fundamental for superior plant performance, supplying the water and nutrients needed for optimal plant and root development, flowering and fruiting.

### Great White® Premium Mycorrhizae

Great White is the most complete mycorrhizal product on the market. The cutting edge formula contains 16 different species of mycorrhizal fungi, 14 different species of beneficial bacteria and 2 species of trichoderma, all in one product. Research shows that this powerful formula will encourage plant and root development, giving plants the tools they need to maximize yields.

- Great White® can be used on seeds, cuttings, in hydroponic systems, coco or soil.
- The key to vital plants starts with a vigorous root system, and a vigorous root system starts with Great White!



### Orca® Premium Liquid Mycorrhizae

Orca is a highly concentrated liquid mycorrhizal and beneficial bacteria product. It brings together 4 highly effective endo mycorrhizal species with 14 super effective bacteria strains. From the people who brought you Great White, this all-in-one inoculant is all you need when it comes to beneficials.



- Orca® can be used on seeds, cuttings, in coco and soil or in any hydroponic system.
- Never before has such a powerful inoculant been so clean, easy to apply, and effective.

### Plant Success Organics Granular

Plant Success Organics Granular™ contains mycorrhizae, bacteria, trichoderma and an all-purpose fertilizer. It is well-suited to a variety of soils, climates and plants. Granular is easily applied to new plantings by simply sprinkling it into a planting hole or mixing in potting soil. The all-purpose fertilizer provides an excellent microbe food to establish plants and beneficial organisms. Plant Success Organics Granular™ will create a thriving and diverse soil capable of supporting maximum root and plant growth.

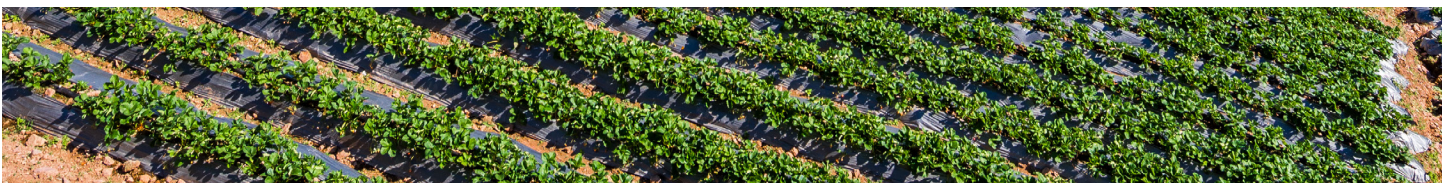
- Spread the granular at the bottom of the planting hole. While filling the planting hole, spread product in close proximity to the roots.



### Plant Success Organics Soluble

Plant Success Organics Soluble™ contains mycorrhizae, bacteria and trichoderma. It is well-suited to a variety of soils, climates and plants. It is easily applied to existing landscapes and yards by mixing with water and using a hose-end sprayer or watering can. Also included is seaweed extract and humic acids to feed beneficial soil organisms. Plant Success Organics™ Soluble will create a thriving and diverse soil capable of supporting maximum root and plant growth.

- Apply at a rate of 1 tsp per gal of water.





RMBP products are all natural and beneficial for soil structure, plant health and plant growth, while also keeping soils in place to prevent and reduce soil erosion. These products are research proven in the field and in the laboratory. When these products are used in combination they can “fix dirt” by turning your dirt into a productive soil, that will support plant life over several years, until the soil can support nutrient cycling.

## Biosol

Biosol is a 100% organic long lasting fertilizer with soil improving consequences. Biosol has a balanced nutrition ratio and supplies the plant with micro and macro nutrients throughout the whole growing period. Building the organic matter and humus allows the soil to become active, allowing the nutrients to be available for plant intake. It is the high organic material in the Biosol that improves the humus content of the soil in addition to providing quality nutrients for plants. The soil is enriched, rooting is strengthened and the growing and vitality of your turf is increased, while strengthening the plants resistance against disease. Biosol lacks salt and is therefore suitable for greenhouse crops and arid/low precipitation areas.

- All natural & environmentally balanced
- Produces healthy plants with vibrant color and root structure
- Benefits entire landscape
- Long lasting & will not burn lawn
- Cost effective (Biosol holds 3-4 times it's weight in water)

### Available Sizes:

11lb	--	BS11P
55lb	--	BS55P
50lb	--	BSM50P

# BIOSOL



## Grow-Plex SP Humic Acid

Grow-Plex SP is a water-soluble source of humic acid. It also supplies levels of soluble potassium and phosphorus in readily available forms. Combined with humic acid, the potassium, phosphorus, calcium, iron and sulfur can be rapidly absorbed and incorporated into the plant whether via soil or foliar application methods.

Grow-Plex SP is compatible with almost all starter and foliar fertilizers for more efficient uptake and more sustained nutrition. Simply, it helps the fertilizer with which it is applied work more effectively.



- General growth stimulation.
- Improved soil wetting.
- Improved availability of iron and other trace metals.
- Improved iron uptake.

### Available Sizes:

1lb	--	BSGP1P
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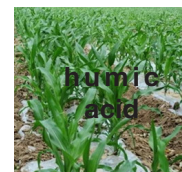
## Grow-Plex G NatureMate Humic Acid

Granular Grow-Plex G natural humic acid based soil conditioner functions as an organic chelator and microbial stimulator. It is a source of natural humic acid with a unique carbon matrix incorporating a high concentration of organic acids, specifically humic acid, which improves the plant's ability to take in vital nutrients. A natural trace mineral, carbon, and humic acid based granular soil conditioner that acts as an organic chelator and microbial stimulator. It has a unique carbon matrix incorporating a high concentration of trace minerals and organic acids, specifically humic acid, which improves the plant's ability to take in vital nutrients.

- Unlocks soil nutrients
- Improves effect of fertilizers
- Enhances root development
- Improves soil structure
- Enhances seed germination & survival

### Available Sizes:

1lb	--	BSNM25P
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### SeaMate Fe 6-8-12

A balanced seaweed, N-P-K, trace mineral, carbon, and humic acid based water-soluble powder for use as a stand alone product, or as an ingredient in balanced fertility programs as a foliar nutrient spray or soil drench for plant growth and development.

SeaMate Fe 6-8-12 supplies levels of natural growth stimulants, soluble nitrogen, potassium and phosphorus in readily available forms. Combined with humic acid, the nitrogen, potassium, phosphorus, calcium, and iron can be rapidly absorbed and incorporated into the plant whether via soil or foliar application methods.



- Stimulates root development whether foliar or soil applied. Low organic soils respond best. Foliar applications are effective regardless of soil condition.
- Growth stimulant for tomatoes.
- Improved germination of tomato seeds.
- Increased yield of potatoes and soybeans

#### Available Sizes:

1lb -- BSSM68121P

### Menefee Humate

Granular Earthgreen Menefee Humate All Natural Organic Soil Conditioner natural humic acid based solid conditioner functions as an organic chelator and microbial stimulator. It is a source of Green Grassnatural humic acid with a unique carbon matrix incorporating a high concentration of organic acids, specifically humic acid, which improves the plant's ability to take in vital nutrients.

Earthgreen Menefee Humate All Natural Organic Soil Conditioner is the most consistent and highest quality granular humic acid product on the market. Users may expect plant response consistent with such a high quality product. However, no guarantee of performance in any of these applications is stated or implied.

- Earthgreen Menefee Humate All Natural Organic Soil Conditioner will significantly improve poor soils when used in combination with a balanced fertilization program
- Works best when minimum daily soil temperatures reach 55° F.

#### Available Sizes:

50lb -- BSNM50P





Microbe Life's unique microbial and humate products rapidly break down most pollution, vastly improving plant and turf nutrient intake; restoring the soil to a more natural, biologically active state. Microbe Life products inhabit the root zone, resulting in better uptake of macro- and micronutrients, minerals and more efficient water usage. This strengthens the roots, leading to a vigorous plant, accelerating photosynthesis at the foliar level, and providing increased energy.

## Photosynthesis Plus

The culture consortium produced by Ecological Laboratories, Inc. that is used on tens of thousands of acres of crops worldwide is the foundation for our Photosynthesis Plus, a complete ecosystem in the bottle. The proprietary formulation and culture growth enhances product performance via selective adaptation, resulting in superior performance in aerobic, facultative, anaerobic and anoxic environments. Shelf stable for two years.

- Photosynthetic Bacteria - promoting photosynthesis
- Autotrophic bacteria for improved CO2 conversion
- Rare earth water soluble humates - mined from organic matter



## Nourish L

Microbe Life Hydroponics Nourish-L is a unique, liquid conditioner derived from a highly decomposed organic humus deposit, unparalleled by any other source of humates. Contains natural carbon made up of marine animal carbon and vegetative carbon compounds, making it more complex and superior to Leonardite sources as well as an amazing wealth of Cypress lignin—a high-level food source for the beneficial fungi and bacteria—which strengthens plant cell walls and enhances nutrient absorption and water-binding capabilities. 100% Verified Organic to USDA standards. Microbe Life Hydroponics Nourish-L enhances the ability of plants to absorb nutrients more efficiently, optimizing plant functions and facilitates greater results using less nutrients.

## Vegetable & Fruit Yield Enhancer

Microbe Life Hydroponics Vegetable and Fruit Yield Enhancer is a unique conditioner that is derived from an extremely rare and highly decomposed organic humus deposit. It is highly concentrated containing bacillus microbes, humic acids, living photosynthetic microbes and Endomycorrhizal fungi which has unequaled performance in vegetable & fruit enhancement. The result is a better soil structure and an enhancement that may aid in the ability for vegetables and fruit to absorb nutrients. Microbe Life Hydroponics Vegetable and Fruit Yield Enhancer contains a rare mixture of carbon compounds, the ultimate food source for your plants and the soil microorganisms



## Also Available: Consumer Sprays & Refills

- 1.) Lawn Conditioner & Sod Starter
- 2.) Foliar Spray & Root Drench
- 3.) Plant Builder
- 4.) Vegetable & Fruit Yield Enhancer
- 5.) Growth Accelerator
- 6.) Thatch Remover







## Promot Biological Inoculum

Promot Biological Inoculum contains the ecto-mycorrhizal fungi *Pisolithus tinctorius* and fermentation byproducts of *Trichoderma* spp. Promot Biological Inoculum is designed for application to conifer trees like Douglas fir, pine and all sorts of Christmas trees. Promot Biological Inoculum is an excellent product to help reestablish forest plantings or to maintain the health of landscape conifer plants. *Pisolithus tinctorius* is a specialized mycorrhizae that forms a symbiotic relationship with conifer plants and promotes their health and growth.

- This product is only for conifers, it is not suitable for use on other plants
- Can be used for seeding, as a side dress, in furrows and drip irrigation, as a transplant dip, and as a standard soil application.

### Available Sizes:

- 1 Gal -- [JHB02291GAL](#)
- 2.5 Gal -- [JHB02292.5GAL](#)



## Salt Down

Salt Down is a source of nitrogen and calcium that reduces excess sodium salt levels in the soil. Salt Down restores soil structure for better drainage and increased plant vigor. Salt Down provides plant nutrients and stimulates biological activity in the soil.

- Salt Down replaces sodium with calcium on soil particles.
- 5-10 gallons per acre is needed to force enough sodium off the soil particles to make a difference.
- Repeat application with each irrigation to improve the soil properties.

### Available Sizes:

- 1 Gal -- [JHB05511G](#)

## Nitrate Converter

Nitrate Converter contains molybdenum which is part of the nitrate reductase enzyme that is involved in the process of converting nitrate to available nitrogen. Nitrate Converter is designed to increase fruit yield and quality, seed and storage tissue uniformity, reduce excessive vegetative growth, improve disease resistance, maintain hormone balance, and prepare crops for harvest.

- This product is only for conifers, it is not suitable for use on other plants
- Can be used for seeding, as a side dress, in furrows and drip irrigation, as a transplant dip, and as a standard soil application.

### Available Sizes:

- 1 Gal -- [JHB05541G](#)
- 2.5 Gal -- [JHB05542.5G](#)



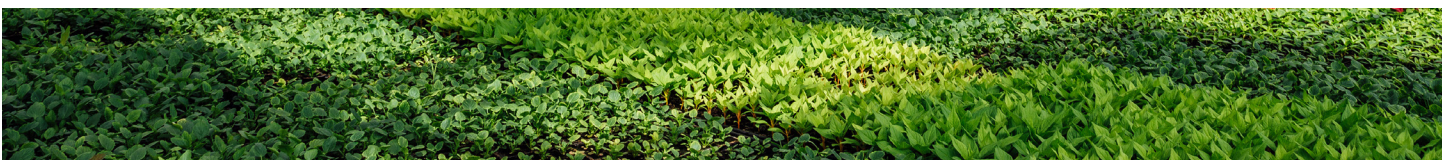
## Phosgard 0-0-25

Phosgard contains plant nutrients designed for soil and/or foliar applications. The phosphorus contained in Phosgard is derived from phosphorous acid, making it different from the traditional phosphate fertilizer derived from phosphoric acid or its salts.

- Salt Down replaces sodium with calcium on soil particles.
- 5-10 gallons per acre is needed to force enough sodium off the soil particles to make a difference.
- Repeat application with each irrigation to improve the soil properties.

### Available Sizes:

- 2.5 Gal -- [JHB06232.5G](#)





Agroplasma USA sells high production organic fertilizers approved for organic agriculture production in over 30 states nationwide. The Ferticell® products are based on different types of algae extracts, natural extracts of plants, and have been developed based directly off grower request. Ferticell® started in 1983 and has developed some of the most unique, efficient fertilizers available to the ag industry.

### Universal 0-0-1

- Provides faster and more efficient fertilizer assimilation through both foliar and soil applications
- Increased root development by promoting more lateral and deeper roots
- Lower salt content than seaweed or kelp products, reducing salt inputs and burn potential
- Improved quality of fruit and vegetables through better absorption of nutrients

- Increased flowering and decreased flower loss
- Develops more homogenous fruits and reduces fruit fall
- Foliar and soil applications with any standard equipment
- Increased yield production at economic rates
- Balanced hormonal package for healthy growth curve
- Provides energy for the plant to focus on physiological functions
- Increased resistance to abiotic stress



### Active 2-20-2, 5-10-10, 10-3-10, 13-2-2



- Ferticell® Active N-P-K is a line of high efficiency organic certified fertilizing materials for organic crop production. Ferticell® Active N-P-K affords the organic grower the ability to fine-tune his/her fertilization plan, a flexibility previously enjoyed mostly by conventional farmers.
- Developing correct plant nutrition recommendations has always been a challenge in organic production. Along with pest control, plant nutrition remains one of the major yield limiting factors for organic farmers.
- Provides energy for the plant to focus on physiological functions
- Increased resistance to abiotic stress

### Pro Phos 0-20-0

Ferticell® Pro Phos 0-20-0 is an Organic certified, mineral sourced, liquid phosphorus fertilizer, designed to supply this key nutrient in an easily mineralizable form. Ferticell® uses micronization technology and algae extract components work together to supply this important nutrient to the plant.

- Phosphorous is known to be immobile in the soil, as it rapidly joins with cations in the soil colloids to form insoluble compounds that resist leaching. This in turn requires the plant to constantly grow new roots to intercept new locations of phosphates.
- Micronization allows ProPhos 0-20-0 to travel through the soil pores and into the root zone itself. Once there its tremendous surface area will reduce the energy required to mineralize its phosphate component. Its liquid provides flexibility and ease of application.

### Why use Pro Phos 0-20-0?

- Mineral sourced organic phosphorous
- Contain no risk salts or limiting nutrients
- High surface area for low energy mineralization
- Micronized liquid suspension for ease of use and translocation





## Calcium 880 Plus

- Ferticell® Calcium 880 Plus is a complex of Calcium carbonate and freshwater algae extract which can be used effectively in foliar applications and most irrigation systems. It contains a natural package of unicellular algae cell extracts to encourage biological activity in the plant. The algae cells act as a facilitator of mobility for the Calcium molecule in the plant, and provide the fastest and most efficient assimilation of Calcium possible.
- Calcium 880 Plus is processed under pharmaceutical guidelines, providing for the highest quality Calcium available. The Calcium carbonate is mined, and processed to a size of less than one micron. This extremely small particle size increases the surface area of Calcium when applied to a crop, helping to increase the rate and volume of assimilation, and the mobility of the Calcium once assimilated by the plant.



## Microelements 1-0-0

- Ferticell® Microelements is a blend of micronutrients, freshwater algae extract, nitrogen and plant extracted amino acids (derived from soy bean).
- Ferticell® Microelements is a natural liquid micronutrient blend of high quality chelated micronutrients. Ferticell® Microelements helps to boost the synthesis of enzymes, the process of photosynthesis, and the absorption of water.
- By using Ferticell® Microelements throughout the crop cycle many nutrient deficiencies in the plant and soil can be avoided before they become a problem.
- Unlike many micronutrient blends, Ferticell® Microelements are immediately available to the plant. Using natural unicellular algae cells helps to promote biological activity and ensure the maximum uptake and assimilation of nutrients by acting as a delivery system directly to the plant cells.

## Nutri-Plus 2.5-0-0

- Ferticell® Nutri-Plus is a product containing active unicellular freshwater algae cells and high levels of amino acids. The algae cells are especially important in plant nutrition for increased yields, precocity, and quality in all crops. Amino acids act as natural stimulators for biological activity. They greatly influence rapid fixation of carbonic anhydride for photosynthesis, while producing a regulatory and balanced endo-cellular activity. The balance of amino acids results in an increased efficiency of protein formation, fertility of pollen, and resistance to cold weather stress.
- Ferticell® Nutri-Plus consists of unicellular algae cells and amino acids which are completely neutral and biologically active, making assimilation of nutrients rapid and complete. The amino acids are incorporated into the metabolic cycle of the crop, saving the plant energy for increased production.



## Microelements 1-0-0

- Ferticell® Microelements is a blend of micronutrients, freshwater algae extract, nitrogen and plant extracted amino acids (derived from soy bean).
- Ferticell® Microelements is a natural liquid micronutrient blend of high quality chelated micronutrients. Ferticell® Microelements helps to boost the synthesis of enzymes, the process of photosynthesis, and the absorption of water.
- By using Ferticell® Microelements throughout the crop cycle many nutrient deficiencies in the plant and soil can be avoided before they become a problem.
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# STRUCTURES



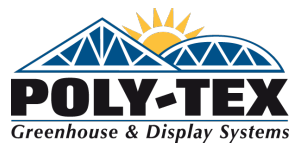
## BRANDS CARRIED

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p. 2-4  
[agratech.com](http://agratech.com)



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p. 5-6  
[poly-tex.com](http://poly-tex.com)



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p. 8  
[totalenergygroup.com](http://totalenergygroup.com)



Agra Tech has had you (and your crop) covered for over 45 years. Specializing in quality commercial greenhouses and offering the broadest possible spectrum of model and function. They have greenhouses in all 50 United States and in many international locations. All of their greenhouses are designed to optimize your Natural Ventilation needs.

### Solar Light

The Solar Light is known as the “Dry House” due to its built-in condensate removal system, it is the obvious choice for your highest quality, most valuable crops, from your most critically sensitive environmental requirements to mass production areas and head houses. A greenhouse for all seasons, hard glazed with multi-wall or corrugated polycarbonate. The Solar Light provides the driest environment possible by use of its condensate control system built into top chords, purlins, and under gutter channel. Dry House, Solar Light, natural ventilation greenhouse.

**Features:**

- Widths of 18', 24', 30', 36', 42', 48' and 50' available.
- Eave heights of 8', 10', 12', and 14'. Other heights may be available upon request.
- 6:12 Roof Pitch advantages: Aids in condensate removal. Air circulation is improved due to large air mass. Enhances natural roof ventilation systems. Gathers low winter sunlight. Sheds snow to increase snow loading. Ample room for energy curtain systems, lighting, heating, roof vents equipment and transportation systems.
- Strong 4" square sidewall columns with kneebraces to absorb the wind load.
- 4" square interior columns 12' on center for most sizes
- Ideal for natural ventilation.
- Single or Double Ridge Vents, optional
- 12' on center column and truss spacing admits more light, gives more freedom of movement.
- Designed for Corrugated Polycarbonate, or Multi-Wall (8mm Twin-wall or Triple Wall) Polycarbonate.



### Sawtooth

The Agra Tech Greenhouse Sawtooth is a low profile single slope truss. Heated air travels up the roof slope away from the plants. The vertical roof section can be outfitted with a rack and pinion vent or roll up wall.

With a vent or opening wall on the windward sidewall and vent on leeward roof, excellent ventilation is achieved.

**Features:**

- Widths 30' & 32'. Other widths available upon request.
- Eave heights of 8', 10' and 12'. Other heights may be available upon request.
- 3:12 Roof Pitch
- Strong 4" square sidewall columns with kneebraces to absorb the wind load.
- 2 7/8" or 4" square interior columns 12' on center
- Ideal for natural ventilation.
- Vent or opening wall at peak, optional
- 12' on center column and truss spacing for most loads





### Insulator

The Insulator Greenhouse is a Gutter Connected structure to be covered with poly. Available in Code or Non-Code versions. This house provides quality, strength and ease of construction.

The Insulator Greenhouse performs well in all climates from Alaska to Mexico and beyond.

#### Features:

- Gutter Connected Widths of 18', 21', 24', 27', 30', & 35'.
- All Galvanized Steel bolt-together frame.
- All Arches are 6' on-center. Six foot arch spacing is the optimum for poly roof to prevent rain and wind pockets.
- Heavy Duty Commercial grade Gutters of (10 and 12 gauge) at side and mid columns. The gutters are 11" wide and 6" deep.
- 3 runs of condensate purlins are standard on all Insulator houses to be covered with poly. Condensate gathering purlins are a strong "Z" design and protect plants from condensate drip.
- 4" square sidewall columns 12' on center are standard. 4"sq or 2 7/8" interior columns 12' on center are standard. Wide spans and heavy loads may use 6' on center interior columns.
- International Building Code of 12/100C is standard. Snow loads and wind exposures are also available on some widths. Call for availability.
- All these houses are available as a Non Code version, the Insulator-NC.



### Continental

Agra Tech's Continental Greenhouse is a Gothic Gutter Connect structure that can be covered with poly, 8mm Twinwalled Polycarbonate or Corrugated Polycarbonate. A ridge vent can be added to provide excellent natural ventilation whether the roof is covered with poly or polycarbonate. Extra large gutters add strength and carry 60% more runoff away from the greenhouse.

The Continental is recommended for all climates, from snow to sun.



### North Slope



The North Slope is designed to shed snow and allow maximum light into the greenhouse for Northern climates. We have found that its generous Gothic peak makes it easy to cool with natural ventilation so that it excels in mild to hot climates as well. The North Slope is a commercial grade quonset / high tunnel greenhouse. The North Slope's Gothic arch design with no flat spots is stronger and drips less.

### Thermolator



The Thermolator is one of our most popular quonset greenhouses, aka Tunnel. Growers have successfully built thousands of Thermolator greenhouses / tunnels since 1980. The Thermolator boasts the best value per square foot of all our greenhouses as it can be used for practically all crops in almost all weather conditions and climates.



### Rolling Bench



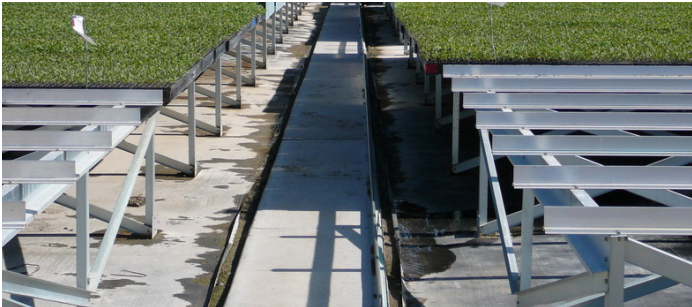
Simply put, Agra Tech Rolling Benches increase total utilization of your greenhouse space by reducing the number of aisles. Aisles that can't be used for growing are eliminated making that space available for production, adding significant square footage of growing area. Rolling benches work by installing a fixed base and using a set of rolling shafts, the bench top is rolled back and forth to open or close aisles as needed.

### Stationary Bench



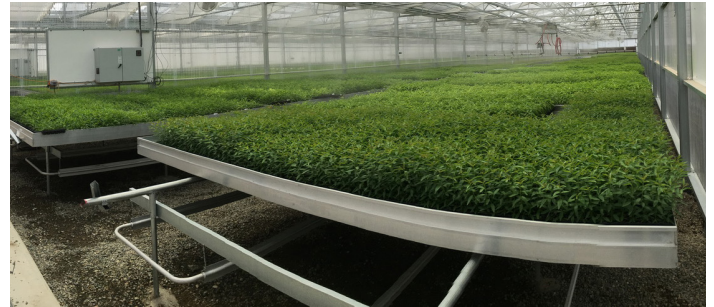
For crops that require constant attention and when all benches need to be accessed simultaneously, Stationary benches should be used. Designed with the same quality galvanized steel as the rolling benches. Durable and easy to install. Benches are constructed with galvanized steel 1 1/2" wide cross bars, 2" id. "U" shaped legs, and break formed point fastened runner's which run the length of the bench.

### T-Rail Bench



T-rail refers to an aluminum extrusion that is in the shape of an inverted T. They are designed for Styrofoam plug trays that are stiff enough to span between the extrusions. A base of steel bench legs and runners is required to support the trays. T-rail benches are fixed. The trays can be slid from the center aisle of a greenhouse to the sidewall or to one end for pickup and transfer. This system is used for intensive large scale transplant production.

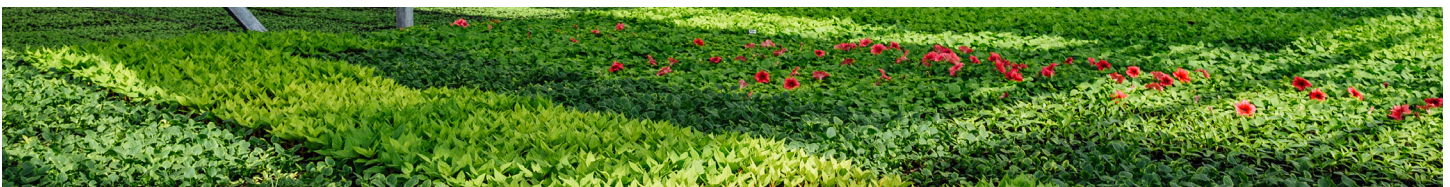
### TAVA Bench

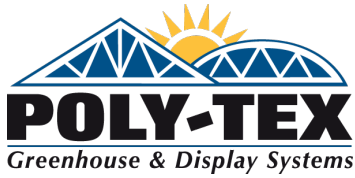


Almost every phase of plant cultivation requires transport of materials or movement of labor force. Recognized worldwide, TAVA Systems moving table solutions are greenhouse automation systems that take all aspects of your operation into account. TAVA and Agra Tech sales engineers will design and plan your bench project from the ground up, integrating transportation and even robotic components along with the greenhouse.

### Caster Bench

This is a high end bench on caster wheels that can be rolled out like a shopping cart to display crops. Agra Tech's Caster Bench is a rolling stackable bench that has a pre-welded frame. Bench tops are bolted to the stackable legs. Simply remove 3 bolts and then the tops can be removed and the bases stacked. Caster Benches typically have 13 ga. hot dipped galvanized Expanded Metal bench tops.





Whether you're growing, retailing, or throwing a party - Poly-Tex has got you covered. Not only are these structures economical but they also save you time and money while protecting your profits. Poly-Tex shade structures can be covered by many percentages of shade cloth to suit your growing and/or retailing needs and the needs of your plants.

### W-Truss Shade Structures

Shade with style! The Poly-Tex W-Truss shade structure has always combined strength with elegance. Now our new peak roof option allows you to add style to your garden center. It mirrors the look and feel of a greenhouse while increasing the expansive feeling of an outdoor retail space. Both roof options are still built on a frame that is one of the strongest retail shade structures in the industry. Why choose? Now you can have form and function in one structure. Available in sizes ranging from 20'x20' to 100'x200'.

#### Very strong

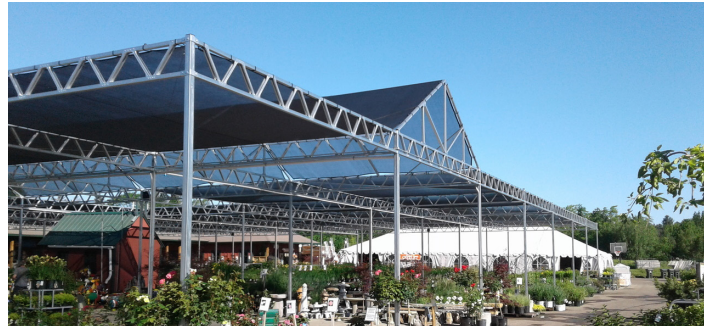
- Sturdy, horizontal truss allows for long spans between supports.

#### Quick install

- Easy shade attachment system provides for quick installation and removal.

#### Shade cloth

- A variety of shade cloths are available to provide the best environment



### SunStopper Shade Structures

The sun can be brutal on tender young plants. The Sunstopper will protect your valuable product from scorching and windburn while reducing water requirements. It features straightforward assembly, expandability and is built tough with 2.5" x 12 gauge, galvanized steel for years of trouble free service. Available in 10' x 20' and 20' x 20' standard blocks, the Sunstopper is also offered in custom configurations to meet your existing layout.

#### Multipurpose structure

- Commercial or retail, the Sunstopper is a low-cost solution.

#### Shade cloth

- A variety of shade cloths are available to provide the best environment.

#### Quick install

- Easy attachment system provides for quick installation and removal.



### Poly-Tex BH3000

Get ready for Mother's Day sales with the BH3000 Basket Hanger. Display hanging baskets now and then use the optional wreath kit to convert it to a high-capacity wreath display during the holidays. This durable, versatile, year-round fixture is also available with optional casters and powder coating.

**Dimensions:** 72" w x 73"d x 82"h



### Poly-Tex BH4000

Does it look like frost? Respond quickly with the BH4000 Narrow Basket Hanger display. Designed for mobility, this unit comes standard with casters and rolls easily through a 36-inch door frame. Your merchandise will catch their eye even on the fly with the BH4000

**Dimensions:** 76" w x 34" d x 78"h

### Poly-Tex BW3000

Caution: Curves ahead! Enhance your garden center's flow with the new basket wave. This high capacity display provides an elegant way to showcase your hanging baskets in an easy-to-shop wall of color. Start with the 12-foot base unit and easily add 6-foot sections to create an endless sweep of color.

**Dimensions:** 150" w x 79"d x 78"h



### Poly-Tex BT3000

This fun way to showcase your hanging baskets and other hanging merchandise, such as wind chimes and birdhouses/feeders, is sure to be on your wishlist for spring sales. Think vertical merchandising that can be shopped from any side. Imagine a tower of hanging baskets or a whirl of wind chimes!

**Dimensions:** 46" w x 46"d x 90"h

### Poly-Tex PX7020

A little variety can make a big difference. That's why we offer our PX7020 display. Shelf depth reduces gradually from 36 to 24 to 18 inches for improved product placement and visual appeal. Options like hanging basket purlins, casters, sign holder and powder coating allow for even greater visual range

**Dimensions:** 72" w x 73"d x 82"h

**Construction:** Galvanized Steel

**Capacity:** (24) 1020-style flats per 6-foot section

- Optional 47.5" high double purlin holds (12) 10-inch hanging baskets per 6-foot section



Part#	Description
JPA119	Single Unit w/expanded metal (standard)
JPA122	Single Unit w/Double Purlin
JPA127	Single Unit w/Sign Holder
JPA130	Single Unit w/Casters
JPA132	Single Unit w/Casters + Purlin
JPA144	Single Unit w/Casters + Sign Holder
JPA150	6 foot extension for single unit
JPA217	6 foot extension for single unit w/Purlin
JPA222	6 foot extension for single unit w/Sign holder

#### Color Options



**Black, Red or Emerald Green Powder Coating**



## BENCHES & BENCH COVERINGS

### Nexbench



Nexbenches use a specially designed aluminum perimeter rail and Nexsteel tubing to be a flexible and strong bench system. The benches are either stationary benches or a rolling top bench. The rolling bench uses a single floating aisle to allow for more bench square footage inside the greenhouse. These benches are durable enough to be used in commercial growing operations and attractive enough to be used for retail displays. The tops can be covered with different coverings depending on the end use. For ease of erection and maximum strength, all tops and leg frames are factory welded with no nuts and bolts required

### Dramex Coverings



- Dramex expanded metals for greenhouse bench tops are designed to be structurally strong but lightweight for ease of handling.
- The open mesh provides free passage of air, prevents accumulation of excess moisture and sediment and keeps benches clean and dry.
- Insects are discouraged by the metal surface.
- Provides years of maintenance free use
- Available for rolling and stationary bench systems.
- Available in galvanized steel and aluminum.
- Dramex style 3/4 - 13 hot dip galvanized
- Flattened styles also available for flats and trays.

### A-V Lifetime Bench Systems



- 20,000 psi Fiberglass; stronger, lighter and more durable than wood
- Resists weathering, will not rust
- U.V. protected
- Easy to clean and disinfect
- User friendly and easy to assemble
- Permanent or removable legs for compact storage
- Design and size flexibility
- Easy interlocking assembly
- Installs on any type of frame

### Bench Mesh Coverings



This extraordinary "galvanized-after-welding" mesh delivers all the strength you need and our latest innovation, the Channel Bench Top, allows internal placement of all heat and irrigation tubing so they move when the bench moves, without interfering with the bench top. Better yet, the bench top is less expensive than other fabricated bench frames and requires less labor. Channels are supplied loose, to be installed in the field or pre-assembled to bench panels. Palletized systems are also available. Channel spacing determines the load that can be supported, so we can make a bench so rugged you can walk on it.



In 1986, Total Energy Group founders Peter Stuyt and Bert Neeft settled in Carpinteria CA, a thriving community of greenhouse flower growers. Bringing Dutch greenhouse technology and expertise to the area, they started installing light deprivation and shade systems for growers looking to automate and save energy. Working with growers, greenhouse manufacturers and distributors, has driven flexibility and innovation.

### Light Deprivation Systems



**Complete black out provided by Total Energy Group's fully automated Light Deprivation Systems.**

You can expect our light deprivation systems to make your crop flower reliably, securing the steady production flow modern greenhouse operations want. Our systems can be engineered to fit a wide range of greenhouse types and styles.

### Shade Systems



**Sun protection and energy savings provided by Total Energy Group's fully automated Shade Systems**

During the day time our systems will protect your plants from receiving too much light and heat, creating a growing environment in which your crop will thrive. At night closing the system will save on nighttime heating costs by containing the heat underneath the shade cloth.



# COVERINGS



## BRANDS CARRIED

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p. 2  
[poly-ag.com](http://poly-ag.com)

**Green-tek**

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p. 3-5  
[green-tek.com](http://green-tek.com)



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p. 7  
[hessaire.com](http://hessaire.com)



Poly-Ag Corp. was established in 2003. Located in San Diego, CA - specializing in advanced polyethylene films and a wide variety of nets for the agricultural sector. Poly-Ag Corp. is affiliated to A.A. Politiv Ltd. (1999) Enterprises; one of the world's leading manufacturers of agricultural polyethylene films since 1985. Poly-Ag Corp. has earned a reputation for reliable and dedicated service

### Poly-Ag Clear

Using their advanced technology, Poly-Ag has created a clear, tougher, longer lasting greenhouse film.

Manufactured with state-of-the-art extrusion equipment and new high tech polymers, Poly-Ag Clear offers growers:

- Superior Strengths and Toughness
- Higher Light Transmission
- Guaranteed Longer Life (4 Years)

Poly-Ag Clear offers the best value in a 6-mil, 4-year greenhouse film with the following improved properties over our older generations of greenhouse covers.

- Folds up to 210% stronger
- Tear Strength up to 164% higher
- Puncture Force up to 12% higher
- Advanced UV up to 33% longer life



Gauge	UV Stabilized?	Warranty?	Thermal?	Bee Compatibility?	White Opacity?
6 mil	Yes	Yes	No	Yes	Optional
	4 years	4 years			



### Poly-Ag Thermal

**Superior Protection - Constant Heat Retention - Directional Condensation Control**

Every grower strives to produce the best crop they can while keeping production costs to a minimum. The covering overhead is a major component, and when extras are added - anti-condensate, thermal capabilities or bee compatibility - grower costs start to rise.

Poly-Ag is sensitive to the needs of our customers and has designed a new "custom designed" greenhouse poly. Poly-Ag Thermal - a new generation of horticultural films - combines all of these extras into one package. Superior drip control, energy savings and bee compatibility are all packaged together to provide growers with one film at one cost. Why pay extra when Poly-Ag Thermal is all you need!

Gauge	UV Stabilized?	Warranty?	Thermal?	Bee Compatibility?	Anti-Condensate
6 mil	Yes	Yes	Yes	Yes	Yes
	4 years	4 years			

### Poly-Ag Cool

Introducing Solar-Ice from AT Films, a new-generation four-year film that will lower greenhouse temperatures in the daytime heat. SolarIce is the first greenhouse film that improves growing conditions by using controlled diffusion to influence the light reaching the plant.

Solar-Ice is a highly diffusing film designed to make more light available to plants by increasing the amount of diffused light to close to the maximum, while reducing short wave infra-red radiation and enhancing useful light in the PAR range. This leads to healthy, bushy plants while reducing greenhouse temperatures. What's more, there's less risk of plants scorching while achieving an optimum rate of photosynthesis. Poly-Ag Cool creates higher yields and stronger-than-normal root systems.



## ThermaGlas Polycarbonate Twinwall & Triplewall Sheeting

ACW Supply Stocks 4' and 6' wide 8mm Twinwall Polycarbonate in up to 32' lengths and 4.16' Wide Clear and Solar Soft Polycarbonate in up to 24' long sheets. We cut to the nearest foot (and charge to the nearest foot). For custom orders outside of these stock materials crating and shipping charges will be added. If we have a full truck of material coming in to warehouse you can usually add your custom order to avoid these extra charges, but you will need to wait for your custom order until we do need a stock truck. Call us for more information.



Dimensions										
Product	Thickness		Rib Spacing		Standard Widths		Weight		Lengths	Colors
	mm	in.	mm	in.	mm	in	g/m <sup>2</sup>	psf	ft.	
Twin-Wall	4	5/32	6	~1/4	1200 1220 <sup>(1)</sup> 1810 1830 <sup>(1)</sup> 2100 <sup>(2)</sup>	47.25 48 <sup>(1)</sup> 71.25 72 <sup>(1)</sup> 82.68 <sup>(2)</sup>	777	0.16	24' in stock. Available up to 39' <sup>(3)</sup>	Clear Opal Gray Solar Soft
	6	1/4	6	~1/4			1300	0.27		
	8	5/16	10	~3/8			1500	0.35		
	10	3/8	10	~3/8			1700	0.35		
Triple-Wall	8 <sup>(2)</sup>	5/16	20	~13/16	1200	47.25	1700	0.35	24' in stock. Available up to 39' <sup>(3)</sup>	Clear Opal Gray Solar Soft
	10 <sup>(2)</sup>	3/8	20	~13/16			1990	0.41		
	16	5/8	20	~13/16			2670	0.55		

(1) Full 48" and 72" widths with guaranteed condensation control may be available upon request.

(2) 2100mm (82.68") wide panels not available in all thicknesses.

(3) Please note that parcels longer than 20' may require lead-time an additional freight surcharges.

Thermal		Value		Test Method
No. of Layers	Panel Thickness	R-Factor	U-Factor	
Twin-Wall	4mm	1.49	0.67	ASTM C-177
	6mm	1.62	0.62	
	8mm	1.72	0.58	
	10mm	1.89	0.53	
Triple-Wall	8mm	1.99	0.50	ASTM D-648
	10mm	2.08	0.47	
	16mm	2.36	0.42	
Optimal Service Temperature Range		-40° F to +248° F (-40° C to +120° C)		ASTM D-1525
Maximum Service Temperature		270° F (132° C)		
Heat Deflection Temperature		-103° F (-75° C)		
Heat Deflection Temperature		275° F		
VICAT Softening Temperature		300° F		ASTM D-696
Coefficient of Linear Thermal Expansion		3.6 x 10 <sup>5</sup> in./ in. °F		ASTM C-177
Thermal Conductivity (BTU-in/hr-ft <sup>2</sup> - °F)		1.45		



Mechanical		
Tensile Strength At Yield (0.4 in/min)	9,400 psi	ASTM D-638
Tensile Strength At Break (0.4 in/min)	8,800 psi	
Elongation At Yield (0.4 in/min)	6%	
Elongation At Break (0.4 in/min)	> 90%	
Tensile Modulus of Elasticity (0.4 in/min)	350,000 psi	
Flexural Modulus (0.052 in/min)	380,000 psi	ASTM D-790
Flexural Strength At Yield	14,500 psi	ASTM D-790
Rockwell Hardness	118 R Scale	ASTM D-785
Density	75 lb/ft <sup>3</sup>	ASTM D-792
Specific Gravity	1.2 g/cc	ASTM D-792

Optical								
Property	Test Method	Panel Thickness	Clear		White Opal		Gray	
			Twin Wall	Triple Wall	Twin Wall	Triple Wall	Twin Wall	Triple Wall
PAR Light Transmission	ASTM D-1003	4mm	82%		30%		35%	
		6mm	80%		20%		35%	
		8mm	80%	76%	45%	45%	35%	35%
		10mm	79%	76%	30%	45%	35%	35%
		16mm		76%		35%		35%
Rockwell Hardness	118 R Scale	All Thicknesses	1.59					
Density	75 lb/ft <sup>3</sup>	All Thicknesses	< 1					

Fire / Ignition / Smoke	Value	Test Method
Flammability rating	CC1*	ASTM D-635-74
Self Ignition	1000° F	ASTM D1929
Flash Ignition	930° F	ASTM D1929
Smoke Density	8.6%	ASTM D2843
Smoke Developed	350 (Class A)	ASTM E-84
Flame Spread	15 (Class A)	ASTM E-84
Vertical Burning	UL94-5VA	UL94-1998

\*Select Products Apply

		Recommended Span Under Given Load (Wind/Snow Load)									
Profile	Panel Thickness	10 psf 70 kg/m <sup>2</sup>		15 psf 70 kg/m <sup>2</sup>		20 psf 100 kg/m <sup>2</sup>		25 psf 125 kg/m <sup>2</sup>		230 psf 150 kg/m <sup>2</sup>	
		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
Twin-Wall	6mm	800	32	700	27	650	20	620	25	600	24
	8mm	1000	39	900	35	800	32	750	30	735	29
	10mm	1250	49	1080	42	940	37	900	35	850	33
Triple-Wall	8mm	975	38	875	34	780	31	735	29	720	28
	10mm	1220	48	1050	41	920	36	870	34	820	32
	16mm	1600	63	1400	55	1250	49	1150	45	1050	41

1.) The data is based on load tests on typical multi-wall sheets and additional extrapolations. 2.) The data is based on a maximum deflection of 1/20 of the span (5%) using continuous, multi-span supports. 3.) The data refers to mid-spans. The edge spans (lower and upper ends) should be smaller by about 20%. 4.) The sheets can withstand even higher loads or wider span without failure, but the deflection may then grow to almost 1/10 the span (10%)

## DynaGlas

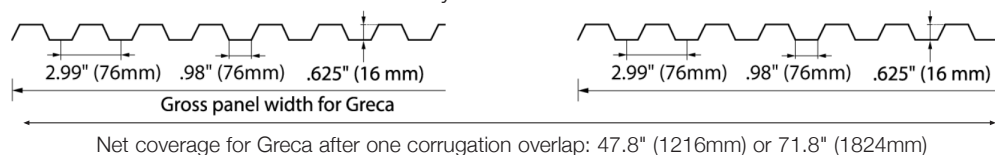
DynaGlas was the first corrugated polycarbonate ever introduced to the commercial greenhouse market nearly three decades ago. Since then, DynaGlas has become an industry standard against which all other corrugated polycarbonate products for the horticulture market are compared. DynaGlas includes several products with a variety of features engineered specifically for commercial greenhouse use.



Dimensions	Value (English Metric)	
Panel Widths (gross)	49.6" or 73.6" (1260mm or 1870mm)	
Panel Width (net after one corrugation overlap)	47.8" (±4ft) or 71.8" (±6ft) (1216mm or 1824mm)	
Panel Lengths (custom cut to specification)	3' to 38' (914mm to 11580mm)	
Corrugation/Wave Depth	Greca 0.625" (16mm)   Omega .591" (15mm)	
Corrugation/Wave Pitch	2.99" (76mm)	
Weight	Greca .24 lbs./sf (1220 g/m <sup>2</sup> )   Omega Greca .23 lbs./sf (1104 g/m <sup>2</sup> )	
Thickness	0.03" (0.8mm)	
Number of Corrugations/Waves	17 (49.6" panel) or 25 (73.6" panel)	
Thermal	Value (English Metric)	Test Method
Optimal Service Temperature Range	-40° F to +212° F (-40° C to + 100°C)	
Maximum Service Temperature Range	270° F (132° C)	
Minimum Service Temperature Range	-103° F (-75° C)	
Heat Deflection Temperature Load, 275° F (psi)	275	ASTM D-648
R / U-Factor and K-Value	R = .83 / U 1.20 = (K = 5.8 W/m <sup>2</sup> K)	
Coefficient of Linear Thermal Expansion	3.6 x 10 <sup>-5</sup> in./in./°F (6.5 x 10 <sup>-5</sup> cm/cm/°C)	ASTM D-696
Thermal Conductivity BTU/lb. (F°)	1.4	ASTM C-177
Mechanical		
Tensile Strength at Yield, 2 in./min. (psi)	9,000	ASTM D-638
Tensile Strength at Break, 2 in./min. (psi)	9,500	ASTM D-638
Elongation at Yield, 2 in./min. (%)	> 6%	ASTM D-638
Elongation at Break, 2 in./min. (%)	> 80%	ASTM D-638
Tensile Modulus, 0.04 in./min. (psi)	340,000	ASTM D-638
Flexural Modulus, 0.052 in./min. (psi)	310,000	ASTM D-790
Flexural Strength at Yield 0.052 in./min. (psi)	13,500	ASTM D-790
Shear Strength (psi)	6,180	Factory Test
Izod Impact Strength, Notched (73° F), ft./lb./in.	18	ASTM D-256
Rockwell Hardness, R Scale	118	ASTM D-785
Impact Resistance (falling dart)	444 in. lbs. (50 joules)	ISO 6603/1
OSHA point-29	Passed 200 lb.	CFR 1910.23 (e) (8)
Uplift	Passed UL 90	UL 580
Longitudinal Bending Radius	16' (4.9 m) recommended; 13' (4m) min.	

### Panel Dimensions

DynaGlas Plus Clear and SolarSoft is available in either 49.6" (47.8" net width) or 73.6" (71.8" net width). DynaGlas Plus White, Gray and all SE products are available in 49.6" width only.



## Sun Clear Coating

### Sun Clear Increases Solar Light and Reduces Heating Costs

The original “No-Drip” coating used by greenhouse growers here and abroad, which transmits more light to growing plants, saves energy and virtually eliminates all dripping and fogging in plastic houses. Sun Clear is used to stop dripping in greenhouses. Improves plant quality due to less Botrytis and other plant diseases. As much as 50% more sunlight is transmitted through the Sun Clear treated plastic. Will adhere to any type of plastic or metal. It is non-toxic, insoluble, water-dispersible and easily sprayed. Tested in over 20 countries from the arctic to the tropics.



Item Number	Size	(Conc. Vol.)	Av. Dil. Vol. (gallon)	Coverage (Avg. Sq. Ft.)
MISSC1P	Pint	1 pt (0.4731)	25	5,000
MISSC1Q	Quart	1 qt (0.9461)	50	10,000
MISSC1G	Gallon	1 gal (3.7851)	200	40,000

## Visor Coating - Shading Compound

Visor diffuses light and reduces heat on greenhouse surfaces of glass, and hard or soft plastic glazing materials. Visor is formulated to professional growers’ expectations under the toughest growing conditions.

### Directions for Use:

For typical shading requirements combine 1 part Visor with 8 parts water to create your shading mixture. Visor is conveniently packaged in a concentrated form and is easily diluted with water depending on shading needs.

### Coverage:

Visor should be applied to achieve the most uniform and effective coverage. Brush or roller applications may also be used. Coverage will vary according to application, dilution ratio and the application technique. Higher dilution ratios (less concentrated) will result in a lighter shade while lower dilution ratios will result in a darker shade. (1:8 is recommended for most applications.)

Code: **BUVIS2.5G**

Dilution Ratio	Total Light Reduction
1 to 8	37.29%
1 to 5	45.60%
1 to 3	53.77%
1 to 1	78.60%

## White Vinyl Tack Strip

Tack Strip provides a quick fastening method for stapling plastic film to wood framing. It saves hours of application and removal time while acting as a batten strip to hold plastic in place during cold and in the wind. Just staple every 4” holding tape tight. The tape is a white vinyl strip 3/4” wide by 1/32” thick. It is formulated to resist U.V. radiation and extreme cold. Available in 500 foot rolls in cases of 4.

**Rolls:** 500 ft. x 3/4”

**Item Number:** **GATS**

## Poly Patching Tape

A highly U.V. stabilized and waterproof 6 mil polyethylene tape used for repairing vinyl and plastic films.

Item Number	Size
JCPP2I	Pint
JCPP4I	Quart
JCPP10I	Gallon

## Pak Guard Insulator Tape

A non-woven polyester, U.V. fabric tape that protects and extends the life of your greenhouse covering. It is applied to points of contact between the frame and the covering to reduce chafing and heat buildup which can cause excessive wear and early deterioration of covering materials. Pak Guard comes in a convenient 1 1/2” x 40’ roll and is easy to use. Simply peel off the paper liner and press it directly onto all frame surfaces that support or contact the covering. Pak Guard adheres well to metal, wood, plastic and painted surfaces, but it’s not recommended for oil-treated wood surfaces. (Oiled wood prevents proper adhesion and can damage covering materials.) Proven effective and economical after several years of use by professional growers. One application can last many years.

How many rolls will you need? Multiply the number of arches or truss supports by width of covering. Divide total linear feet by 40 (40’ roll).

**Item Number:** **PUIT**

## Polypropylene Batten Tape

Used to batten down poly-film on greenhouses. Keeps film from fluttering. Protects film against tears and punctures and reduces noise factor. Does not cast shadows.

2.75” x 300’

**Item Number:** **GABT**

## Poly Lock Wire and Base



Poly Lock Wire is an efficient and easy to install system for fastening polyfilm onto a greenhouse. Poly Lock Wire Base comes in 12 foot sections, and the wire comes in 6 foot 6 inch sections. You need 2 wires per base section.

Item Numbers: Wire - **MDMWW**, Base - **MDMPL**

## Air Transfer Kit

A simple mechanism used to transfer air from one Poly Inflated Roof to another.

Item Number: **GANOATK**

## MynFan

Item Number	CFM	Volts	Amps	Hz	RPM	HP
<b>VBM60</b>	60	115	.42	60/50	3030	1/125
<b>VBM148</b>	148	115	1.37	60/50	3160	1/25

### Round Bracket

Round Brackets are used for installation of 60 CFM inflation fans.

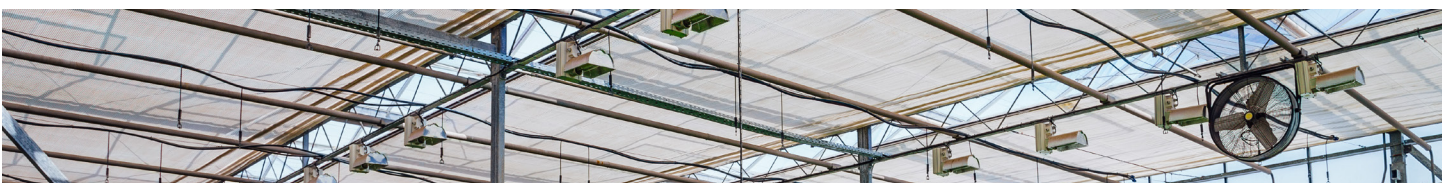
Item Number: **JC4PN0030**



### Square Bracket

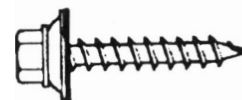
Square Brackets are used for installation of 60 CFM inflation fans.

Item Number: **JC4PN0035**



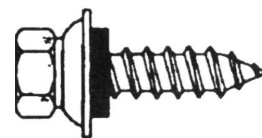
## Wood Screws

Item Number	Size	Length	Pieces Per Carton	Lbs. Per M Pieces
GA#10TS1I	#10	1"	5000	7.2
GA#10TS1.5I	#10	1 1/2"	5000	10.8
GA#10TS2I	#10	2"	4000	13.1



## Metal Screws - Self Tapping

Item Number	Size	Length	Pieces Per Carton	Lbs. Per M Pieces
GA#14TS.75I	#14	3/4"	2500	14.9
GA#114TS1I	#14	1"	2500	16.5
GA#14TS1.5I	#14	1 1/2"	2500	21.2
GA#14TS2I	#14	2"	2500	26.3



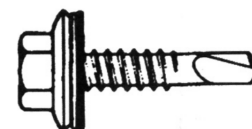
## Metal Screws - Self Drilling

Item Number	Size	Length	Pieces Per Carton	Lbs. Per M Pieces
GA#14DS.75I	#14	3/4"	2500	16.7
GA#14DS1I	#14	1"	2500	18.5
GA#14DS1.5I	#14	1 1/2"	2500	23.1



## Stich Screw for Lapping Corrugated Polycarbonate

Item Number	Size	Length	Pieces Per Carton
GA#10TS1I	#12	3/4"	2500



## Pop Rivet with Washer for Lapping Corrugated Polycarbonate - Item Number: GAPR

### Bar Cap Screw

Item Number: [GALBS](#)

Use to connect Bar Base to Bar Cap

### Corrugated Horizontal Strip, Lexan Available in 2 Weights

Item Number: [GALC3F \(Light\)](#)

Item Number: [GALCH3F \(Heavy\)](#)

36" Long

### Fiberglass Flat Vertical Strip

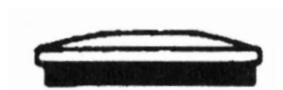
Item Number: [GAVC3F](#)

1" x 36"



### 1" Bonded Washer

Item Number: [GABW1I](#)



### Lap Nut

Item Number: [GALN](#)



### Bar Base

Item Number: [GALBB](#)

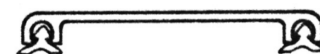
Use to connect panels on roof



### Bar Cap

Item Number: [GALBC](#)

Used to secure panels to roof



### Bar End Cap

Item Number: [GALBEC](#)

Used to secure roof to roof gable ends



### Bar Cap Gasketing

Item Number: [GALBECG](#)

Used to seal bar cap to bar base

### "H" Channel (Splice)

Item Number: [GALHC12F](#) - 12'

Item Number: [MDMH12](#) - 12'

Used to connect panel together

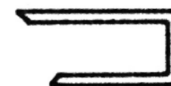


### "U" Channel (Single Gap)

Item Number: [GALUC](#) - 6'

Item Number: [MDMU12](#) - 12'

Used to seal top and sides of panel 8mm x 6'





# CLIMATE



## BRANDS CARRIED

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p. 2  
[agam-greenhouses.com](http://agam-greenhouses.com)



p. 3  
[green-tek.com](http://green-tek.com)



p. 4-11  
[acmehort.com](http://acmehort.com)



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[schaeferventilation.com](http://schaeferventilation.com)



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[modinehvac.com](http://modinehvac.com)



Agam Develops world changing energy products leading in the field of energy efficiency related to engines and for air conditioning. Agam Greenhouse Energy Systems Ltd is a privately held Israeli company, founded in 2008, comprised of a highly technical team aimed at continuing product development and providing service and support to distributors and end users worldwide.

### Agam VLHC System

The Agam VLHC is a unique & revolutionary Dehumidifying, Filtering & Heating system for all controlled environments. Patented worldwide, the VLHC has been proven to efficiently reduce humidity while neutralizing airborne pathogens such as botrytis. VLHC converts humid air (water & heat) from inside the greenhouse into water vapor by blowing the air through a matrix of desiccant-filled elements in a compact cooling tower. In this process, water vapor is warmed up by the desiccant and this heat is released by the unit into the greenhouse as warm, dry air.

Typical energy-intensive heating & dehumidification systems rely primarily on ventilation, which releases excessive humidity along with the energy used to heat that air. The VLHC dramatically lowers your energy consumption by enabling your operation to remain closed & maintains healthy adjustable humidity levels according to your needs.

- Cleans and filters the air
- Saves 40-70% energy
- Reduces humidity
- Facilitates chemical free and organic agriculture



- Optionally, when heating is un-necessary, the VLHC can provide only little heat, or no heat and little night cooling.
- Recommended coverage area for vegetables 1000 M<sup>2</sup>
- Recommended coverage area for flowers 1500 M<sup>2</sup>
- Average Energy saving 70 kW

In this system, vapor condensation naturally warms up the desiccant; the heat is released by the unit into the greenhouse/warehouse as warm, dry air. The VLHC efficiently converts the latent heat, stored in the water vapor, to usable heat, a welcome by-product in cold-climate greenhouses, thus dramatically reducing energy consumption.





Green-tek's powerful and economical line of specialty circulation and exhaust fans improves the growing environment of any building by refreshing stagnant air, reducing temperature, and humidity variations. Green-tek's team of design engineers has developed ventilation components that are energy efficient, quiet, and low maintenance.

## High Velocity Basket Fans

Our High velocity basket fan is the most powerful and efficient basket fan available in the market today. Our tapered intake and exhaust guard is designed for optimum performance, maximum air velocity and distance covered. The OSHA approved guard means the fan can be mounted at any height. Our totally enclosed air over motor can be used in the harshest greenhouse environments. The Green-Tek series High velocity basket fans are easy to install and will give years of trouble free service. The ideal spacing is every 50' but call one of our ventilation design engineers for proper sizing of your HAF fan or a recommendation of a Green-Tek complete Greenhouse environmental system.



### Ideal Applications

- Exceptional air velocity and throw is ideal for cooling and heat de-stratification in greenhouses.
- Also ideal for people cooling in factories, warehouses, sporting events and animal cooling.
- Air de-stratification in buildings can reduce heating and cooling bills by up to 35%.
- Create a consistent air temperature in greenhouses.
- Insect control when creating a velocity of 300 feet per minute.
- Create an air exchange when placed in a wall.
- Used to change the air in shipping trucks and containers when loading or unloading.
- High velocity air pattern can develop an air curtain.
- Machine and compressor cooling.
- Surface drying for wet floors.

### Features

- Standard OSHA safety guards on intake and exhaust.
- Ideal greenhouse spacing 50' but call your Green-Tek ventilation engineer for proper design recommendations.
- Polyester powder coated guards for corrosion resistance
- Versatile wall and ceiling mount pivots 180 degrees and fan can turn 360 degrees.
- Motors are totally enclosed, maintenance free, high efficiency with sealed ball bearing and UL/ULC certified.
- Well balanced and strong blade design for years of trouble free service.
- Industry leading fan efficiency, up to 26 CFM/Watt.



Part #	Size	Drive	HP	Speed	Volt	Ph	AMP	RPM	HZ	CFM @ 0" SP	CFM/WATT @ 0" S.P.	FPM @ 50'	FPM @ 100'	Thrust Efficiency
HVB1211OC	12"	DD	1/10	VAR	115	1	1.0	1725	60	2500/875	16	200	50	-
HVB2013C	20"	DD	1/3	VAR	115	1	3.5	1725	60	6400/2241	17	450	150	-
HVB2412C	24"	DD	1/2	VAR	115	1	4.8	1725	60	8800/3081	18	550	200	12.6 lbs/kw
HVB3612	36"	DD	1/2	1	115/230	1	6.0/3.0	825	60	14000	26	700	350	14.4 lbs/kw

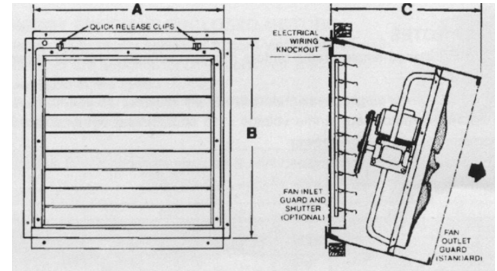
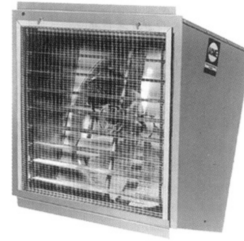
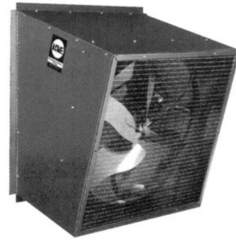


For nearly 75 years Acme Engineering & Manufacturing Corporation has grown to become a world leader in the design, manufacturing, and distribution of fans, blowers, and ventilation equipment. Acme has become an industry leader in providing the customer with a wide range of selections for every possible ventilation requirement. Acme supplies evaporative cooling and heating systems with an excellent line of controls.



### Slanted Housing

- Constructed of heavy gauge galvanized steel or aluminum.
- For model DC, DCA, FQ and FN Fans.
- Energy Savings: with inside shutter saves up to 3750 BTU/HR heat loss per fan.
- High Flow Capacity: shutter directs air to fan-select fan at .05" sp instead of .10".
- Weather Protected: Slant arrangement protects motor and drives from elements.
- Outside Mounting: keeps equipment from blocking aisles.
- Assembled to fan for quick, easy field installation.
- Includes 1"x 1/2" guard on outlet side.
- Shutter and inlet guard held in place with quick release clips.
- Wiring knockout included to allow all wiring connections for motor to be made inside the building.



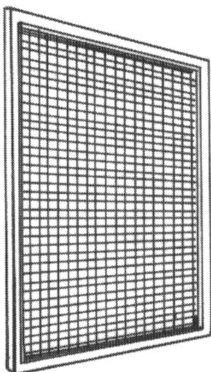
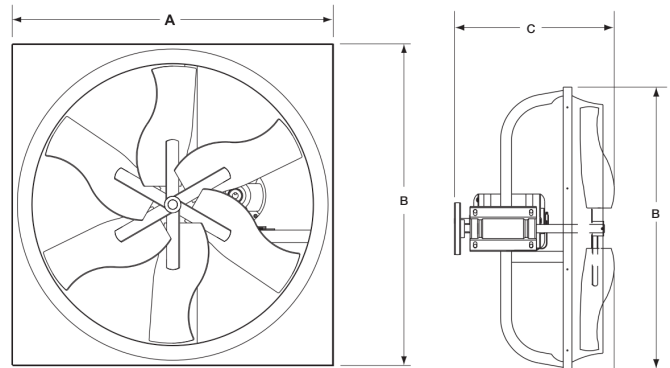
Fan Size	Wall Housing		Auto Aluminum Shutter		Inlet Guard		Inside Framed Opening Dimensions		
	Model	Wt.	Model	Wt.	Model	Wt.	A	B	C
12"	AEWS12FQ	20	AEWAA1515	4	AEGS12	4	16 3/4"	18"	24"
16"	AEWS16FQ	23	AEWAA2020	8	AEGS16	4	21 3/4"	23 1/4"	27"
18"	AEWS18FN	28	AEWAA2222	8	AEGS18	5	23 3/4"	25 1/4"	24"
24"	AEWS24DC	35	AEWAA2727	9	AEGS24	5	28 3/4"	30 3/4"	31 7/8"
30"	AEWS30DC	42	AEWAA3333	13	AEGS30	7	34 3/4"	36 1/2"	34 1/4"
36"	AEWS36DC	46	AEWAA3939	17	AEGS36	10	40 3/4"	42 3/4"	34 1/8"
42"	AEWS42DC	53	AEWAA4545	25	AEGS42	12	46 3/4"	49"	36 3/4"
48"	AEWS48DC	78	AEWAA5454	35	AEGS48	15	54 3/4"	57 1/4"	40 7/8"
54"	AEWS54DC	106	AEWAA6060	40	AEGS54	18	60 3/4"	63 1/2"	39 1/2"

### WB Square Wall Housing

- Constructed of heavy gauge galvanized steel.
- For model DC and DCA
- Provides convenient means to install fan and shutter.
- Outside mounting - keeps equipment from blocking aisles.
- Mounting Flanges for attaching to wall and to attach shutter.
- Assembled to fan for quick and easy field installation.

All guards for wall housings have 1" x 1/2" welding galvanized wire in aluminum frame for inlet side of wall housing. Outlet Guards are included on WS wall housings as standard equipment.

Inlet Guards are mounted with quick release clips.



Fan Size	Wall Housing		Auto Aluminum Shutter		Inlet Guard		Inside Framed Opening Dimensions		
	Model	Wt.	Model	Wt.	Model	Wt.	A	B	C
24"	AEWB24DC	30	AEWAA2727	9	AEGD24	5	28 3/4"	28 3/4"	24"
30"	AEWB30DC	36	AEWAA3333	13	AEGD30	7	34 3/4"	34 3/4"	24"
36"	AEWB36DC	38	AEWAA3939	17	AEGD36	10	40 3/4"	40 3/4"	24"
42"	AEWB42DC	40	AEWAA4545	25	AEGD42	12	46 3/4"	46 3/4"	24"
48"	AEWB48DC	70	AEWAA5454	35	AEGD48	15	54 3/4"	54 3/4"	25"
54"	AEWB54DC	96	AEWAA6060	40	AEGD54	18	60 3/4"	60 3/4"	29"



## Super Windmaster Fans

### DC Series (Steel)

- Six-bladed propeller utilizing a cambered - twist blade designed with a unique dihedral tip for higher air flow capacities at less horsepower.
- Non-overloading design maintains horsepower within catalog range of static pressure, resulting in lower motor load and reduced operating costs.
- Streamlined orifice insures higher air flow capacity.
- Available mounted in either slant or square wall housing.
- Prelubricated oversize ball bearings are double sealed and require no service.
- Improved, more efficient drive assembly and super-duty neoprene balls provides longer service life.
- Heavy duty totally enclosed motors with shielded ball bearings are designed for continuous work load.
- Available in two speed.
- Built in thermal overload for low-line voltage protection on all single phase motors.



### Motor Notes

- All single speed single phase motors are dual voltage (115/230) except 1/4 horsepower.
- All 1/4 horsepower single phase motors are single voltage (115 or 230).
- Two-speed motors are single voltage (115 or 230) and not available in 1 1/2 horsepower.
- Low speed capacity of two speed fans is approximately one half of maximum.
- All three phase motors are triple voltage (115/230/460).

## Aluminum Wall Shutters

- Corrosion resistant heavy gauge aluminum frame.
- Precision counterbalanced aluminum blades open easier and wider to permit higher fan capacity.
- Nylon bearings throughout are corrosion proof to help prevent sticking.
- Suitable for dusty or humid applications.
- Stainless steel hinge pins will not rust and ensure easy positive blade action.
- All shutter blades are reinforced with polished galvanized steel rods and equipped with double tie-rods.
- Automatic - Used with exhaust fans; opens automatically when fan is on, closes automatically when fan is off.
- Keeps out wind, rain and backdrafts when fan is not in operation.



**Single Panel Shutter**



**Double Panel Shutter**

### Motorized Inlet Shutters

- New cam pulley operator - provides long life to motor corrosion resistant.
- Motor draws only 17 watts.
- WAAC models are center pivoted to open easier against house static pressures.
- Motors are available in 24v, 115v, 230v, 460v, (Specify Voltage Required).



**Motorized Shutter**

### Replacement Motor and Linkage for Motorized Inlet Shutter

#### Item Number:

**AEMKCAM-115** - Replacement Motor and Linkage 115V

**AEMKCAM-24** - Replacement Motor and Linkage 24V

**AECAMO115V** - Replacement Motor Only 115V

Shutter Model	Overall	Opening	Sq. Ft. Opening	Wt.
<b>AEWAAC1818MT</b>	18 x 18	15 x 15	1.56	10
<b>AEWAAC2626MT</b>	26 x 26	23 x 23	3.67	14
<b>AEWAAC3333MT</b>	33 x 33	30 x 30	6.25	18
<b>AEWAAC4040MT</b>	40 x 40	37 x 37	9.50	22
<b>AEWAAC6318MT</b>	63 x 18	60 x 15	6.25	19
<b>AEWAAC6340MT</b>	63 x 40	60 x 37	15.42	35
<b>AEWAAC6362MT</b>	63 x 62	60 x 59	24.58	52



## Acme Turbulator

The Turbulator moves large quantities of air, at low velocities, in a flat cone-shaped pattern that follows the slope of the house roof downward. This provides a uniform airflow over a large area with the least amount of air blasts or dead spots, resulting in a very even heat distribution from the floor to the ridge. Cold or hot spots are virtually eliminated. The existing heating system becomes more efficient and fuel costs are reduced during the cold winter months.

The Turbulator is the perfect solution for destratification of heated air in an open truss poultry house. The Turbulator stir fan design is so unique that no other fan in today's market performs in the same way.

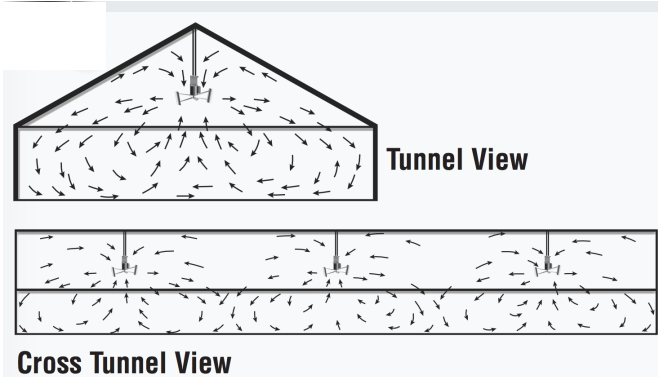


### Construction features:

- Welded steel construction
- High efficiency 4 blade impeller
- Impeller safety locked to shaft
- Continuous duty, totally-enclosed motor

### Key advantages:

- 360 degree air flow
- No direct air blasts to disrupt animals
- Moves large volumes of air at low velocities
- Even heat distribution from floor to ceiling
- Reduces heating fuel demand
- Drier litter throughout the house



## Fans With Light Deprivation (in housing)

- Steel propeller and fan housing are powder coated with the ACME-SEAL Charcoal Gray, which has a high corrosion resistance.
- Steel Light Trap housing powder coated with the ACME-SEAL Solar Matte Black low gloss finish to provide a high corrosion resistance and reduce light penetration.
- Light Trap matte black plastic blades provide high light reduction.
- Six-bladed propeller utilizing a cambered-twist blade, designed with a unique dihedral tip for higher air flow capacities at less horsepower.
- Non-overloading design maintains horsepower within catalog range of static pressure, resulting in lower motor load and reduced operating costs.
- Streamlined fan orifice and light trap baffles insure higher air flow capacity.



- Available mounted in square wall housing for ease of installation and vertical baffles for simple cleaning.
- Utilizing ACME's 5 Year Warranty Duplex Split Pillow Block Shaft and Bearing Assembly.

### Performance Data

Fan Model	HP	CFM vs. Static Pressure (inches w.g.)									
		0		0.05		0.1		0.125		0.15	
		CFM	CFM/W	CFM	CFM/W	CFM	CFM/W	CFM	CFM/W	CFM	CFM/W
DC36LTWB	1.0	11985	14.6	11565	13.7	11135	12.9	10918	12.5	10662	12.0
DC42LTWB	1.0	12850	10.9	12275	10.5	11400	9.8	10900	9.4	10375	8.9
DC48LTWB	1.5	20237	12.0	18910	11.1	17351	10.4	16351	9.9	15353	9.4
DC54TLWB	1.0	18538	14.4	17000	13.1	14450	11.6	13200	10.7	12200	9.8
DC54TLWB	1.5	20575	11.7	19250	10.9	17250	9.9	16000	9.4	14800	8.8



## Light Deprivation for Fans

- **High Light Reduction**  
Black-out tested at BESS Labs at a light reduction factor of 28,000,000:1.
- **Low Air Flow Resistance**  
Less area required to maintain good ventilation rates and lower fan operating pressures.
- **High Corrosion Resistance**  
Plastic profiles with painted galvanized steel frame provide years of maintenance free service.
- **Low Cost Installation**  
Designed to facilitate ease of installation.
- **Streamline Baffles**  
Reduces the chance for clogging air passage.
- **Special Application Sizes**  
Special sizes for Fan-Jets and perimeter inlets
- **Existing Building Application**  
No additional or extra horsepower required
- **Vertical Baffles**  
Allows for simple cleaning



Model Number	Height x Width (in.)	Sqaure Feet
LTPF2424	24 x 24	4
LTPF3636	36 x 36	9
LTPF4242	42 x 42	12.25
LTPF4848	48 x 48	16
LTPF6060	60 x 60	25
LTPF6358	62.5 x 57.75	25
LTPF7260	72 x 60	30
LTPF7272	72 x 72	36

## Light Deprivation for Inlet Shutters

MODEL LTPF/LTPI

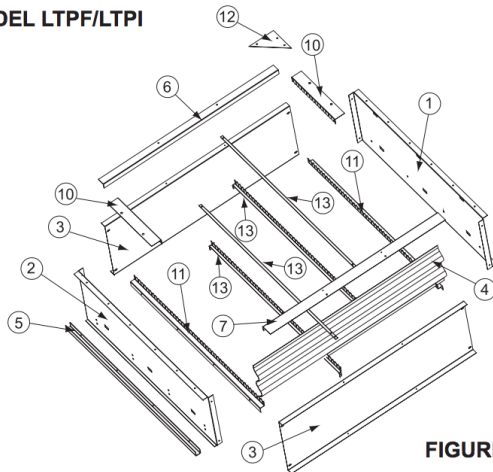
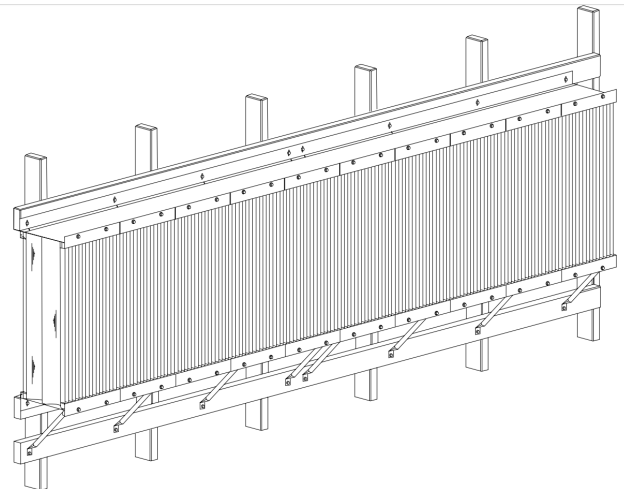


FIGURE 1

## Light Deprivation for Continuous Wall Mount



Model Number	Height x Width (in.)	Sqaure Feet
LTPI1818	18.75 x 19	2.47
LTPI2626	27 x 27	5.06
LTPI3333	33.75 x 34	7.97
LTPI4040	40.5 x 41	11.53
LTPI6318	63 x 19	8.31
LTPI6340	63 x 41	17.94
LTPI6362	63 x 63	27.56



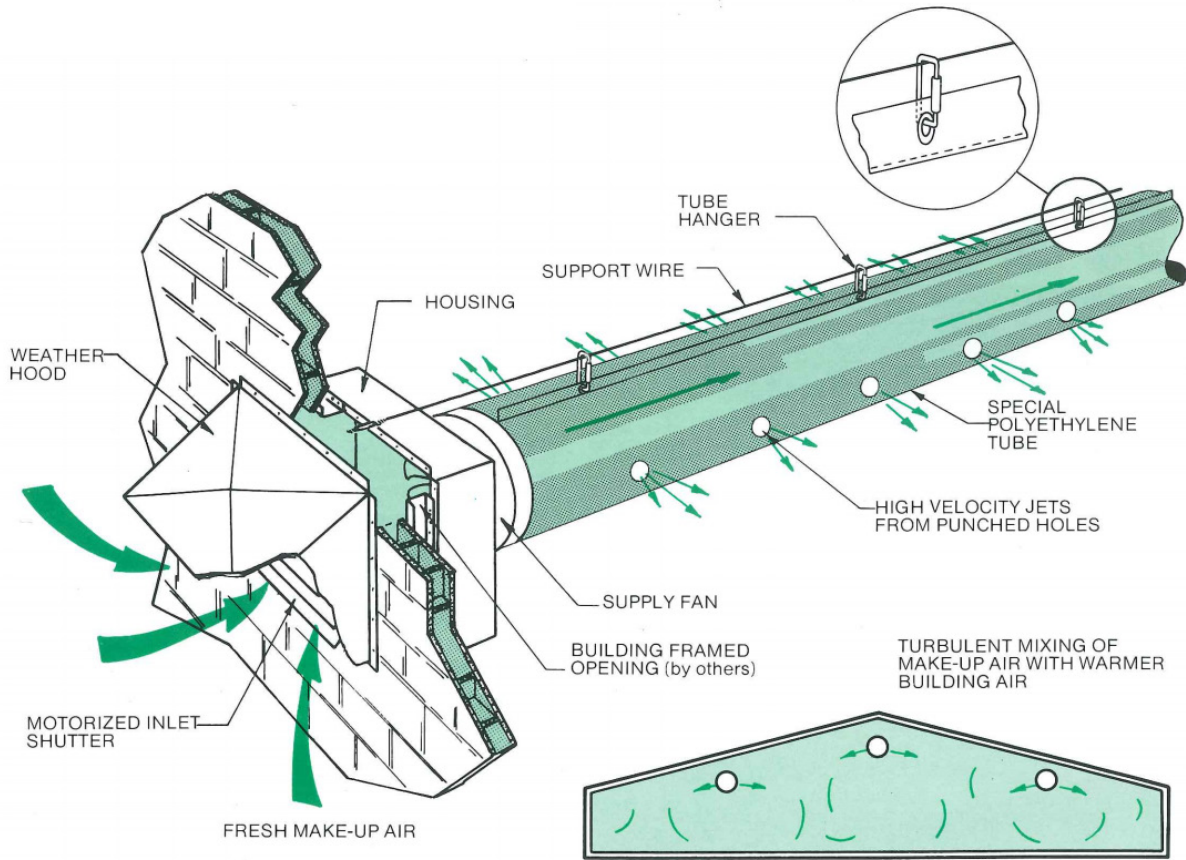


## Acme Fan-Jet

Fan-Jet air distribution system is one of the most diversified air moving products ever introduced to greenhouse, agricultural and product storage buildings. It has industrial uses as well as hog, poultry and animal confinement uses.

The Acme Fan-Jet system integrates the movement of air for internal air circulation coupled with inducing fresh air into the building, removal of air through exhaust fans. It also dramatically increases air movement within the building. That is beneficial to growing crops, poultry, hog and animal health as well as providing much needed air circulation among product storage. The Fan-Jet (or fanjet) can be used as greenhouse fans, agricultural fans, poultry fans, hog fans, ventilation fans or general cooling fans. It also works well in a fan and pad cooling system.

The Fan-Jet is a special tube pressurizing fan with curved stationary discharge vanes that recover the rotational energy of discharging air to increase performance capacity and efficiency.



Performance Data

Fan-Jet Model	HP	RPM	Tube Size	System CFM	Motorized Shutter Model	Heat Accessory	Heating Capacity With Heat Kit (BTU/Hr.) Output Heater Temperature Rise of			
							40°	50°	60°	70°
RC12D4	1/8	1725	12"	1180/780	WAAC1818	N/A	N/A	N/A	N/A	N/A
RC18E6	1/4	1160	18"	3120	WAAC2626	HT18	112,000	138,000	163,000	186,000
RC/RCA24F	1/3	735	24"	5420	WAAC3333	HT24	172,000	212,000	250,000	287,000
RC/RCA30G	1/2	607	30"	8550	WAAC4040	HT30	278,000	342,000	403,000	463,000
RC/RCA30J	1	757	30"	10600	WAAC4040	HT30	345,000	424,000	500,000	574,000





## Certified CFM vs. Static Pressure (Inches WG)

Fan Model	HP	RPM	CFM	.000" BHP	C/W	CFM	.050" BHP	C/W	CFM	.100" BHP	C/W	CFM	.125" BHP	C/W	CFM	.150" BHP	C/W	Max Static Pressure
DC24E	1/4	662	5280	0.25	18.3	4950	0.25	17.1	4530	0.26	15.5	4235	0.26	14.5	3075	0.25	10.8	.150
DC24F	1/3	735	6235	0.41	14.5	5960	0.41	13.8	5655	0.42	13.0	5475	0.42	12.5	5255	0.42	12.0	.250
DC24G	1/2	820	6960	0.57	12.1	6715	0.57	11.7	6450	0.57	11.2	6305	0.58	10.9	6145	0.58	10.6	.300
DC24G-2S	1/2	763	6475	0.46	14.0	6210	0.46	13.3	5920	0.46	12.7	5755	0.47	12.3	5555	0.47	11.8	.250
DC24H	3/4	949	8055	0.88	9.2	7840	0.88	8.9	7625	0.89	8.7	7510	0.89	8.5	7390	0.89	8.4	.375
DC24H-2S	3/4	875	7425	0.69	10.8	7195	0.69	10.4	6955	0.70	10.1	6825	0.70	9.9	6685	0.70	9.6	.375
DC30F	1/3	529	8475	0.40	20.1	7985	0.41	18.6	7400	0.42	17.0	7010	0.42	16.1	6560	0.41	15.2	.200
DC30G	1/2	607	9725	0.61	15.9	9305	0.61	15.0	8840	0.62	13.3	8570	0.63	13.6	8255	0.63	13.1	.250
DC30G-2S	1/2	546	8745	0.44	19.7	8275	0.45	18.3	7720	0.46	16.8	7365	0.46	16.0	6950	0.46	15.2	.200
DC30H	3/4	686	10990	0.87	12.7	10620	0.88	12.1	10230	0.89	11.5	10015	0.90	11.2	9780	0.90	10.9	.300
DC30H-2S	3/4	647	10365	0.73	14.2	9970	0.74	13.5	9550	0.75	12.8	9310	0.75	12.4	9040	0.76	12.0	.300
DC36F	1/3	431	10255	0.35	28.3	9750	0.36	25.2	8790	0.38	22.3	8300	0.38	20.8	1660	0.39	18.9	.150
DC36G	1/2	495	11780	0.52	22.4	11190	0.54	20.5	10555	0.56	18.7	10200	0.57	17.8	9805	0.57	17.0	.200
DC36G-2S	1/2	463	11015	0.43	25.5	10390	0.45	23.1	9680	0.46	20.8	9265	0.47	19.6	8795	0.47	18.4	.200
DC36H	3/4	575	13680	0.82	16.8	13175	0.84	15.7	12650	0.86	14.8	12375	0.87	14.3	12085	0.88	13.8	.300
DC36H-2S	3/4	511	12160	0.58	21.2	11595	0.60	19.6	10985	0.61	18.0	10640	0.62	17.2	10260	0.63	16.4	.250
DC36J	1	634	15085	1.10	14.0	14630	1.12	13.3	14160	1.15	12.6	13915	1.16	12.3	13665	1.17	11.9	.300
DC42G	1/2	385	14445	0.54	26.5	13550	0.56	24.1	12490	0.58	21.5	11830	0.58	20.1	11110	0.59	18.7	.150
DC42G-2S	1/2	356	13355	0.43	31.0	12385	0.44	27.7	11125	0.46	24.1	10410	0.47	22.1	9610	0.48	20.1	.150
DC42H	3/4	442	16580	0.82	20.4	15815	0.84	19.0	14970	0.86	17.6	14475	0.87	16.8	13915	0.88	16.0	.250
DC42H-2S	3/4	511	15495	0.67	23.4	14670	0.69	21.5	13725	0.71	19.6	13145	0.71	18.6	12520	0.72	17.4	.200
DC42J	1	485	18195	1.08	17.2	17500	1.10	16.2	16760	1.12	15.2	16950	1.14	14.7	15890	1.15	14.2	.300
DC48G	1/2	308	17470	0.55	31.8	16220	0.57	28.4	14650	0.58	24.9	13630	0.59	22.9	12160	0.61	19.9	.150
DC48G-S	1/2	276	15655	0.39	39.5	14230	0.41	34.4	12230	0.43	28.6	10075	0.45	22.1				.125
DC48H	3/4	354	20080	0.83	24.4	19005	0.86	22.3	17795	0.87	20.5	17065	0.88	19.4	16225	0.89	18.3	.200
DC48H-2S	3/4	314	17810	0.58	31.0	16585	0.60	27.9	15080	0.62	24.6	14105	0.62	22.7	12865	0.64	20.3	.150
DC48J	1	382	21670	1.04	21.2	20675	1.07	19.8	19600	1.09	18.3	18980	1.10	17.6	18285	1.11	16.8	.200
DC54J	1	311	25065	0.98	26.5	24030	1.06	23.2	22810	1.12	20.8	21990	1.14	19.7	20305	1.14	18.6	.200
DC54K	1 1/2	344	27725	1.33	21.8	26795	1.41	19.8	25770	1.49	18.1	25160	1.52	17.3	24420	1.54	16.5	.250



## Acme Kuul Pad

Cooling pads and evaporative cooling media come in a variety of textures, thicknesses and heights. Most evaporative cooling media is CELdek which is stocked both domestically and in warehouses around the world. The Acme cooling pads and Kuul pads are manufactured and stocked in the U.S.

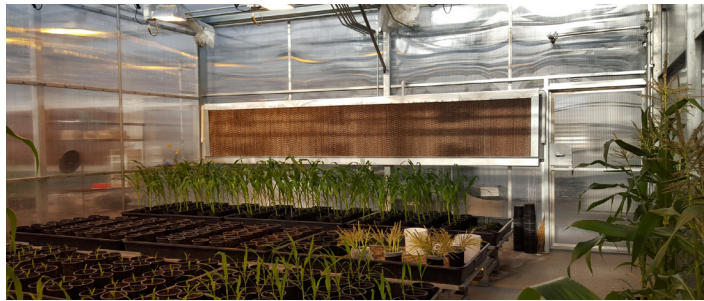
### SELECTING KUUL PAD SIZE:

Kuul Pad is most efficient with air velocity of 250 fpm. Therefore, for maximum efficiency add the total exhaust selected and divide by 250 to get the square feet of pad required. Divide the square feet of pad by the available length of run to get the height of Kuul Pad required. Round off to the nearest foot.

The pads are 4" x 12" x 24", 36" and 48". Using the tall pad support, they may be stacked to provide 60", 72", 84" and 96" high pads. The number of Kuul Pad pads required is equal to the length of run.

Select the distribution system that matches the length of run up to 100'. (50' in PDR systems.)

Select the water pump according to the length of the distribution system. Use #15 pumps for systems up to 40', #30 up to 70', and #60 up to 100'.



### SELECTING INLET SIZES:

Summer Ventilation and Cooling: The inlet area for Kuul-Pad pads should be continuous and at least 2/3 of the pad height. In no case should the velocity of air inlet for summer cooling or ventilation exceed 400 fpm. Divide total CFM by 400 to get square feet of inlet required.

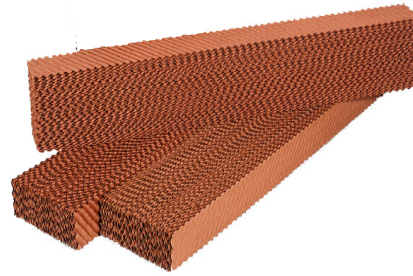
### Typical Example:

A 25' x 100' greenhouse located in an area with less than 1000 feet elevation and 5000 f.c. of light. This example is based on 15 degree winter inside temperature above outside temperature and 7 degree rise from pad to fan in summer. Air flow will be end to end and, therefore, fan to pad distance is 100'.

### CONTROLS:

Because of non-resident management of greenhouse operations today, automatic controls become a necessity.

If simple one or two step heating or cooling is required, thermostats will satisfactorily operate the equipment. But to conserve energy, staging equipment is recommended to use minimum equipment while achieving desired temperatures.



### Kuul Pads Sizes:

- 4x12x24
- 4x12x36
- 4x12x48
- 4x12x60
- 4x12x72
- 6x12x24
- 6x12x36
- 6x12x48
- 6x12x60
- 6x12x72

## Kuul Pad Calculations

### Calculations

$$\text{Actual Width} \times F_e \times F_i \times F_w = (\text{Equivalent Width})$$
$$25' \times 1.0 \times 1.0 \times 1.0 = 25$$

(25' is less than 30'; therefore, one unit is OK)

$$\text{Winter: } L \times W \times 2 \times F_e \times F_i \times F_w = \text{CFM}$$
$$100 \times 25 \times 2 \times 1.0 \times 1.0 \times 1.0 = 5,000 \text{ CFM}$$

$$\text{Summer: } L \times W \times 8 \times F_e \times F_i \times F_w = \text{CFM}$$
$$100 \times 25 \times 8 \times 1.0 \times 1.0 \times 1.0 = 20,000 \text{ CFM}$$

21,120 CFM Divided by 250 = 84.48 sq. ft.  
85 divided by 20 (length of pad) = 4.25 (use 48")

For 6" Pads use 400 instead of 250 for the denominator in the equation.

Winter - See Fan-Jets above  
Summer - A balance of both pad height and length of run is required.  
21,120 divided by 400 = 52.8 sq. ft.

### Equipment Selection

#### Fan-Jet

1- AERCA24F from chart #1; AEWAAC333MT, 100 feet 24' tube punched "BP". 1-100' support package; 13 hangers and rings (100' divided by 8 = 13); 24" heat accessory if heat is to be distributed by the Fan-Jet.

#### Exhaust Fans

2 - AEDCA36G fans at .05" SP = 11,065 CFM each, one is 2 speed, (low speed for winter ventilation; therefore select 1 - AEDCA36G and 1 - AECDA36G-2S each with slant wall housing, shutter and guard. (Note 2 spd. max. = 10,055 CFM); (Total CFM = 11,065 + 10,055 = 21,120.)

#### Kuul Pad System

- 2 - 48" Kuul Pads
- 1 - 20' Distribution and Return System
- 1 - #15 S Pump
- 1 - Plumbing Package

#### Inlet Shutters

$$4 \times 15.4 = 61.6 \text{ sq. ft.}$$

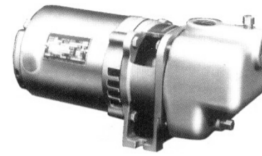
4- AEWAAC6340MT @ 15.4 sq. ft. each

## PDR 4 and 6 Kuul Pad Systems

The plumbing package is designed for use with all the pumps for the Kuul Pad systems and includes the necessary plumbing fittings and valve to complete the installation from the sump to the distributor and also contains the water strainer and float valve.

The sump tank cover and tank fittings are furnished by others and should be sized to provide 3/4 gallon per square foot of 4" pad area and 1 gallon per square foot of 6" pad area.

*These pumps should be sized to provide 1/2 gallon per minute for 4" and 3/4 gallon per minute of 6" of flow per linear foot of pad to ensure adequate wetting.*



These pumps are heavy duty centrifugal, self priming type featuring high volume and low head pressure performance.



These pumps are submersible type with cast iron housing, polypropylene base and polycarbonate cover. They include a lifetime oil supply and non-clog pumping head and impeller.

Model	Type	HP	Voltage	Capacity at 10' Head	Total System Length - 4"	Total System Length - 6"
#30	Centrifugal	1/3	115/230/1	42 GPM	70'	55'
#60	Centrifugal	1/2	115/230/1	55 GPM	100'	80'
#15S	Submersible	1/4	115/1	29 GPM	40'	35'
#30S	Submersible	1/3	115/1	42 GPM	70'	55'
#60S	Submersible	1/2	115/1	63 GPM	100'	80'

## Kuul Pad Care

Kuul Pads are very durable and long lasting. To maximize the life of your pads and keep the efficiency of the original installation, correct any conditions that may be detrimental to the pad.

**A.** Ph of recirculating water (from sump) must be maintained between 6 and 9 (7 is pure water). If these limits are exceeded, the stiffening agents in the pad will leach out and destroy the pad.

**B.** Hard water resulting in Calcium Carbonate deposits on the pad is not harmful, but should be kept within limits.

**C.** Sodium Chloride (salt water) concentrate above 50,000 ppm (approx.) will deposit salt on the pad and reduce air flow. Keep salt concentrates below 50,000 ppm in recirculating water and below 40,000 ppm in make-up water.

**D.** Algae will grow on any surface that is wet and exposed to sunlight. To help prevent algae build up, follow these tips:

**1.** Do not draw make-up water from an open pond. Use well water or chlorinated water from city systems.

**2.** Cover the sump to avoid exposure to sunlight and airborne particles, and to keep animals from drinking it.

**3.** Keep the fans running after the pump is shut off to dry the pads, thus killing the algae spores left on the pad.

**4.** Isolate the water make up system from any other system.

**5.** Pads should be shaded from direct sunlight.

**E.** Airborne dust and bugs do not seem to clog airflow passages of Kuul-Pads. When the system is running this clogging washes away.

**F.** When Kuul-Pad is installed within reach of poultry or livestock, it should be guarded.

**G.** Bleed-Off - Since the water is continuously evaporating and being replaced by fresh water, the salts and mineral are left behind in the recirculating water. To reduce build-up of deposits and scale, a bleed off for the recirculating water is provided.

## Aspen Pad

Pad roll for easy sizing and shipping. Just cut to size with heavy shears and install same as standard cooler pads.

36" Wide x 24' Long X 1" Thick

Item No. - **AP3624** - 36" x 24"





With over 65 years of industry experience, Schaefer is a leader in the design and manufacture of ventilation equipment for agricultural, industrial and commercial markets. Schaefer is committed to providing the highest quality, highest performing products, backed by industry leading customer service, to exceed customer expectations worldwide.

### Schaefer Ultra-Cool Evaporative Cooling Systems

**Reservoir:** The "Ultra-Cool™" reservoir is constructed of very high UV PVC pipe. The pipe is solid, requiring no cutting. Our unique design is unequaled in the industry.

**Supply Line:** Our supply line pipe is made of 2" schedule 40 PVC pipe, designed to deliver maximum water supply to the system.

**Pump Kit:** Our system consists of a Gould Sump Pump, designed for use in many different system lengths. Pumps are available in 110 or 220 volts.

**Spray Line:** The spray line is constructed of 1-1/4" PVC pipe with holes drilled in line along the top. When water is pumped to the spray line, water shoots out of the holes onto the distribution panel then onto the pads.

**Pads:** Constructed of cellulose fibers with built-in anti-rot agents. When water flows down the pad, and air is drawn through the pads, the air evaporates some of the water, becoming much cooler. When the water reaches the bottom of the pads, it drips back into the reservoir.



### Schaefer Way-Cool Evaporative Cooling Fans

WayCool® portable evaporative coolers use the natural cooling process of evaporating water to reduce temperatures up to 30°F at a fraction of the cost of air conditioning. WayCool blows cooled air in a focused narrow stream at high velocities long distances to provide greater cooling for employees, customers, guests, equipment and livestock both indoors and outdoors!

#### Features Include:

- U.L. approved, two speed, centrifugal blower is quieter and capable of greater air distribution than the fan blades found in other portable coolers. You'll feel cool air up to 100 feet away.
- High efficiency evaporative cooling pads on all four sides for maximum efficiency in the smallest possible space.
- High impact ABS plastic with UV protection.
- Aluminum frame interior.
- Six position recessed switch for high or low air speeds, with or without evaporation.
- Heavy-duty casters for easy movement.
- Low operating costs - less than 50 cents a day.
- Low maintenance - simply rinse with water.
- Self-contained water tank for stand-alone operation.



Model	H.P.	Volts	Air Velocity	Base	Height	Weight	Discharge Opening	Water Capacity
GAWC-1HP	1	115	55 MPH	33 x 33	52 Inches	155 Lbs	9 x 18	24 Gallon
GAWC-1/3HP	1/3	115	45 MPH	25 x 25	42 Inches	65 Lbs	8 x 15	14 Gallon

A review of weather data from hot weather regions shows that even in the most humid climates, midday relative humidity levels are well within range where WayCool can provide heat relief. Humidity levels may start the day in the 90% range during cool morning hours, but at 90 degrees F and above, it's almost impossible to have humidity levels above 70%.



# Schaefer Air Ventilation System

## The Features & Benefits of a Plant - Air Ventilation System for Horizontal Air Flow

The engineers at Schaefer Fan Company have been innovators in air circulation technology since 1951. The Plant Air system was created with this experience, vigorously tested and patented. The Schaefer Plant Air Circulation Fan is much more efficient in air-to-energy usage than other fans. The Schaefer guards are wider, with less restrictive wire spacing, allowing for twice the air flow of typical basket fans. The Plant Air fan design spreads air currents to insure efficient air circulation and optimum distribution of mist, fog, CO2, and spray chemicals. The Plant Air fan is no-maintenance. The totally enclosed motor never needs oiling and uses heavy-duty moisture resistant bearings for long life.

### Air, light, water...

...you know what it takes to make your greenhouse thrive. Schaefer Plant Air Circulation Fans are your solution to healthy air circulation and healthy plant growth. Use Schaefer Plant Air Circulation Fans to implement Horizontal Air Flow (HAF) patterns throughout the greenhouse. The HAF system places small circulation fans strategically in the greenhouse creating a 'race-track' air flow pattern. This system created with Schaefer Plant Air fans encourages plant performance by:

#### Reducing humidity and moisture condensation.

- Prevent mildew and disease.
- Encourage healthy plant growth.
- Reduce heat loss from conduction through wet glazing.

#### Improving carbon dioxide availability:

- Improve photosynthesis by increased fresh air flow across plant leaf surface.
- Lower Levels of additional CO<sup>2</sup> needed.

#### Equalizing greenhouse temperature:

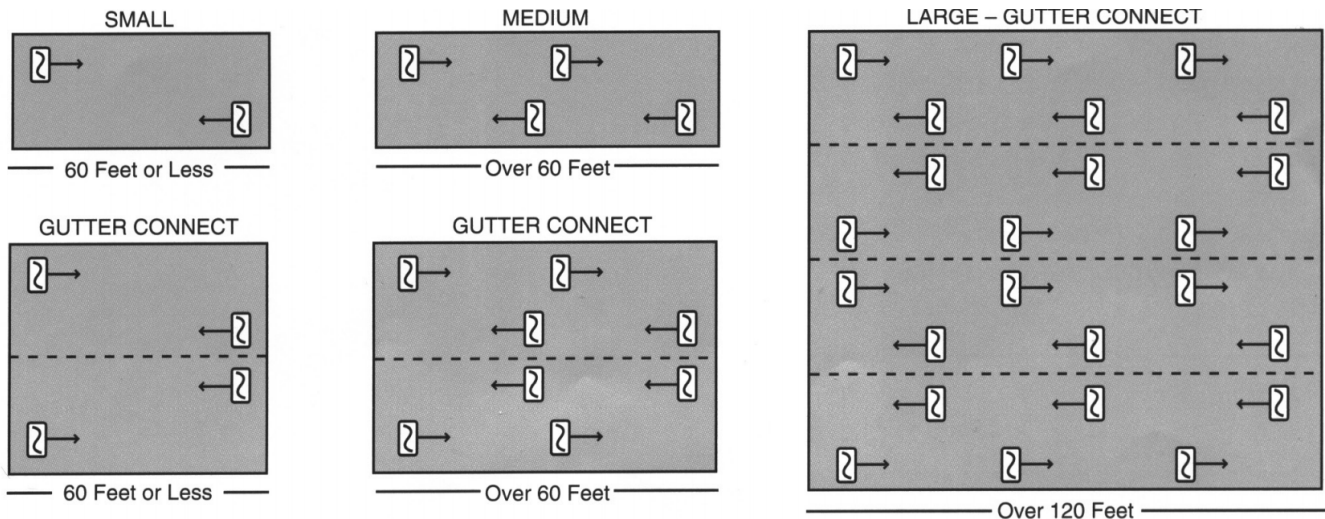
- Eliminate air stratification - moving hot air down from the peak.
- Uniform temperature, lower thermostat settings - save up to 5% in heating costs.
- Reduce burning of exposed leaves, flowers or fruit on warm days.

- Maintain consistent greenhouse temperatures.
- Motor mount provides for each Installation.
- Solid aluminum blades.
- Moisture resistant variable speed motor .
- White vinyl housing prevents shadowing.
- Fan holes are larger than traditional basket fans and provide double the circulation of traditional models.
- The fan's heavy duty bearing motors are maintenance-free and highly energy efficient.
- Noise levels are low-well below OSHA noise level requirements for plant environments.
- The fan mounts closer to the ceiling trusses for more headroom clearance.



Model #	Size	CFM	HP	Volts	Amps	Var. Speed
GAVS12	12"	2,600	1/10	115/230	.9/.45	Yes
GAVS20	20"	6,000	1/3	115/230	3.8/1.9	Yes
GAVS24	24"	8,500	1/2	115/230	4.0/2.0	Yes
GAVS36	36"	11,000	1/2	115/230	6.0/3.0	No

Suggested Placement of Schaefer Plant Air Fans in Single and Multiple Greenhouses



## Schaefer Exhaust Fans (Belt Drive & Direct Drive)

Maintain a safe and productive work environment by exchanging hot or contaminated air using Schaefer low cost galvanized, box exhaust fans. These low cost, high volume exhaust fans are protected from the elements with outlet side aluminum shutters and mount in walls of almost any thickness, typically with the outlet shutter flush, or nearly flush with the outside wall. Fans ship fully assembled with aluminum inlet shutters, self-adjusting belt tensioner and galvanized outlet guard.



### Features and Benefits:

- G90 galvanized construction, for corrosion resistance / long life
- Totally enclosed, thermally protected motors for safety / long life
- Easy belt replacement, minimal maintenance required
- Remote Lubrication System optional
- Made in the USA
- Suitable for buildings with any wall thickness
- Available in 36" or 48" sizes
- 3-wing or 5-wing blade style
- Two year warranty

## Schaefer HAF Fans

Reduce heat stress and improve air quality with Schaefer's uniquely designed circulation fans. Unrivaled in the market, these fans are engineered to produce greater air movement and superior cooling no matter the application. You don't hear them. You don't see them. You only feel them!

Also known as Horizontal Air Flow (HAF) fans, these fans move air in a coherent horizontal pattern creating a gentle 'racetrack' air flow pattern needed in greenhouses to maximize heat distribution and humidity control by mixing the air, from ceiling to floor.



## Schaefer Inlets & Shutters

### Motorized Inlets

Use Schaefer intakes to ease fresh air into rooms and buildings at your desired rate. Ideal for slower exchange rates and providing make up air to exhaust fans. Louvers are curved for a tight seal when closed and corners are fused together for exceptional strength and durability.

### Aluminum Shutters

Shutters control and improve air flow in a single direction and are used to direct air flow to building inlets and exhaust fans.



## Schaefer Americ Confined Space Ventilators

When a life is on the line choose the best-in-class ventilator, Americ®. Americ confined space ventilators provide unrivaled performance to ensure safe, controlled and comfortable work conditions in the most extreme environments. Rugged and reliable, many units are still performing great after 15 years.

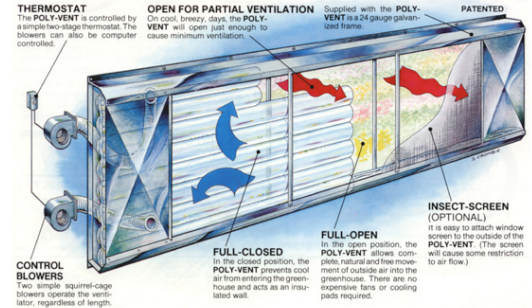
### Features and Benefits:

- Industry leading airflow in all sizes, rated from 750-10,000 cfm
- Dual wall polyethylene housing designed to withstand the harshest of conditions, providing years of durability and dependability
- Premium quality motors rated for over 100,000 hours of heavy duty, continuous use for unmatched return on investment
- Safety tested to UL, CSA and CE certifications, exceeding industry standards
- Provides positive and negative airflow (blows and extracts)
- Lightweight for easy portability
- Stackable to save storage space
- Three year warranty
- Made in the USA



## Poly-Vent

With our Poly-Vent ventilation system you'll have an economical alternative to rack & pinion, and you'll save in a host of other ways, too. Save on electrical bills by reducing the use of large fans, save on heating costs because Poly-Vent's dead air space provides an effective layer of insulation, and reduce your maintenance time with fewer moving parts. Able to accommodate most greenhouse sidewalls, our system provides improved water drainage. Choose from single-stage or two-stage options to provide your product with superior ventilation and yourself with savings. The winds of fortune are blowing in your direction.



## Poly-Vent II (Single-stage)

**Base Frame Includes:** Poly-Vent II, top and bottom 24 gauge galvanized Poly-Vent gutter, galvanized front/rear guides and hardware.

**Optional Stacking Frame Includes:** Poly-Vent II, top and 24 gauge galvanized Poly-Vent gutter, galvanized front/rear guides and hardware.

**End Package Includes:** Sheet metal enclosures for both ends of frame, one blower to inflate Poly-Vent II, blower mount, one 3-inch diameter flex tube, air transfer gaskets and all hardware.

**Sizes:** 24" 36" 48" 60"

## Poly-Vent III (Two-stage)

**Base Frame Includes:** Poly-Vent III, top and bottom 24 gauge galvanized Poly-Vent gutter, galvanized front/rear guides and hardware.

**Optional Stacking Frame Includes:** Poly-Vent III, top 24 gauge galvanized Poly-Vent gutter, galvanized front/rear guides and hardware.

**End Package Includes:** Sheet metal enclosures for both ends of frame, two blowers to inflate Poly-Vent III, blower mounts, two 3-inch diameter flex tubes, air transfer gaskets and all hardware.

**Sizes:** 36" 48" 60"

## Replacement Poly-Vent Plastic

**Sizes:** 24" 36" 48" 60"

## Poly-Vent Back-Up Blower System

The back-up blower system will keep your Poly-Vent system inflated in the unlikely event of a power outage. Includes adapter plate, control box, DC blower, battery charger w/ auto shut off. (12 volt battery is not included.)

**Available for:** Poly-Vent II & Poly-Vent III

## Replacement Parts



Poly-Vent Blower



Blower Mounting Bracket



Air Transfer Gasket



Flex Tubing



Link4 Greenhouse Controls manufactures software and environmental controls for growers wanting to optimize their greenhouse production and reduce operating costs. We enable our customers to manage every aspect of their greenhouse from the palm of their hand, using state-of-the-art controls that relay greenhouse data to the Cloud where it is accessible on any Internet-connected device.



### iGrow 400/800 Series

Get real-time energy use and track run time on greenhouse heating and cooling equipment with this simple, entry-level advanced controller system. iGrow 400/800 offers four (400 Model) or eight (800 Model) different controls for:

- Exhaust Fans
- Pad Pumps
- Pad Louvers
- HAF Fans
- Fan Jets
- Vents
- Shade Curtains
- Unit Heaters
- Perimeter Heating Systems
- Other Equipment



No more programming and reprogramming every crop cycle or season change – with the iGrow 800 series USB data logging feature you can easily save settings to any USB flash drive. When the time comes to switch settings, simply insert your USB flash drive into your iGrow data. These are some of the new and innovative ways Link4 has provided to reduce setup times and reduce your labor costs.

iGrow 400/800 Series Comparison Chart								
Hardware Features	400	400s	400vc	400vcs	800	800s	800vc	800vcs
Outputs	4	4	4	4	8	8	8	8
Programmable Outputs	4	4	4	4	8	8	8	8
Touch Sensitive Interface	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Back-lit LCD Display	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Onboard Memory	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Control Features</b>								
Cooling & Heating Stages	9	9	9	9	9	9	9	9
Daily Set Points	3	3	3	3	3	3	3	3
Humidity Control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Controlled Equipment</b>								
Heaters	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cooling Pad	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Exhaust Fans	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Shutters	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HAF Fans	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other ON/OFF Equipment	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Variable Position Vents			Yes	Yes			Yes	Yes
Curtains			Yes	Yes			Yes	Yes
<b>Special Features</b>								
ROI Calculator	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Energy Management	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
USB Connection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Simple Graphing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Web Connection		Yes		Yes		Yes		Yes
Advanced Graphing			Yes	Yes			Yes	Yes





## iGrow 1000 Series

The iGrow 1000 Series consists of two models: iGrow 1400 and iGrow 1800. Each of the models is based on the same hardware platform but with different microprocessor programs. The models are differentiated by the feature set as described below in the iGrow comparison chart. A standard feature for each controller is the digital temperature and humidity sensor with a radiation shield housing. These precision sensors are very stable and the sensor readings are not degraded by the length of the cable. The 1000 Series iGrow Environmental Controllers can interface with many additional sensor types including a very easy to install weather station. These iGrow's can be networked and linked to a host computer with Link4's iControl software.



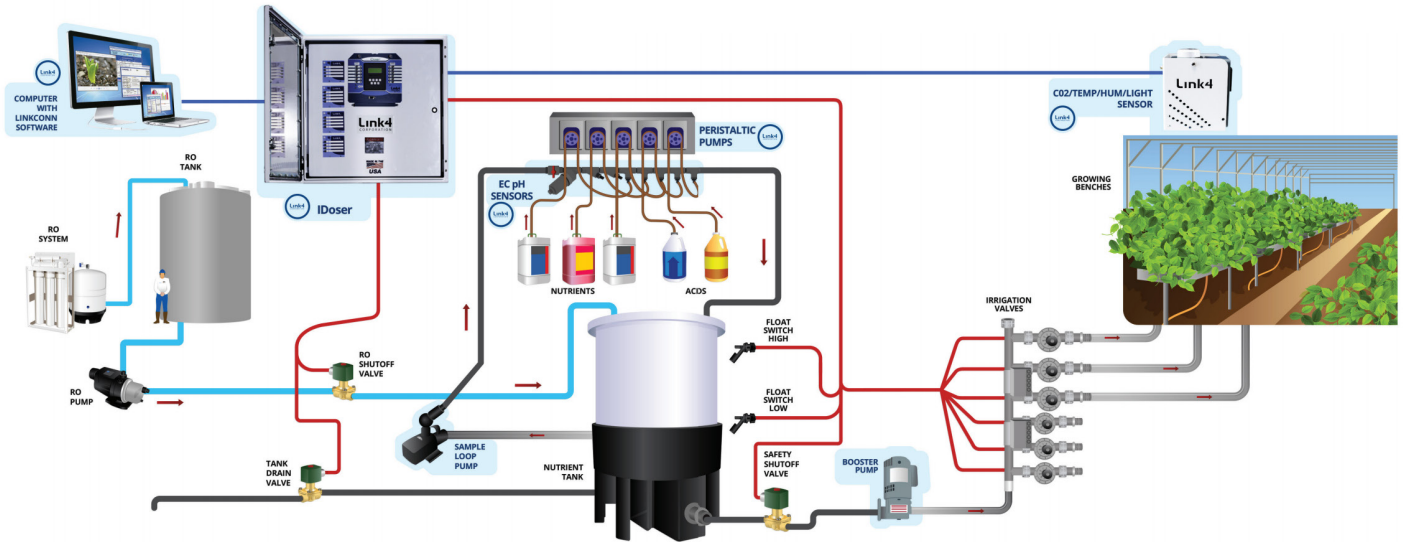
**iGrow 1000 Series Comparison Chart**

Hardware Features	iGrow 1400	iGrow 1800
Outputs	12	12
Programmable Outputs	12	12
Alarm Outputs	2	2
"Micro" Temp Zones	5	5
Override Switches	Standard	Standard
<b>Control Features</b>		
Cooling & Heating stages	12	12
Daily Set Points	4	4
Humidity Control	Standard	Standard
<b>Controlled Equipment</b>		
HAF Fans	Standard	Standard
Exhaust Fans	Standard	Standard
Cooling Pad	Standard	Standard
Heaters	Standard	Standard
Other ON/OFF Equipment	Standard	Standard
Variable Position Vents	Standard	Standard
Irrigation - Time Schedule	Standard	Standard
Irrigation - Misting	Standard	Standard
Irrigation - Accumulated Light	Standard	Standard
Irrigation - External Trigger	Standard	Standard
Curtains	Standard	Standard
CO2 Control	Standard	Standard
Grow Lights (HID)	Standard	Standard
Mixing Valves	Standard	Standard
Master Pumps	Standard	Standard
Multi-Zone Vents	Standard	Standard
Boiler Control	Standard	Standard
<b>Special Features</b>		
Smart Cool Predictive Cooling	Standard	Standard
Heat Boost	Standard	Standard
Overrides	Standard	Standard
Programmable Overrides	Standard	Standard
Conditional Controls	Standard	Standard
Advanced Master Pump Controls		Standard
Vent Position Sensing		Standard
Anticipatory Heating and Cooling		Standard
Variable Pulse Width Control		Standard
Variable Output Control		Optional
EC and pH Control		Standard



### iDoser Automatic Dosing and Fertigation

The iDoser provides accurate nutrient dosing, and pH balancing for many different types of grow environments – from large-scale greenhouses to commercial warehouses and vertical farms. Plus, given that the LinkConn software is database driven, it can be controlled by an enterprise grade server or installed right onto your laptop for optimal control and visibility. The iDoser system can also include up to two backup sensors and logs all activity, so if a problem does occur, you’re on top of it before it becomes an even bigger problem. This helps you pave the way for efficient and plentiful growth you can rely on.



### iPonic Hydroponic Controller

The original iPonic hydroponic environmental controller enables growers to control a grow environment with Cloud-based access from any Internet-connected computer or smartphone.

Unlike most controllers on the market, the iPonic controller allows you to program all functions together and eliminate multiple controllers for multiple functions – the iPonic does it all: Fuzzy Logic CO2, light timer, temperature, humidity, recycle timers, vent fans, high temperature shut-off, irrigation, central air conditioning and heating – even add your own custom devices. This also means that you can change devices on the fly – add or delete devices to match the equipment in your grow house in minutes.



### iPonic Commercial Controller

The iPonic Commercial enables growers to control a single or dual zone – with cloud-access from any Internet-connected computer or smartphone.

Unlike most controllers on the market, the iPonic Commercial controller allows total flexibility using software-based intelligence. This means that you can program all functions together and eliminate multiple controllers for multiple functions – the iPonic does it all: Fuzzy Logic CO2, light timer, irrigation, temperature, humidity, recycle timers, vent fans, high temperature shut-off, central air conditioning and heating – even add your own custom devices. This also means that you can change devices on the fly – add or delete devices to match the equipment in your grow house in minutes.

Controller includes a single (or dual) Digital Integrated Sensor Module (DISM). The sensor measures temperature, humidity, CO2 and lighting.





J&D Manufacturing, Inc. is a manufacturer and international distributor of ventilation system products for dairy, swine and poultry barns as well as horticulture, industrial and commercial applications. Located in Eau Claire, Wisconsin, J&D is a thriving family owned and operated business. We bring together competitive price, unmatched quality and total system solutions.

### ES Shutter Fans

J&D Manufacturing's ES Shutter Fan is a durable agriculture grade exhaust fan perfect for barn and building peaks, greenhouses, warehouses and more. ES Shutter Fans are available without a cord, or pre-wired with a cord and plug for "No Electrician Required" installation.

Model #	Size	CFM	H/P	RPM	Volts	Amps	Rough Opening
VSF1285	12"	850	1/12	1600	115	1.4	12 3/8" x 12 5/8"
VSF12115	12"	1150	1/10	1725	115/230	.9/.45	12 3/8" x 12 5/8"
VSF16140	16"	1400	1/10	1725	115/230	.9/.45	16 3/8" x 16 5/8"
VSF16205	16"	2050	1/4	1700	115	2.8	16 3/8" x 16 5/8"
VSF20320	20"	3200	1/4	1700	115	2.8	20 3/8" x 20 5/8"
VFS20450	20"	4500	1/3	1725	115/230	3.75/1.9	20 3/8" x 20 5/8"
VSF24550	24"	5500	1/2	1100	115	6.5	24 3/8" x 24 5/8"
VSF24680	24"	6800	1/2	1725	115/230	4.5/2.2	24 3/8" x 24 5/8"



### Intake Shutters - Motorized

Aluminum Power Shutters from J&D are designed to be used as an inlet to bring fresh air into your building, and may also be used for free-air exhaust. All Power Shutters include a shutter motor kit and heavy duty aluminum extrusion frame with welded corners for extra strength.

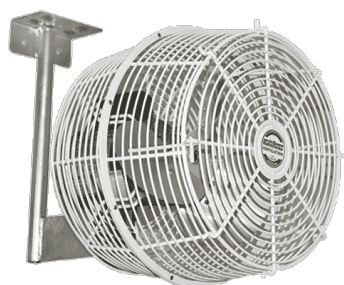
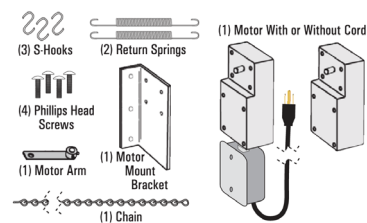
- Aluminum Powered Intake Shutters or free-air exhaust.
- Nylons bearings; solid shafts; drawn cup-type sleeves on all movable linkage.
- Frame of heavy aluminum extrusions with 1/2" channel lock water stop and precision milled corners.
- Interlocking blades for maximum weather seal.
- Double panel units constructed with rigid "T" section center member.

Sizes Available: 12" 16" 18" 20" 24" 30" 36" 40" 42" 48" 54" 60" 75"

### Motorized Shutter Kits

- Rugged Heavy Duty Motors
- Easy to Install
- Hardware Included
- Dual Voltage (115/230)

Automate your ventilation system with environmental controls and motorized shutter kits.



### Green Breeze H.A.F. Fans

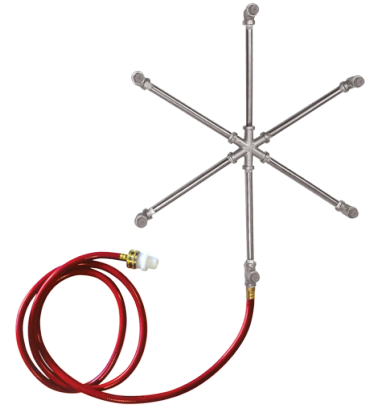
J&D's Green Breeze assists in reducing winter heating costs by efficiently moving air throughout the greenhouse creating a more uniform temperature. Then for overall improved plant health and to harden plants before shipping them to market, reduce the fan speed and adjust the air pattern towards the plants to stimulate hardiness and growth.

Sizes Available: 12" 20" 24"



## Misting Systems

When air exchange and fan recirculation is not enough to cool your environment, consider a J&D Manufacturing misting system. Mist kits are available as poly rings or stainless steel crosses with 4 or 6 nozzles. The rigid construction of the stainless steel mist kits keeps nozzles perpendicular to the airflow for a consistent mist pattern. All models come completely assembled with nozzles, hose, and female hose connector. Mist Kits can be easily attached to any recirculation fan guard with cable ties. With low pressure misting, the area surrounding the fan must remain clear in order to provide ample time for the water droplets to evaporate so they do not reform on a solid surface. Whenever you inject moisture into a closed building, you must have a proper air exchange strategy. Contact J&D Manufacturing today to help design an effective cooling system.



## Recirculation Fans

As the name implies, recirculation or circulation fans are designed to circulate air throughout your greenhouse or nursery. In the horticulture market, these fans are also called Horizontal Airflow Fans or HAF Fans. The main purpose of air recirculation is to cool and control the climate to produce healthy plants and produce. Recirculation fans keep your building dry by reducing the collection of moisture and condensation during periods of high humidity.

As the leader in air recirculation, J&D Manufacturing offers recirculation fans of all shapes and sizes including Box Fans, Basket Fans, Drum Fans, Ceiling Fans, Pedestal Fans and Funnel Fans for both indoor and outdoor use. Our greenhouse circulation fans range in size from our 12" Green Breeze HAF Fan to our new 60" Indoor/Outdoor Ceiling Fan.

## Exhaust Fans

Whether you're looking for a new greenhouse exhaust fan or an exhaust fan replacement, J&D's selection ranges from a 10" ES Shutter Fan to a 50" wall exhaust fan to our brand new 72" Mega Storm fiberglass exhaust fan. Our high performing, low maintenance and low operating cost fans are an excellent way to expel or exhaust the air in your greenhouse. J&D manufactures a complete line of galvanized and fiberglass exhaust fans that are perfect for your building.



## Tube Ventilation System

J&D Manufacturing's Tube Ventilation System is a specific method that gently introduces fresh air into enclosed environments without introducing damaging cold drafts. Each system is custom designed for proper airflow.

## High Pressure Fog & Cooling

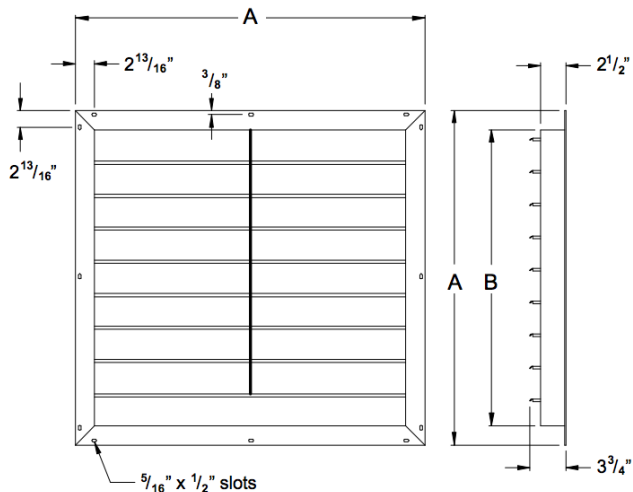
J&D Manufacturing has a variety of evaporative cooling products to enhance Mother Nature's cooling effect in your building or warehouse. Our high and low pressure misting and fogging systems are available as rings or crosses to attach to your recirculation fans, and also as lines of stainless steel tubing to run the entire length of your building.





Today's Coolair products are fabricated in a 210,000 sq. ft. manufacturing complex by employees who value economy and efficiency. Each ventilation system and accessory is crafted with quality materials for durable wear and low maintenance. American Coolair continues to design and manufacture the best, most cost-efficient ventilation products available anywhere.

### Coolair Type LRW Shutter (all aluminum)



The LRW Shutter is an all aluminum damper featuring an extruded aluminum frame with interlocking aluminum blades for maximum weather seal. Double panel shutters (LRW45 and larger) are constructed with a rigid 'T' section center member to prevent shutter blades from sticking. The LRW Shutter has nylon bearings on all movable linkage. A sturdy, extruded aluminum tiebar is connected exactly on the blade centers. Double panel shutters feature dual tie-bars (one for each panel). The LRW Shutter can be gravity or motor operated.

#### Standard Features:

- Aluminum blades
- Extruded aluminum frame
- Aluminum blade brackets and tie bars
- Blades pivot on nylon bushings

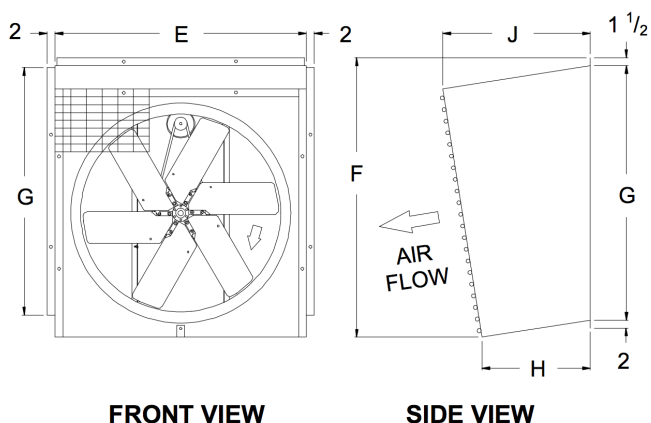
#### Dimensions:

- Dimension "A" is overall shutter width and height including flanges on all four sides. Width of the flange is 1<sup>5/8</sup>".
- Dimension "B" is the shutter frame width and height without flanges.

Shutter Model	A	B	Shipping Wt.
ACLRW27	30 1/4	27	12
ACLRW33	36 1/4	33	14
ACLRW39	42 1/4	39	17
ACLRW45	48 1/4	45	30
ACLRW51	54 1/4	51	24
ACLRW57	60 1/4	57	30

\*For Net Opening Add 1/2" to I.D.

### Coolair Type GSWH (Slope) Wall Housing



The GSWH slope wall housing allows the shutter to be placed on the intake side of the fan and eliminates air turbulence that occurs with the shutter on the down-wind side of the fan. Locating the shutter on the inlet prevents the warm air from being lost through the metal wall housing to the outside cold air in cold climate conditions. The slope wall housing is constructed of galvanized steel for long, durable wear and low maintenance.

**Rough Opening:** Add 1/2" to E for width and for 2" wall add 3/4" to G for height. 4" wall add 1 1/4" to G for height. 6" wall add 1 1/2" to G for height.

Shutter Model	E	F	G	H	J	Shipping Wt.
ACGSWH24	32 3/8	37 11/16	32 11/16	23 7/8	29 1/16	52
ACGSWH30	38 3/8	44 1/2	38 3/4	23	29 1/16	67
ACGSWH36	44 3/8	50 5/16	44 13/16	22 1/2	29 9/16	82
ACGSWH42	50 3/8	56 5/16	50 15/16	21 3/4	29 11/16	104
ACGSWH48	56 3/8	62 3/8	57	21 5/8	30 1/2	122
ACGSWH54	62 3/8	68 11/16	63 1/16	22 3/4	32 9/16	132



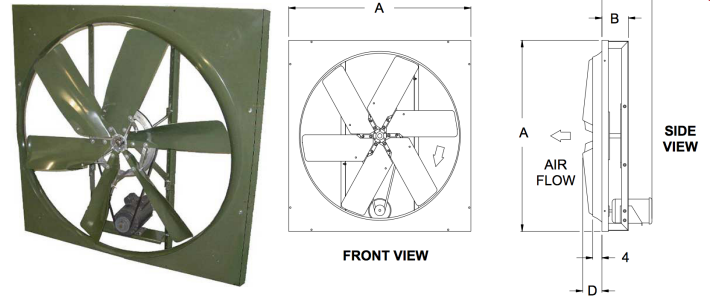
## Coolair Type NBF Fans

Economical, Practical, Effective

American Coolair's Type NBF Fan provides the solution to fresh air ventilation in most types of greenhouses. Type NBF fans are built to give you years of heavy-duty trouble-free service. The rugged, belt driven construction operates in any position, has permanently lubricated ball bearings, and is available with single or two speed totally enclosed motors. Coolair has developed a complete ventilation system for greenhouse use combining the Type NBF fan with all aluminum shutter and heavy gauge galvanized steel wall housing (square box or slope) for exterior mounting, allowing a maximum of unobstructed interior space.

### Basic Components

Frames are fabricated from heavy gauge steel with all welded construction offering the rigidity and strength for years of quiet trouble-free operation. A wide flared orifice is recessed and welded into the frame. Baked powder epoxy coating.



Fan Model	Blade Dia.	A	B	C
ACNBF24	24	32	10 5/16	17 7/8
ACNBF30	30	38	10 5/16	17 7/8
ACNBF36	36	44	10 1/16	17 3/4
ACNBF42	42	50	9 7/16	17 1/8
ACNBF48	48	56	10 1/4	17 7/8
ACNBFA54	54	62	10 5/8	18 1/4

Performance Data - Type NBF Fan  
All specifications subject to change without notice.

Fan Model	Blade Dia.	Motor H.P.	Fan RPM	Shipping Wt.	.05" S.P. CFM	.05" S.P. BHP
ACNBF24G	24"	1/4	627	70	5100	0.248
ACNBF24H	24"	1/3	706	73	5800	0.350
ACNBF24J	24"	1/2	815	79	6760	0.534
ACNBF24K	24"	3/4	972	93	8140	0.897
ACNBF30G	30"	1/4	486	77	7100	0.282
ACNBF30H	30"	1/3	533	80	7890	0.369
ACNBF30J	30"	1/2	627	86	9430	0.594
ACNBF30K	30"	3/4	706	106	10715	0.842
ACNBF36H	36"	1/3	419	100	9840	0.387
ACNBF36J	36"	1/2	474	110	11325	0.554
ACNBF36K	36"	3/4	541	118	13105	0.815
ACNBF36L	36"	1	609	120	14895	1.153
ACNBF42J	42"	1/2	365	122	13070	0.523
ACNBF42K	42"	3/4	433	128	15865	0.860
ACNBF42L	42"	1	474	130	17515	1.121
ACNBF48J	48"	1/2	303	146	16250	0.589
ACNBF48K	48"	3/4	350	152	19240	0.904
ACNBF48L	48"	1	373	154	20665	1.092
ACNBFH48L	48"	1	396	154	22080	1.304
ACNBFA54L	54"	1	350	280	23060	1.027
ACNBFA54M	54"	1 1/2	414	296	27780	1.681

## Coolair Motorized LRW Air Inlet Shutters

The LRW Air Inlet Shutter is designed to be used on opposite sides or ends of buildings. It features a sturdy aluminum frame, aluminum blades, aluminum reinforcing brackets and nylon bearings on all movable linkage. The LRW Air Inlet Shutter is fully automatic and comes standard with a motor to automatically open and close shutters.

### Replacement Motor and Linkage

Item Number:

ACAM115V  
Replacement 115V

### ACAM230V

Replacement 230V

### AEDM

Replacement Motor Only

Model	Air Flow Capacity CFM	Required Opening	Tot. Dim. w/Flange
ACLRW16E	1,000	17" x 17"	19 1/4" x 19 1/4"
ACLRW21E	1,800	22" x 22"	24 1/4" x 24 1/4"
ACLRW27E	3,000	28" x 28"	30 1/4" x 30 1/4"
ACLRW33E	4,500	34" x 34"	36 1/4" x 36 1/4"
ACLRW39E	6,300	40" x 40"	42 1/4" x 42 1/4"
ACLRW45E	84,00	46" x 46"	48 1/4" x 48 1/4"
ACLRW51E	10,700	52" x 52"	54 1/4" x 54 1/4"
ACLRW57E	13,400	58" x 58"	60 1/4" x 60 1/4"
ACLRW4527E	5,000	46" x 28"	48 1/4" x 30 1/4"
ACLRW4515E	2,800	46" x 16"	48 1/4" x 18 1/4"
ACLRW6015E	3,700	61" x 16"	64 1/4" x 18 1/4"
ACLRW6024E	6,000	61" x 25"	64 1/4" x 27 1/4"
ACLRW6036E	8,900	61" x 37"	64 1/4" x 39 1/4"



Wadsworth Control Systems is a third generation family-owned business. The talented and dedicated team at Wadsworth is a key element to the company's success and growth. The people of Wadsworth, working with our network of resellers interface with growers of all types to offer a high level of knowledge and expertise, seeing projects through to a smooth and well-executed completion.

## Wadsworth Controllers

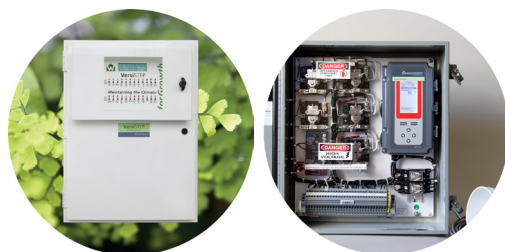
### Integrated Controls

- Highly capable, designed to accommodate any growing situation, large or small.
- Manages light, CO2, irrigation, outdoor sensors
- Graphing, data logging,
- Each piece of equipment has individual settings, allowing it to act independently with greater efficiency.



### Staged Controls

- Staged controls respond to changes in greenhouse temperature by activating groups or stages of heating and cooling equipment.
- The groups of equipment respond collectively to drive the temperature to the desired value.
- As the temperature moves further from the that value, additional stages of equipment engage.



Features	Staged Controls		Integrated Controls		
	MiniSTEP	STEP UP	EnviroSTEP	VersiSTEP	SEED
Number of zones	1	1	1	1 - 8	1 - many
Number of outputs or stages	4 stages 1 heat & 3 cool	6 stages 2 heat & 4 cool	12 outputs	24 outputs	12 - 24 expandable to many with Seed I/O
Setpoint Periods	2 setpoint periods	Day, night, DIF	Day, night, DIF	Day, night, DIF	4 setpoint periods
Ramping	No	Yes	Yes	Yes	Yes
Include sensors & cables	Temperature Probe with solar shield	Aspirated temp sensor; Options RH sensor	Aspirated & RH sensors; Additional sensors available	No	No
Manual Override	No	Yes	Yes	Yes	Yes
Display	Backlit Screen with current status	New bright screen with full menu & LED lights	New bright screen with full menu & LED lights	New bright screen with full menu & LED lights	Highly responsive touchscreen with Graphic User Interface
Logs & graphs	No	Yes temp only	Yes	54 3/4"	Yes
Equipment it controls	Heating & Cooling	Heating, cooling, vent & energy curtain	Virtually any equipment	Virtually any equipment	Virtually any equipment
Light Dep	No	No	Yes	Yes	Yes
Variable speed & modulating equipment	No	Yes	Yes	Yes	Yes
Track Daily Light Integral	No	No	No	No	Yes
Factors in outdoor humidity	No	No	No	No	Yes
Light control	No	No	Yes	Yes	Yes
Mist control	No	No	Yes	Yes	Yes
Integration control	No	No	Yes	Yes	Yes
CO2 control	No	No	Yes	Yes	Yes
Increments vents	No	Yes	Yes	Yes	Yes
Optional equipment	Weather Guard	Weather Guard Step Up Compass software Alarm Manager Lightning Protector	Weather Station STEPsaver software Alarm Manager Sensors: soil temp, light, hot water, CO2 Lightning Protector	Weather Station STEPsaver software Alarm Manager Sensors: soil temp, light, hot water, CO2	12-output Seed 1/0 Expansion Eather Station Alarm Manager Sensors: soil temp, light, hot water, CO2
Complete package	Contractor panel Solar shrouded temp sensor 75' cable Custom blueprints required	Aspirated temp sensor 100' of cable Override of Contactor Panel	Includes aspirated temp & RH sensor 100' of cable		

## Wadsworth Ventilation Products



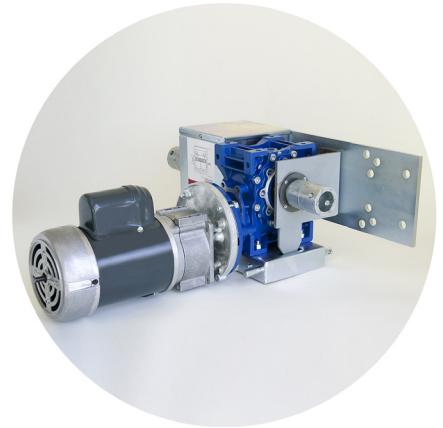
### Drive Units

#### VC 2000 Vent Drive Unit

- Gear motor: 1/5 HP – 115V; 60Hz; 2.5amps – TEFC
- Ball bearing motor with copper windings – Class B insulation
- Gear reducer: total reduction 1350:1; 1.2 and 3 RPM final output
- Output torque 1500 inch lb / 169 Nm
- Lifts up to 325' of 4' polycarbonate roof ridge vent or 400' of 4' polycarbonate side vent

#### VC100A Vent Drive Unit

- Gear motor: 1/20 HP – 115V; 60Hz; 0.68 amps – TENV
- Ball bearing motor with copper windings – Class B insulation
- Gear reducer: total gear reduction 1900:1; 0.85 and 2.5 RPM final output
- Output torque 500 inch lb / 56 Nm
- Lifts up to 75' of 4' polycarbonate roof ridge vent or 125' of 4' polycarbonate side vent



### Vent Controls

#### LST Lead Control:

This vent control moves the vent from full open to full close. It relies on the environmental control to send a signal to move incrementally.

#### 2R Follower Control:

This vent control is a follower control. It requires either the LST or Versatile Vent as a lead control.

#### Versatile Vent:

Operates any motorized greenhouse vent-roll-up or retractable roof system incrementally. Opens proportionally with a computerized control.

### Rack & Pinion

The rack and pinion connects the vent to the drive unit shaft. As the drive unit turns the shaft, the rack pushes the vent open or pulls it closed.

#### Features

- Zinc pinion gear with shoulders to bear the weight and extend the life of the gear
- Easy alignment: racks work even with vent is not square
- Freedom from corrosion – stainless clevis pins, cotter pins, set screws, cast sash brackets and tough Nylatron bearings
- Holes in pinion housing are punched with stamping tool to maintain exact spacing
- The PowerRack arm and housing are manufactured using aluminum alloy for strength and freedom from corrosion
- Wide load-bearing surfaces
- Replaceable parts







In 1986, Total Energy Group founders Peter Stuyt and Bert Neeft settled in Carpinteria CA, a thriving community of greenhouse flower growers. Bringing Dutch greenhouse technology and expertise to the area, they started installing light deprivation and shade systems for growers looking to automate and save energy. Working with growers, greenhouse manufacturers and distributors, has driven flexibility and innovation.

## Light Deprivation Systems



**Complete black out provided by Total Energy Group's fully automated Light Deprivation Systems.**

You can expect our light deprivation systems to make your crop flower reliably, securing the steady production flow modern greenhouse operations want. Our systems can be engineered to fit a wide range of greenhouse types and styles.

## Shade Systems



**Sun protection and energy savings provided by Total Energy Group's fully automated Shade Systems**

During the day time our systems will protect your plants from receiving too much light and heat, creating a growing environment in which your crop will thrive. At night closing the system will save on nighttime heating costs by containing the heat underneath the shade cloth.



Holland Heater guarantees the quality of the whole installation and leaves simple box-shifting to others. An optimal greenhouse climate is the ultimate aim and your heating installation is an essential part of this. Numerous factors play a role in a good heating plan. Holland Heater can offer you optimum advice about the heating options in your commercial greenhouse thanks to its many years' experience and expertise.

## Holland Heaters

Holland Heaters are very efficient direct fired units. Due to their clean burning, all the heat can be sent directly into the greenhouse. There is no need to use a chimney or exhaust stack. Because of this they are 99% fuel efficient. The largest unit available has a capacity of 440,000 BTU. Because there is minimal heat loss, less units will be needed to heat your greenhouse.

The heater has an air throw of 150 ft, convection tubing should not be used. In addition there is no need for a chimney or a support frame. The heater can be hung directly from trusses. Installation is therefore quite simple. With 220V, 1 phase power and a natural gas line with 5 lbs. pressure available the heater can be placed anywhere in the greenhouse. Propane heaters need between 7 and 35 PSI. CO2 enrichment is an added value for the Holland Heater. Since all the heat stays in the greenhouse, the CO2 produced by the unit will go directly to the crop, boosting and strengthening the growth of the plants. The heater is equipped with a fresh air intake unit. It will bring in air from outside the greenhouse to the burners to avoid reburning the air inside the greenhouse. The heater is also efficient in electrical power use. The largest unit is rated at only 4 amps.

**All models have intergraded connections for both a thermostat and a computer.**



CAF45

## Ventilators

Our greenhouse ventilators are famous for their high levels of air movement and low levels of noise. We offer several different models. They are all equipped with adjustable speed motors. The low RPM fans are very quiet. They are specially designed to distribute the air at a low RPM. They are very efficient in power consumption. The largest unit is rated at only 1.5 Amps.

The energy-efficient CAF45 recirculation fan brings air flow to the greenhouse. This gentle air movement doesn't just have a drying effect on the crops, which reduces the risk of illness; it also leads to an even temperature distribution in the greenhouse. This creates balanced growth for your crops. The fan speed can be regulated so you can control the air flow speed.

## Fresh Air Intake Unit

The fresh air intake is always supplying the heater with outside air for combustion. We supply a roof or sidewall hose connector that is connected to the duct hose. The other end of the hose connects to the heater. This unit is installed to avoid reheating the air inside the greenhouse. All models have intergraded connections for both a thermostat and a computer.



**Holland Heaters are known for their economical and clean operation.**

**CO2 enrichment is an added feature of the Holland Heaters.**

**All models have integrated connections for both thermostat and computer.**

**The use of the latest technology guarantees extreme environmental friendliness and low noise levels.**



With over 100 years of experience, Modine is one of the most trusted names in the HVAC manufacturing industry. That's because, no matter what your heating and air conditioning need is, we make it our mission to ensure that we get the solution right for you. Whether it's a custom-engineered product or service after the sale, our number one goal is to give you a heating and air conditioning partner who is easy to work with, while delivering a customer experience that is second to none.

### Modine High Efficiency II Gas-Fired Unit Heaters - PDP Models

The PDP (propeller) Modine High Efficiency II gas unit heater is a new generation of product that is inexpensive to install, easy to use, and offers excellent economy. First and foremost, these heaters have a thermal efficiency of 80%, and with the use of a power exhauster the seasonal efficiency is maximized.

The power exhauster supplied on Modine's PDP heaters can be rotated 180°, venting can be either vertical or horizontal, it is certified for use with Type B double wall vent pipe and is designed to use the smallest diameter vent pipe possible (and still accomplish Category 1 on all vertical vents), thus minimizing installation costs. In addition, the BDP line of heaters is certified to operate against up to .5 inches of external static pressure.

The PDP models have standardized on a 100% shut-off, intermittent pilot ignition (IPI) system with continuous retry on all IPI ignition systems. And because this ignition type is standard, all PDP heaters can be field converted to propane if desired. Also standard is a safety pressure switch that assures proper venting conditions. Another feature of the PDP is a field adjustable level hanging mechanism offered at no extra charge.

At 65 degrees ambient and unit fired at full rated input. Mounting height is measured from floor to bottom of unit.

**Available in:** Natural Gas Aluminum, Natural Gas Stainless Steel, and Propane Aluminum.



**Features:**

- 80% Thermal Efficiency
- Rotating Power Exhauster
- Horizontal or Vertical Venting
- Field Convertible to Propane
- Field Adjustable Level Hanging

Performance Data for Model HD and PDP High Efficiency Heater Units

	Model HD Sizes						Model PDP Sizes						
	30	45	60	75	100	125	150	175	200	250	300	350	400
Btu/Hr Input .	30,000	45,000	60,000	75,000	100,000	125,000	150,000	175,000	200,000	250,000	300,000	350,000	400,000
Btu/Hr Output .	24,000	36,000	48,000	60,000	80,000	100,000	120,000	140,000	160,000	200,000	240,000	300,000	320,000
Entering Airflow (CFM) @ 70°F	505	720	990	1160	1490	1980	2180	2550	2870	3700	4460	4870	5440
Air Temp. Rise (°F)	44	46	45	48	50	47	51	51	52	50	50	53	54
Max. Mounting Height (Ft.) .	10	10	12	14	12	16	16	17	15	19	21	20	19
Heat Throw (Ft.) @ Max Mtg Ht .	25	27	36	38	42	56	55	59	51	67	74	70	69

### Hot Dawg HD Models

- Certified for residential, commercial and industrial use.
- Whisper-quiet, vibration-free operation.
- Attractive low-profile design and neutral paint scheme assure that Hot Dawg will blend into any garage decor.
- Durable polyester-powder paint maintains life-long good looks.
- Power exhaust simplifies side-wall or roof venting with small-diameter vent-pipe.
- Versatile design allows for right or left-hand piping and installation.
- Lightweight, easily installs from ceiling with only 2 angle brackets (included).
- Installs quickly and easily with field wiring connections and knockouts for quick access to gas and electricity.
- Designed for natural gas or propane gas.
- Sealed, permanently-lubricated motor for trouble-free dependability.



These heaters are the most common greenhouse heaters installed. All Modine Heater Models are available from American Clay Works & Supply Company. Please contact a sales representative if you have any questions about other models.



## Modine Effinity93 93% Efficient Unit Heaters

Modine's Effinity93 (model PTC) condensing unit heater line is the most efficient gas-fired, condensing unit heater in North America.

With six models available — from 135,000 to 310,000 BTU/hr — all operating at 93% efficiency, the Effinity93 will dramatically lower your energy costs through decreased fuel consumption.

What does the Effinity93 mean for you and your operation?

- Substantial energy savings each heating season
- A 'greener' greenhouse and a reduced carbon footprint
- A smart investment that produces substantially lower energy bills, providing a respectable ROI



	Model Number					
	PTC134	PTC155	PTC180	PTC215	PTC260	PTC310
BTU/hr Input	135,000	155,000	180,000	215,000	260,000	310,000
kw	39.6	45.4	52.7	63	76.2	90.8
Thermal Efficiency	93%	93%	93%	93%	93%	93%
BTU/hr Output	125,550	144,150	167,400	199,950	241,800	288,300
kw	36.8	42.2	49	58.6	70.8	84.5

Once again, Modine raises your comfort level with the new, Effinity93 high-efficiency, condensing unit heater.

- Fuel Savings — At 93% efficiency, Modine's Effinity93 line is the most efficient condensing unit heater in North America. Combined with the added benefit of separated combustion, this allows you to save those otherwise wasted energy dollars for yourself. Dependable and Consistent
- Performance — Thanks to Modine's Conservicore technology, acidic corrosion concerns are eliminated, extending the life of your investments.
- Gentle Air Circulation and Even Temperatures — The Effinity93 guards against mold and maintains uniform wall-to-wall temperatures with consistent air circulation.
- Safer Growing Environments — Harmful combustion fumes are vented outside, away from plants.
- American-Made Quality — For more than 90 years customers like you have counted on Modine to stand by its workmanship. All products are still proudly made in the USA.

### Annual Gas Savings From Two Effinity93 Models Versus Comparable Power-Vented and Gravity-Vented Gas Fired Unit Heaters\*

City	PTC215		PTC260	
	Power Vented	Gravity Vented	Power Vented	Gravity Vented
Boston, MA	\$1,501	\$3,362	\$1,815	\$4,066
Chicago, IL	\$1,619	\$3,627	\$1,958	\$4,386
Dallas, TX	\$452	\$1,013	\$547	\$1,225
Louisville, KY	\$1,319	\$2,954	\$1,595	\$3,572
Minneapolis, MN	\$1,301	\$2,914	\$1,573	\$3,524
Portland, OR	\$810	\$1,814	\$979	\$2,194



\*Savings are realized by comparing the Effinity93 BTU/hr output to 78% seasonally efficient power-vented and 65% seasonally efficient gravity-vented unit heaters. Costs were determined by applying appropriate degree days at 65 degrees indoor design temperature under full year, 24/7 operation to each city's 2008 average price/therm of gas.

As you can see, just one Effinity93 can save you thousands of dollars in any given heating season versus a noncondensing unit. And when you factor in multiple units, it is not difficult to imagine the positive impact it can have on your bottom line. Rated with the highest average efficiency of any gasfired unit heater line in North America, Modine delivers the green in your greenhouse.



Since our 1980 inception, we have been at the forefront of heating solutions for rugged environments. From initial consultation to installation, BioTherm's staff is with you every step of the way. Whether through new construction, major upgrades, or retrofits, our systems are durable and efficient—resulting in high success rates and peak crops. You can always depend on BioTherm. Our team is committed to bringing growers innovative solutions that work as hard as they do.

### Raypak Boilers

BioTherm is the exclusive dealer for Raypak® boilers in the greenhouse market. Raypak continues to contribute to the category with innovations and efficiencies. They added condensing heat exchangers to extract almost every available BTU from the fuel. They scaled the technology into industrial capacities (4,000,000 BTU/HR with the RayPak® XTherm™) and also scaled it down into a compact wall-hung unit (90,000 BTU/HR with the RayPak® XPak™).

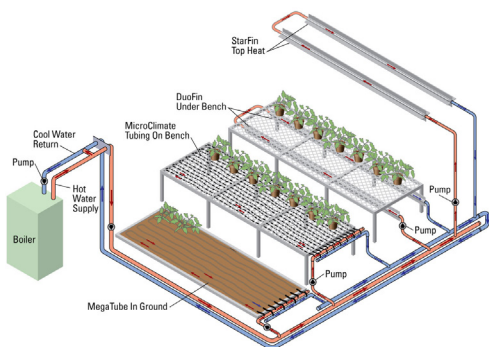
Each system includes comprehensive instructions for installation and operation and custom CAD drawings. All heating systems include two years of free support.



### Custom Designed Heating Systems

Our innovative energy saving technology is designed to meet the individual needs of even the most demanding projects -- whether through new construction, major upgrades, or retrofits. Each greenhouse heating system is tailored to specific climate and growing conditions. Our systems are durable and efficient which result in high success rates and peak crops.

BioTherm is more than heating. We deliver the highest quality products with unparalleled service, saving you time and money. From initial consultation to installation, BioTherm's staff is with you every step of the way. Each system includes comprehensive instructions for installation and operation and custom CAD drawings. All heating systems include two years of free support.



### DehuKing

BioTherm understands the demands of indoor gardening and greenhouse crops. A major issue is moisture control & humidity management. ChillKing has developed a line of pragmatic dehumidification solutions for agricultural applications without compromising performance: The DehuKing! A saturated atmosphere will result in moisture removal up to 2GPH per KW.

The units were developed to make sure the equipment was easily servicable, so replacement parts can be purchased at most re Fridgeration and HVAC supply stores (and other brands can be substituted with our approval if the exact part number cannot be located).



### Toob

BioTherm's "the Toob" Oxygen Infuser and associated products provide a robust solution for increased dissolved oxygen levels in your irrigation water. Systems start with flow rates as low as 2 GPM and are able to scale as high as required. Our most popular unit supports up to 18 GPM. Our infusion products can be installed in any type of irrigation system and are proven to increase levels of dissolved oxygen providing a broad spectrum of plant health benefits. Installation is simple and well documented, with technical support available before, during, and after installation.





Whether you are starting seedlings, rooting cuttings or drying, humidity control is critical. Anden helps create an environment that drives transpiration at an optimal rate, while helping prevent disease outbreaks. Anden dehumidifiers are the only dehumidifiers in this space that are built specifically to achieve the cooler, drier grow room conditions that simulate fall, which are ideal during flowering stages.

### Anden 210V1 Dehumidifier

210 Pints Per Day. Anden A210V1 Dehumidifier is designed and built for cultivation, with materials proven to perform in the extreme conditions of the grow room environment. Utilizing Anden Dehumidifiers for your grow facility will help ensure achieve your desired humidity balance for maximum growth potential.

#### Features:

- Positive pressure drain allows proper drainage without the need for a drain trap, providing for trouble free operation
- Self-sealing air filter for efficient protection of components; with easy access for replacement
- Included hanging kit doubles as lifting handles, provides easy, flexible installation
- Pre-installed electrical plug is easily removable for hard wired application, providing flexible installations
- Float switch terminals for easy set-up
- 77 remote control communicates with the dehumidifier, relaying all diagnostics from the dehumidifier to the control display; simple to monitor



Dehumidifier Model	Pints of Water Removed from Air (per day)	CFM @ 0.6"
ANDEN 210V1	210	525
ANDEN 320V1	320	830
ANDEN 320V3	320	830
ANDEN 200V1	210	400
ANDEN 300V1	300	500
ANDEN 300V3	300	500



### Anden Steam Humidifier

Anden AS35FP Steam Humidifier is a grow room solution that helps you achieve ideal conditions through humidity control. Fogger, mister, steam humidifier. Whatever you call it - this ductless solution is ideal for cultivation.

#### Features:

- High Capacity - 11.5 and 34.6 gallons per day of moisture to the air
- Illuminates service light when canister needs to be replaced. The steam canister may build up with minerals and change color but the steam humidifier produces clean sterile steam that won't leave a mineral residue on your plants
- Designed for easy install, and are fed automatically by a simple connection to a cold water supply. No need to ever fill the tank!
- Includes a fan pack - designed for stand alone applications
- 19.49" W x 19.36" H x 30.07" D



At Autogrow we are all about you, the grower. We've worked closely with our growers and resellers for over 20 years to ensure that everything we do is aligned with your needs and supports what you, as a grower, want to achieve. Autogrow is made up of a group of dedicated software designers, engineers and horticultural technology experts who share the vision of making the best control systems in the world at a price that growers can afford.

### Multigrow

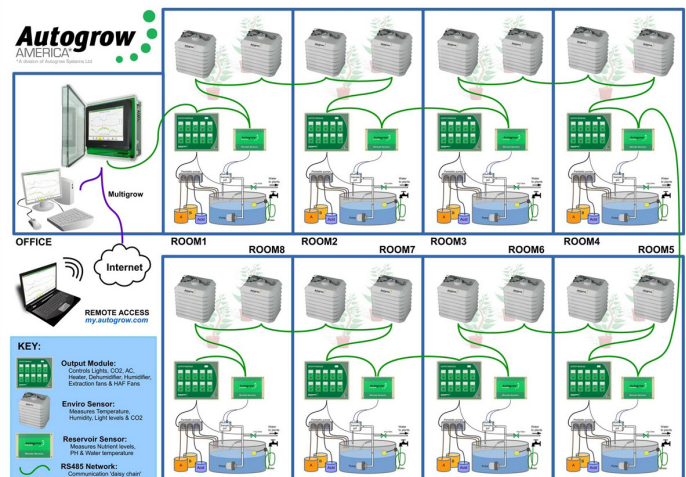
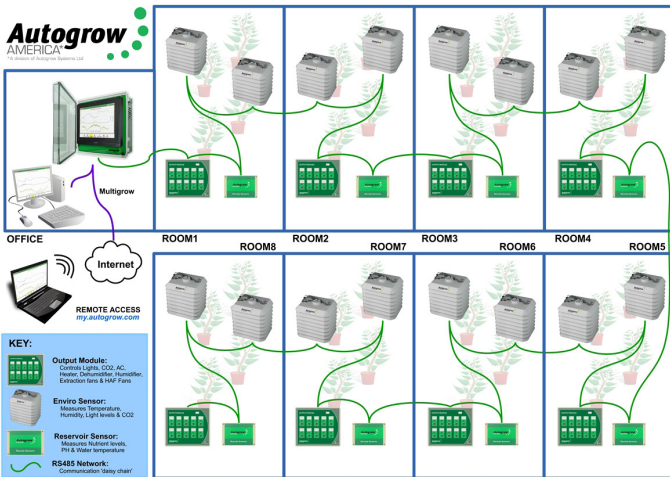
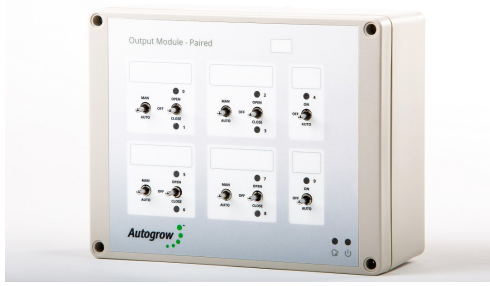
The Multigrow controller is a modular system that can control the climate of up to 8 greenhouse/warehouse compartments in addition to managing other functions like fertigation, hydroponic dosing and environment monitoring; the best part is you only pay for the functions you will be using. You can receive alarms by SMS or email and the controller has remote access using a wi-fi tablet or smart phone.

Although the climate control has a high level of functionality, many of the more complex settings are preset in the factory and you will get excellent results without changing these. They are provided for the perfectionists who would be frustrated if they were not available. Luckily, we provide "restore points" so if you change some advanced settings and don't get the results you expected it is simple to put the settings back to how they were.

#### The Multigrow is available in the following formats:

- A large touch screen format which is proving to be the most popular as it provides a larger, high resolution, high brightness full color touch interface. This is shown in the picture above.
- A screenless controller that is connected to a desktop LCD monitor, keyboard and mouse. This is a low cost option for situations that have a clean, office like environment in which to locate the MULTI. Alternatively, a wi-fi access point can be added to allow a tablet such as an iPad to be used as the user interface.

All of the above options can be connected to a computer network by ethernet cable or wi-fi and the controller can be accessed by any computer on the network that has a standard web browser. In larger installations it is convenient to set up an office computer with a number of screens (perhaps 3 or more) so that a different aspect can be displayed on each screen.



The Multigrow is a revolutionary control system that has been specifically designed to deliver class leading control while being built around a user friendly interface. The Multigrow features both a modular network structure and a modular software configuration. Each Multigrow System can be configured to exactly suit the client's requirements. What's more, the Multigrow network can be extended and software modules added to allow the system to grow with the client's operational requirements.

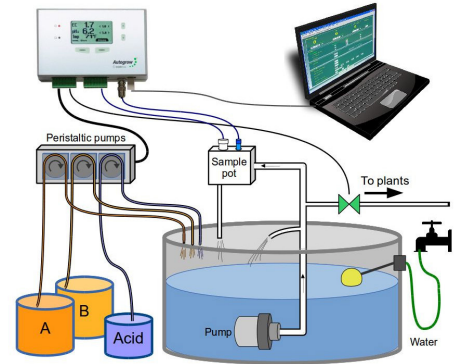


### IntelliDose

Automatically manage your nutrient and pH levels, set remote alarms and data log your progress with this one simple machine! The IntelliDose set the industry standards for auto dosing! The IntelliDose will dose up to a 9 part blend (nutrients, additives, pH adjuster) while maintaining your preset EC and pH settings. Here are a few of the many features:

#### Specs:

- 9 outputs 24VDC
- Nutrient measurement units EC, CF or TDS (500/640/700)
- Measured range 0.00 to 9.99EC, 0.1 to 99.99CF, 0 to 7000PPM
- Nutrient resolution to .01mS/cm, 0.1CF
- Nutrient measurement accuracy +/-0.1EC, 1.0CF or 10PPM – Temp. compensated
- Nutrient dosing range 0.00 to 5.99EC, 0.1 to 59.9CF, 0 to 4200PPM
- pH resolution and accuracy – 0.1pH
- pH measurement range 2pH to 12pH
- pH dosing range 4.5 to 8 pH
- Nutrient and pH dosing times settable from 1 second to 30 minutes
- Dosing interval settable from 0 minutes (continuous dosing) to 244 minutes
- Sequential dosing to prevent power surges
- Temperature resolution and accuracy 1C/2F
- Temperature range 0-50C/32-125F
- Operating temperature range 0-50C/32-125F (not in direct sunlight)
- Power source – mains supplied 24VDC with 120V pigtail... specify if mains voltage and pin type vary
- Outputs will have the same voltage as the supplied voltage from the power pack
- Nutrient sensor using DiPulse™ technique to resist fouling



### IntelliClimate

Automatically manage all aspects of your climate – from temperature to CO2, lighting to humidity, all in one simple controller. Designed specifically for the indoor grower, the IntelliClimate controls all aspects of your growing environment. No comparable controller on the market gives you this much accuracy, efficiency and commercial grade control!

#### Specs:

- 8 outputs 24VDC
- RH resolution ± 2% and accuracy
- Temperature resolution and accuracy 0.5°C/32.9°F
- Temperature sensor range 0-50°C/32-125°F
- Operating temperature range 0-50°C/32-125°F (not in direct sunlight)
- CO2 resolution and accuracy 50ppm
- PPower source – 120V/240V into 24VDC plug pack (supplied)
- Outputs will have the same voltage as the supplied voltage from the power pack
- Supplied with 3m USB cable

### Aphaea

A comprehensive single-site system that combines management of your climate, irrigation and fertigation control, into a single easy-to-use system.

Aphaea continually monitors the environmental conditions, making adjustments to keep the controlled environment optimized for your plants, while using best-cost decision-making to avoid wasting energy. It can also dynamically adjust irrigation schedules based on actual light available to the plant. All this intelligence is the result of Autogrow's continuous research into growing automation for over 20 years.

It's simple – no requirement for complicated add-ons

It's flexible – can control a wide range of climate and fertigation equipment

It's accessible – anywhere, via your computer, smartphone or tablet in realtime (with my.autogrow)





At Autogrow we are all about you, the grower. We've worked closely with our growers and resellers for over 20 years to ensure that everything we do is aligned with your needs and supports what you, as a grower, want to achieve. Autogrow is made up of a group of dedicated software designers, engineers and horticultural technology experts who share the vision of making the best control systems in the world at a price that growers can afford.

## V-Flo Fan (Multifan)

### Vertical ventilation for the greenhouse

Ventilation plays a vital role in modern greenhouses. Vertical ventilation results into a better and more uniform climate and energy savings. Because of several energy technical improvements in modern greenhouses and more intensive cultivation methods, the necessity of controlling humidity levels on crop level increases. With the V-FloFan, Vostermans Ventilation offers the grower the opportunity to reduce the negative impacts, due to humidity, in a simple and energy efficient way. The air is distributed over a wide surface through an aerodynamic conductor. The V-FloFan can be applied for a wide range of crops. The fan is easy to mount in greenhouses and easy to maintain.



### Optimal microclimate on crop level

In modern greenhouses ventilation plays a vital role. Through circulation of air, heat distribution in the greenhouses is optimized, which enhances a uniform development of the crops. With the V-FloFan, Multifan offers the grower the opportunity to reduce the negative impacts, due to humidity, in a simple and energy efficient way. The vertical airflow results in an optimal uniform microclimate on plant level.

### Why choose this fan:

- Creates an active microclimate on crop level
- Results an uniform climate in greenhouses
- Controls the humidity level
- Constant low airspeed at crop level
- Reduces the energy costs through vertical airflow
- 3-year warranty

### Features:

- Special aerodynamic shaped conical outlet for optimal vertical airflow
- The V-FloFan is applicable for several cultivation systems and crops
- Reflecting white color for usage in greenhouses
- IP55 motor (water and dust resistant)
- Low noise (45/47 dB at 7 meters)

### Horizontal ventilation solutions for Greenhouses:

For greenhouses with large temperature/humidity variation, we have a horizontal circulation fan available for a more uniform indoor climate. This horizontal circulation fan mixes the air faster compared with the V-FloFan, but has less effect at root level. The V-FloFan and circulation fan are not suitable to use together. Please, contact our Vostermans Ventilation team for technical details about the circulation 40 cm or 50 cm fan.





## Multifan Fans

Vostermans Ventilation manufactures a wide range of Multifan axial fan products for agricultural (greenhouse, pork, poultry, dairy) and industrial applications. Axial fans of the brand Multifan are known and valued for efficiency and trustworthiness. Motors are produced in-house and the correct motor-impeller combination results in optimal performance. Multifan products are well-known for consistent high quality, durability and longevity with worldwide availability.



### Benefits Multifan axial fans

- Low energy consumption
- All parts can be recycled
- Low level of maintenance and long life cycle
- Different varieties and mounting positions
- Low noise level



## EMI Fans

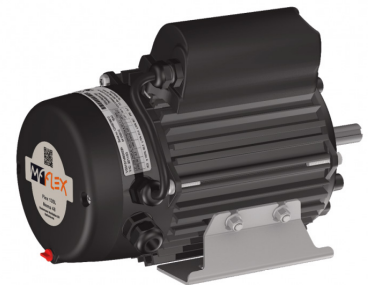
Using the brand name EMI, Vostermans Ventilation manufactures a wide range of products for ventilation in agricultural and industrial applications. An axial fan, well known on the market for its quality and as a specific ventilation solution with our own, in-house manufactured, motor and stainless steel fan blades.

### Benefits EMI axial fans

- Low energy consumption
- All parts can be recycled
- Low level of maintenance and long life cycle
- Different varieties and mounting positions
- Low noise level

## M-Flex Motors

Using the brand name Mf-Flex, Vostermans Ventilation manufactures a motor line with a wide application field. Because the Mf-Flex motors can be supplied with various shaft lengths and a large number of different mounting possibilities, many applications are possible. Match this flexible design motor with Vostermans Ventilation's extensive impeller program, and we can offer the perfect motor-impeller combination to meet the specifications of the customer for a custom-made fan.



## Multifan Fans

The Mf-Net line is an open modular control system for various applications. By means of simply adding various modules together, you can go from stand-alone controllers to high solution, integrated control systems. The in-and output signals from main controllers and power units are easy to connect by 0-10 Volt or regular electric connections, resulting in various combinations. To choose the right combination of Mf-Net modules various criteria and specifications can be used.

- Economy: simple operation, low investment
- Endurance: robust, durable
- Energy: energy saving, speed control
- Safety: reliable alarms



# HYDROPONICS



## BRANDS CARRIED

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**MYRON L<sup>®</sup>**  
**COMPANY**  
Water Quality Instrumentation

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[myronl.com](http://myronl.com)

**M Milwaukee**  
Measurements made easy

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[milwaukeeinstruments.com](http://milwaukeeinstruments.com)

**HYDROFARM<sup>®</sup>**

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[hydrofarm.com](http://hydrofarm.com)

  
**HAWTHORNE GARDENING**  
co

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[hawthorne-gardening.com](http://hawthorne-gardening.com)



The Myron L<sup>®</sup> Company, founded in 1957, is a privately owned and operated California Corporation. Since the 1960's, the company has established itself as the leading manufacturer of high quality and simple to operate conductivity and pH instrumentation for municipal, commercial and industrial water quality control, chemical concentration testing and process control.

## Myron pH Pens

### Myron Ultrapen PT1

This instrument is designed to be extremely accurate, fast and simple to use in diverse water quality applications. Advanced features include the ability to select from 3 different solution types that model the characteristics of the most commonly encountered types of water; proprietary temperature compensation and TDS conversion algorithms; highly stable microprocessor-based circuitry; user-intuitive design; and waterproof housing. A true, one-handed instrument, the PT1 is easy to calibrate and easy to use. To take a measurement, you simply press a button then dip the pen in solution. Results display in seconds.

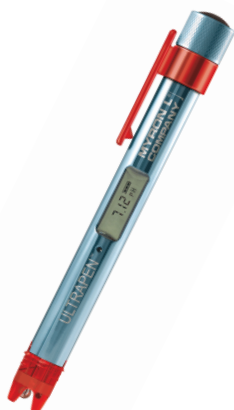
- Accuracy of  $\pm 1\%$  of READING  $\pm .2\%$  at calibration point
- Reliable Repeatable Results
- Automatic temperature compensation
- Autoranging
- Accuracy of benchtop lab equipment in an affordable, portable, compact pen



### Myron Ultrapen PT2

This instrument is designed to be extremely accurate, fast and simple to use in diverse water quality applications. Advanced features include automatic temperature compensation; highly stable microprocessor-based circuitry; user-intuitive design; and waterproof housing. A true one-handed instrument, the PT2 is easy to calibrate and easy to use. To take a measurement, you simply push a button then dip the pen in solution. Results display in seconds.

- Accuracy of  $\pm 0.01$  pH
- 1, 2 and 3 Point Calibration
- Proprietary Sensor Design
- Automatic temperature compensation
- Reliable Repeatable Results
- Rugged, reliable, shock-resistant fully encapsulated electronics
- Durable body constructed of aircraft aluminum



### Myron Ultrapen PT3

This instrument is designed to be extremely accurate, fast, and simple to use in diverse water quality applications. Advanced features include highly stable microprocessor-based circuitry; automatic temperature compensation from 15°C to 30°C while in calibration mode; user-intuitive design; and waterproof housing. A true one-handed instrument, the PT3 is easy to calibrate and easy to use. To take a measurement, you simply push a button then dip the PT3 in solution. Results display in seconds.

- Accuracy of  $\pm 10$  mV ORP
- Proprietary Sensor Design
- 99.9% Pure Platinum Electrode
- 3 Calibration Options with Automatic Solution Recognition
- Automatic Temperature Compensation in Calibration Mode\*
- Rugged, reliable, shock-resistant fully encapsulated electronics



Milwaukee Instruments, Inc's precision, diagnostic equipment is used in laboratories, food and beverage operations, agriculture, industry, and by hobbyists in a wide variety of applications. We manufacture affordable, easy-to-use meters, testers, monitors and controllers for measuring pH, EC, TDS, ORP, LUX, DO and all types of photometers and mini-titrators.

### Milwaukee Instruments PH/EC Testing / Brix Degree Testing

Code	Description
MIPH600-HQ	pH600 Economy PH Pen
MIPH55	pH55 PH Tester With LCD
MIMW802	802 Combination pH/EC Digital Combination Meter
MIEC59	EC/TDS/Degrees Celcius Waterproof EC Tester with Auto Calibration
MIAG900	802 Combination Meter with Case and 2 Solutions
MIMA871	Digital Refractometer for Degrees Brix Testing
MI9015	220ml Storage Solution
MI9016	220ml Cleaning Solution
MIM10004B	4.01 pH Buffer Solution in 20ml Sachets
MIM10007B	7.01 pH Buffer Solution in 20ml Sachets
MIM10030B	1,413 ms/cm EC Solution in 20ml Sachets
MIM10032B	1382 PPM TDS Solution in 20ml Sachets
MIM10442B	1500 PPM TDS Solution in 20ml Sachets
MIMA9011	220ml Reference Electrolite Solution





Hydrofarm has over 200 team members and nine distribution centers across North America. Our mission is to provide friendly on time service, delivery, and value by offering the right gardening products, innovation, and expertise to make your indoor, hydroponic, organic and/or greenhouse efforts easier and more productive.

### Hydro Systems



C.A.P. Ebb Monster Inner 5 gal Bucket Only

SKU: CAEBBMIBUC  
Brand: CAP



C.A.P. Ebb & Gro Outer Bucket Only

SKU: CAEBBOBUC  
Brand: CAP



55 gal Drum with Locking Lid

SKU: HG55DRUM  
Brand: Active Aqua



55 gal Drum with Pre-Drilled Locking Lid

SKU: DRM58T  
Brand: Active Aqua



Slucket 10 Site Posiflow Complete System, 2' Center - A

Hydrofarm Exclusive!  
SKU: SLUSYS102  
Brand: Slucket



Slucket Control Lid, no hole - A Hydrofarm Exclusive!

SKU: SLUCBLID  
Brand: Slucket



Slucket Rubber Dual Clamp - A Hydrofarm Exclusive!

SKU: SLURDC3  
Brand: Slucket



Active Aqua Root Spa 5 gal 8 Bucket System

SKU: RS5GAL8SYS  
Brand: Active Aqua



Active Aqua Root Spa 5 gal 4 Bucket System

SKU: RS5GAL4SYS  
Brand: Active Aqua



Active Aqua Root Spa 5 gal Bucket System

SKU: RS5GALSYS  
Brand: Active Aqua

### Meters & Solutions



Bluelab Sample Pot

SKU: BLU8160  
Brand: Bluelab



Bluelab External Lockout & Alarm Box

SKU: BLU8170  
Brand: Bluelab



Bluelab Pro Controller

SKU: BLU8120  
Brand: Bluelab



Bluelab pH Controller Connect

SKU: BLU8011  
Brand: Bluelab



Bluelab pH Controller

SKU: BLU8004  
Brand: Bluelab



Autopilot Digital pH Controller

SKU: APCEPH1  
Brand: Autopilot



Active Aqua Hydroponic pH Test Kit

SKU: ESPHTEST  
Brand: Active Aqua



Bluelab Pulse Multimedia EC/MC Meter

SKU: BLU8014  
Brand: Bluelab



Bluelab PeriPod M4

SKU: BLU8135  
Brand: Bluelab



Bluelab PowerPod

SKU: BLU8150  
Brand: Bluelab



Hawthorne Gardening Co. is a house of brands that provide an incredible array of tools and services for a multitude of gardening needs and yet all share one mission: to help people live happier, healthier lives through gardening. Our company is dedicated to creating high-quality products founded in social and environmental responsibility.

### Complete Systems

Hawthorne Gardening Company offers a complete range of grow light systems that feature grow light ballasts and Sun System reflectors in easy-to-install and operate packages. Specializing in wholesale gardening supplies, Hawthorne Gardening Company is the largest distributor of indoor gardening, greenhouse, aquaponic and hydroponic gardening supplies.



Sun System® AC/DE Fusion® 8 in Air-Cooled Fixture



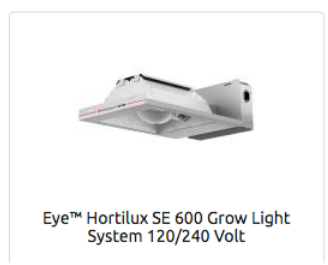
Sun System® Magnetic Trifecta®



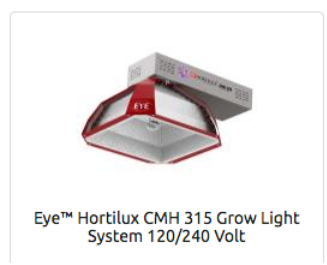
Sun System® Digital 250/400 Watt



Sun System® HPS 150 Grow Light Fixture



Eye™ Hortilux SE 600 Grow Light System 120/240 Volt



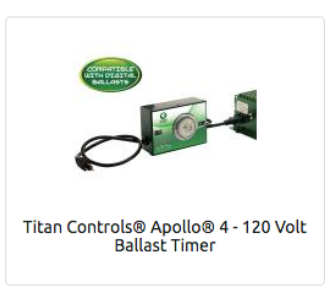
Eye™ Hortilux CMH 315 Grow Light System 120/240 Volt

### Timers & Instruments

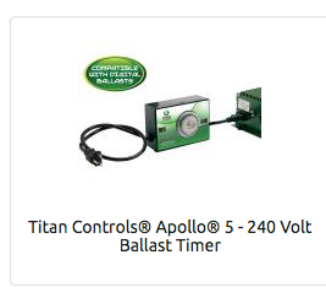
For indoor gardening, lighting timers and controllers are essential equipment. Hawthorne Gardening Company is the exclusive distributor of Titan Controls and stocks the complete Titan Control line of products including the Titan Controls Apollo Series ballast timers, Apollo Series 2-Cycle Timers, Apollo Series Digital Timers, Apollo Series Mechanical Timers, Titan Control Helios Lighting Controllers and the entire line of Titan Controls Spartan Series timers and controllers as well as Intermatic timers, PAR meters, soil testers, moisture meters, temperature and humidity monitoring systems, digital thermometers and Hygrometers.



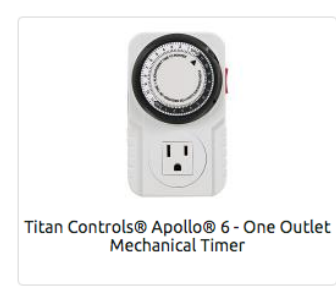
Titan Controls® Apollo® 2 - Cycle Timer with Photocell



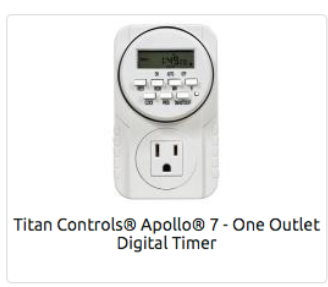
Titan Controls® Apollo® 4 - 120 Volt Ballast Timer



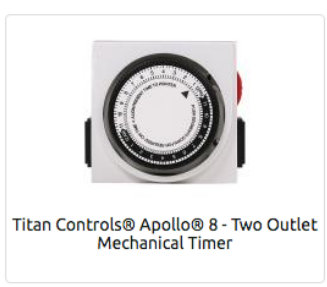
Titan Controls® Apollo® 5 - 240 Volt Ballast Timer



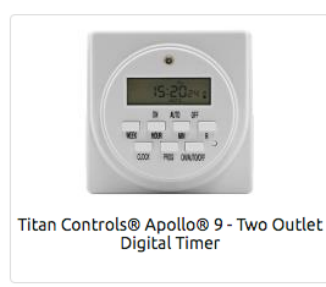
Titan Controls® Apollo® 6 - One Outlet Mechanical Timer



Titan Controls® Apollo® 7 - One Outlet Digital Timer



Titan Controls® Apollo® 8 - Two Outlet Mechanical Timer



Titan Controls® Apollo® 9 - Two Outlet Digital Timer



Titan Controls® Apollo® 10 - 240 V Mechanical Timer

# LANDSCAPE



## BRANDS CARRIED

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p. 2-3  
[dewittcompany.com](http://dewittcompany.com)

Landscape  
Accessories

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p. 4  
edging, deer fencing, etc.



p. 5  
[hortind.com](http://hortind.com)





DeWitt operates out of a 350,000 square-foot facility which is centrally located in the heartland of America. By continually investing in state-of-the-art technology and equipment, DeWitt is able to consistently provide the highest quality products available in the lawn and garden industry. DeWitt products are used in more than 70% of the commercial landscaping done throughout the United States.

## Landscape Fabrics - What You Need to Know

**1:** The fabric should be just strong enough to withstand the most vigorous stresses of application, but no more. **2:** The fabric should have a consistent distribution of fibers and a small enough opening size to keep weed/grass from coming up through the fabric. **3:** The fabric must be porous enough to allow water and air to pass freely to the soil.

### Seed Guard (0.5 oz)

DeWitt Plant & Seed Guard is a lightweight, .5 oz., white, spunbond fabric for use in grass seeding in commercial and residential sites. It creates an excellent micro-environment for seed germination and seedling growth. This fabric provides a 90-95% average seed germination compared to 60-65% with straw or hay and can be used as a low cost insulation against the elements.



Available Sizes		
6ft x 250ft	12ft x 500ft	12ft x 1000ft



### Deluxe Plus (1 oz)

This 1 oz. fabric protects vegetation from frost by raising temperatures beneath the fabric. In addition to providing protection against cold, wind, birds, insects and scorching sun, Deluxe Plus helps produce larger, earlier and more productive yields.

Available Sizes		
6ft x 1000ft	12ft x 1000ft	14ft x 500ft

### Supreme (1.5 oz)

This 1.5 oz. fabric is ideal for protecting flowering annuals, bedding plants and vegetables from severe cold and freezing. Temperatures underneath the fabric are warmer than outside conditions. Want to lengthen your harvest time and extend your flowering season? Then use DeWitt's Supreme Crop Protection Fabric.



Available Sizes		
6ft x 500ft	12ft x 250ft	12ft x 500ft



### Ultimate (2.5 oz)

This ultimate 2.5 oz. fabric provides freeze protection or greater plant protection during extreme conditions. DeWitt's Ultimate is the most durable, effective product available on the market for "all winter" protection of your perennials and other ornamentals. Designed to hold in heat and allow irrigation and rain to pass through, this fabric will not cause foliage burn even on sunny days.

Available Sizes		
6ft x 250ft	12ft x 250ft	15ft x 250ft



### Dewitt Sunbelt Weed Barrier (Black)

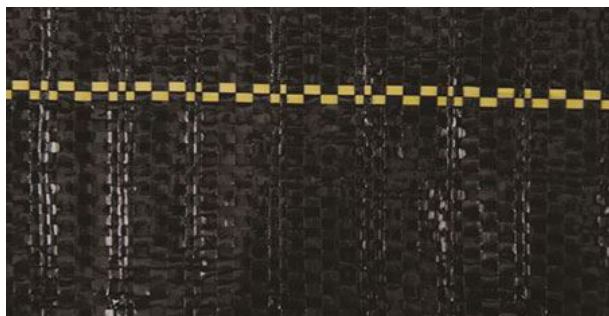
Our most popular ground cover product, Dewitt Company Sunbelt Weed Barrier is 3.2 oz per sq yard in an 11x21 weave. The fabric is made of black, high U.V. resistant polypropylene which is woven to allow both air and water to pass through, reducing standing water and root rot. 12” marker lines help with container alignment. The fabric can be used under gravel, soil, sand, or pine straw to hinder weed growth and reduce erosion. This product has continued to be the first choice for professional landscape installation and the most effective in preventing weed growth over a long term.



#### Characteristics:

- Blocks weeds and helps prevent erosion.
- Long lasting, high U.V. resistant polypropylene.
- 12” marker lines for easy container alignment.
- Water and air permeable and mildew resistant.
- Use under gravel, soil, sand or pine straw.

Item Number	Roll Size	Sq. Ft. / Roll	Weight
DWSBLT3300	3' x 300'	900	23
DWSBLT4300	4' x 300'	1200	29
DWSBLT6300	6' x 300'	1800	44
DWSBLT10300	10' x 300'	3000	75
DWSBLT12300	12' x 300'	3600	87
DWSBLT15.5300	15.5' x 300'	4500	112



- Sunbelt ground cover weed barrier
- UV stabilized and permeable to air and water and a low cost, ecology safe alternative to herbicide use
- Allows air and water to penetrate for worry-free irrigation
- Provides a 90 to 95 percent average seed germination compared to 60 to 65 percent with straw or hay
- Measures 300-foot length

### Dewitt Sunbelt Weed Barrier (White)



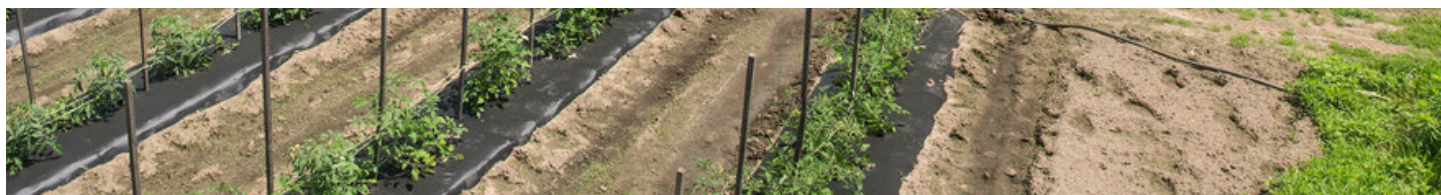
Item Number	Roll Size	Sq. Ft. / Roll	Weight
DWSBLTW3300	3' x 300'	900	23
DWSBLTW6300	6' x 300'	1800	44
DWSBLTW12300	12' x 300'	3600	87
DWSBLTW15300	15' x 300'	4500	112

### Restrictor Landscape Fabric

Our Restrictor landscape fabric is a black woven needle-punched fabric. Restrictor provides excellent strength and toughness and has a very high UV resistance. It has a consistent opening size that prevents weed growth and allows water and air exchange with the soil.



Weight	Material	Tensile Strength	Elongation	Trap / Tear	Burst Strength
48 oz / sq. yd	Woven Needle Punched Polypropylene	110 / 100 lbs.	31 / 59%	57 / 55 lbs.	280 PSI





### Steel Roll Top Edging

Steel Roll Top Edging comes in 4" x 10' strips. This edging has the top edge rolled at the factory to provide protection from the sharp edges. Steel Roll Top Edging is being speced on many jobs.

Our edging is available in 3 gauges including 18ga, 16ga and 14ga.

Code	Description
WLRTE	18 Gauge
WLRTE16	16 Gauge
WLRTE14	14 Gauge
WLRTEP	16 Gauge Preforated



### Dewitt Deer Fencing

Dewitt Deer Fencing is an inexpensive polypropylene netting material that effectively stops deer from entering garden areas. 3/4" Mesh.

Available in two sizes.

Code	Size
DWDF7100	7' x 100' Deer Fencing
DWDF7100	7' x 350' Deer Fencing

### Burlap

7.5 ounce underthread burlap for wrapping tree balls.

Item Number	Size
WLB3X300	3' x 300'
WLB4X300	4' x 300'
WLB5X300	5' x 300'
WLB6X300	6' x 300'

### Erosion Control Mat

48" x 225' Biodegradable jute 1" square.

Item Number: **WLJ4X225**

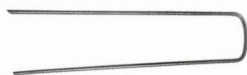


### Ground Staples

A 5 1/2" inch U shaped nail to stabilize fabric to the ground.

**6" Fabric Staples - 100 per box**

Item Number: **WLFP**



### Edging Staples

An 11 inch edging staple used to secure metal edging in place.

**500 per box**

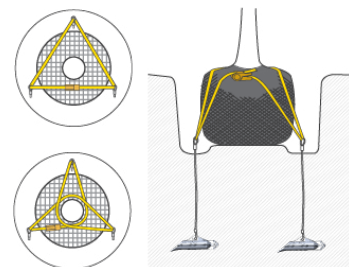
Item Number: **LAES**



### Duckbill Total System

Saving time and labor, patented Duckbill earth anchors work like toggle bolts in soil. They are driven into the ground with no holes, no digging, and minimal soil disturbance creating a safe and environmentally sensitive installation. With an upward pull, the anchor tendon rotates the Duckbill into a perpendicular "anchor lock" position in undisturbed soil resulting in superior holding capacities.

Duckbills are manufactured from aluminum alloys



#### Individual Anchors

**Model 40-DB1 - Item Number: FI140-DB1**

300# rated capacity. Cabled with 20" of 1/16" galvanized steel cable. Anchor weight 1 oz. Standard pak-50/box.

**Model 68-DB1 - Item Number: FI168-DB1**

1,000# rated capacity. Cabled with 2 1/2' of 1/8" galvanized steel cable. Anchor weight 4.5 oz. Standard pak-24/box.

**Model 88-DB1 - Item Number: FI188-DB1**

3,000# rated capacity. Cabled with 3 1/2' of 1/4" galvanized steel cable. Anchor weight 14 oz. Standard pak-12/box.

#### Standard Drive Rods

**For Model 40: DR-2 - 3/8" round 2' long steel hand drive rod with 1/4" tip and large striking head. Item Number: FIIDR2**

**For Model 68: DR-1 - 1/2" round 3' long steel hand drive rod with large striking head Item Number: FIIDR1**

**DR1 HD (Heavy Duty): 3/4" round 3' long steel hand drive rod with large striking head. Tip is turned down to 1/2". Power rod available on request**

**For Model 88: DR-3 - 3/4" round 4' long steel hand drive rod with large striking head. Item Number: FIIDR3**



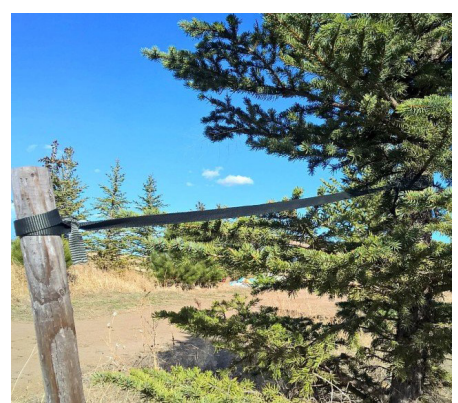
Hort Industries Ltd. offers high quality professional horticultural products to Greenhouse, Nursery, Distributor and Consumer Retailers throughout North America. Hort products are designed, assembled, packaged, and distributed at a low cost right here in the USA. Domestically sourced materials help secure American jobs while permitting much greater control over costs and production times.

### Hort Straps

Tree Straps Made in America

- Higher Quality
- Better Value
- Stronger
- Stainless Steel Eyelets

Available in Sizes:



### Hort Wraps

Tree Wrap Made in America

**Protects Against:**

- Sun Scald
- Windburn
- Severe Frost

**Benefits:**

- More Stretch
- Better Value
- Biodegradable Paper
- Stronger

**Available in Sizes:**

- 1.) 3" x 105' Roll
- 2.) 4" x 105' Roll

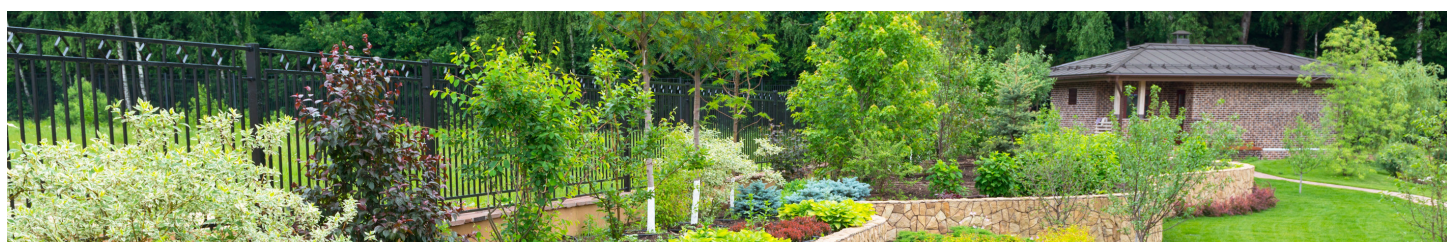
### Hort Ties

Soft and Safe for Staking and Guying Trees - Made in America

- Replaces Traditional Wire and Hose
- Ideal for use with Hort Strap Tree Straps

Available in Sizes:

- 1.) 250' Spool
- 2.) 500' Spool



# FABRICS



## BRANDS CARRIED

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**Green-tek**

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p. 2-6  
[green-tek.com](http://green-tek.com)



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p. 7  
[totalenergygroup.com](http://totalenergygroup.com)

**svensson**

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p. 8  
[ludvigsvensson.com](http://ludvigsvensson.com)



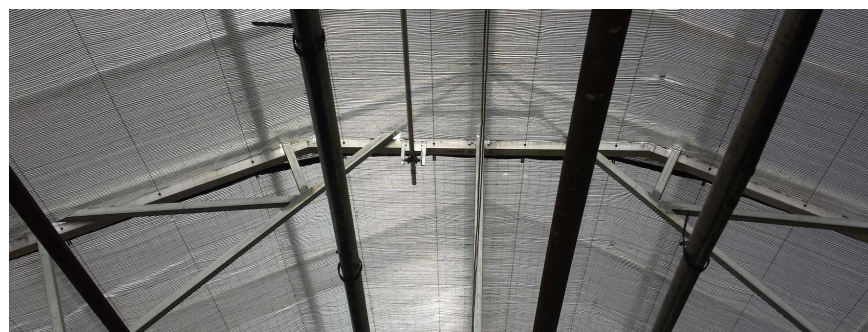
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[dewittcompany.com](http://dewittcompany.com)

## Aluminet Cool Shade

World Famous Aluminet is a highly reflective Aluminized Shade Fabric that provides a radically cooler shade environment than does traditional black shade cloth. Reflecting the intense IR radiation of the Sun, many Aluminet customers report double digit temperature improvements versus the dark shade cloth that they had used previously.

Aluminet Thermal Screens offer superior year round climatic protection for flowers, potted plants and vegetables. Aluminet acts like a mirror as its unique aluminized screens reflect unwanted sunlight and harmful radiation heat from the greenhouse during summer, and preserve the heat inside the greenhouse in winter.



### Benefits of Aluminet include:

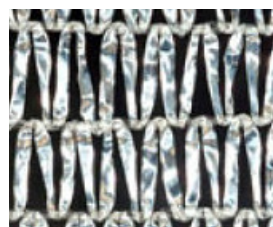
- Moderation of day/night temperatures
- Uniform shadows
- Enabling microclimate control in greenhouses and nurseries.
- Control of air movement and optimum diffused light transmission to the crops.
- Aluminet heat curtain protects against frost radiation and saves energy in heated structures due to its high reflectivity.

### Specifications

Standard Widths	6.5 feet, 13 feet, and 26 feet
Roll Length	To size - up to 2,000 feet
Warranty for U.V. Stabilization	5 years under the covering / 4 years over the greenhouse
Availability	30%, 40%, 50%, 60% (70% by special order)

### Properties

Shade Level	30%	40%	50%	60%	70%
Energy Savings	N/A	15%	20%	40%	45%
Direct Light Transmission	70%	55%	50%	40%	30%
Burst Strength (kg/cm <sup>2</sup> )	3.9	3.6	3.7	4.3	4.7
Weight (oz/sq. ft.)	1.97	1.86	2.01	2.53	2.57
Diffused Light Transmission	72%	75%	65%	55%	45%





## Green-Tek Knit Shade Fabrics (Shade-Rite)

Green-Tek offers a full range of high-quality knitted shade cloth for a full range of DIY and architectural applications. Shade-Rite from Green-Tek is made from special knitted tapes that have UV resistant additives giving the net durability and longevity. Knitted shade cloth is resistant to agrochemicals.

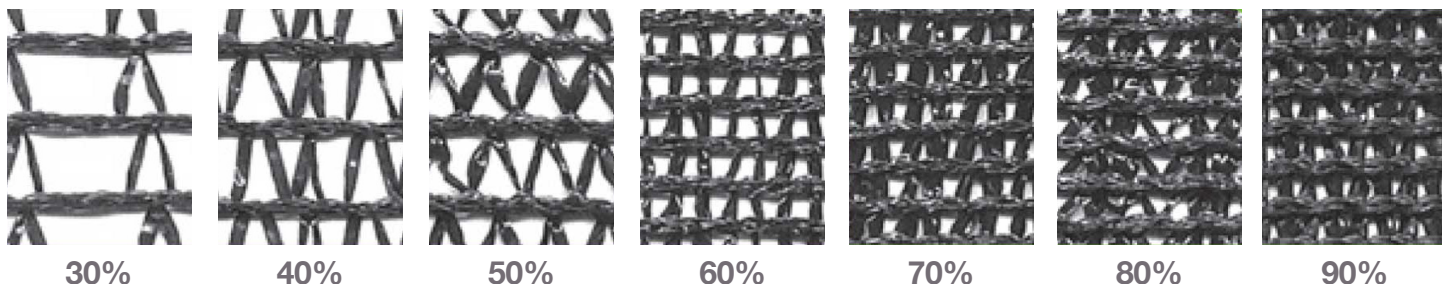
Green-Tek offers a full range of colors, cut to size, with tapes and grommets. Shade-Rite is the industry's choice in quality knitted shade cloth for greenhouses, nurseries and other growers. The lightweight material is made of UV resistant, high-density polyethylene that resists rips, tears and fraying. This lightweight cloth is 20-25% lighter than woven shade cloth with an open lockstitch design to reduce wind speed and heat buildup.



### Applications:

- Greenhouse Shade
- Shade Structures
- Shade Sails
- Playgrounds and Baseball Diamonds
- Swimming Pool Shade
- Pergolas
- Garden Balconies
- Permanent and Mobile shade structures
- Truck Tarps, Car Parks, etc.

### Black Knit Percentages Available



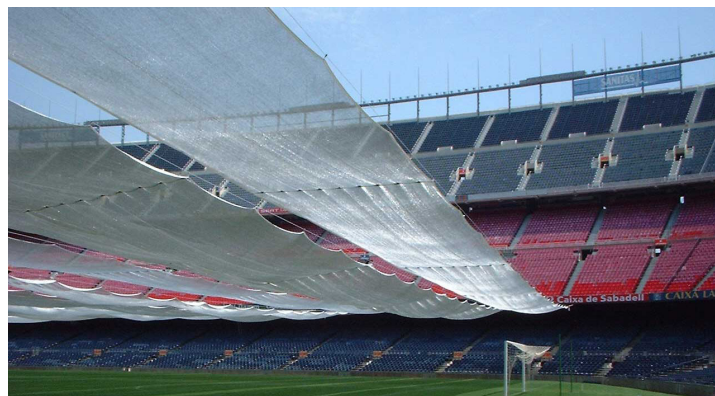
- Better ventilation and water permeable (open lockstitch design reduces wind speed and heat buildup in structure.)
- Lightweight and easy to install (20-25% lighter than woven shade cloth with dramatically more strength. Can be cut on site and will not unravel.)
- UV protection (UV resistant, high density polyethylene.)
- Wide widths (Available up to 34 feet depending on color/density.)
- Chemical resistant (Resists most horticultural chemicals, sprays and detergents.)
- Reduce soil moisture loss (Less evaporation.)
- Tough lockstitch knitted construction (Resists rips, tears and fraying. Shade levels remain constant during product life.)
- Cost effective (No edge taping and minimal sewing required thanks to knitted lockstitch.)

### Colors Available:

- Black
- Aluminet (aluminized)
- Forest Green
- Merlot
- Miller Blue
- Red
- Decorative Brown
- Smoke Blue
- Violet
- White

### Stock Sizes:

- 12x100
- Black: 30%, 50%, 70%, 80%
- 12x100
- Green: 70%





# Green-Tek Optinet 50

## Dual Thrip Control Optimizing Airflow While Blocking Pests and Thrips

OptiNet is a sophisticated new-generation anti-insect net that integrates physical and optical protection.

This innovative net dramatically reduces the number of pests entering the crop environment, especially thrips and also whitefly and leafminer. The net contains optical additives (non-toxic) that blind and repel the insects before they reach the net. Four-year trials conducted at the Besor experimental station in conjunction with the Volcani Institute of the Agricultural Research Organization demonstrated that the thrips population under 40- and 50-mesh OptiNet is eight times lower than under the standard 50-mesh nets. UV Protection for 5 Years.

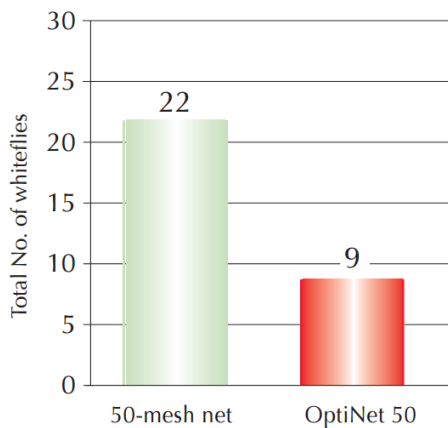
This is the only net that provides a solution for the problem of thrips while maintaining an adequate air flow. The optical properties of the net are not reduced over the years and are maintained throughout the nets' life cycle.

OptiNet is a patent-protected product.

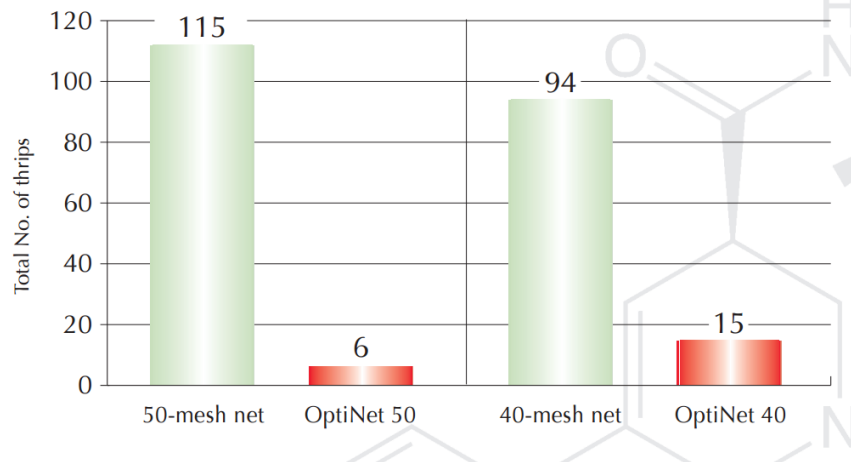
Product	Hole Size	Optical Protection
OptiNet 50	0.78 x 0.25 mm	YES



Number of Whiteflies on Tomato Crops



Number of Thrips on Tomato Crops







## Green-Tek Anti-Insect Nets

### Why use anti-insect nets?

There is a growing awareness of the severe damage caused by toxic pesticides to the environment and public health. Consumers are no longer prepared to put pesticide treated agricultural produce on their tables. This trend of reduced use of toxic materials will grow together with the legislation of new environment protection laws. Pests cause immense damage to the yield by feeding on or sucking the plant, depositing specks on the crop, and spreading disease. Insects also develop resistance to chemical pesticides, resulting in a significant reduction in the efficiency of these materials.

### How do the nets work?

There is a growing use of anti-insect nets as an important IPM (Integrated Pest Management) tool. These nets block the entry of pests into the crop environment, thus reducing the need to apply pesticides. The nets are commonly used to protect vegetable, herbs, orchard and flower crops and are used for protection in the following structures:

- Nethouses Lightweight frames with poles and cables that support the net.
- Greenhouses Air vents are covered with nets, or all the greenhouse walls are made of nets.
- Walk-in tunnels Completely covered with net, or covered with net and PE sheets.

In today's competitive market there is a growing awareness of the severe damage caused to agricultural produce by pests. As a result, production in protected structures is becoming increasingly important. Green-Tek / Polysack has designed and produced a range of protective nets to block the entry of pests into the crop environment and to significantly reduce the use of pesticides.

- Our highly qualified engineers, researchers and agronomists ensure cost-effective solutions to the most challenging climatic conditions.
- Product support and on-site training are provided by our professional field teams.
- Courses and seminars are held in various languages for growers, consultants and agents from all over the world.
- Polysack's new technologies are implemented by skilled professionals and are supported by stringent quality-control and engineering systems.
- The company's quality assurance policy focuses on the supply of quality products to its customers - for long-term use under harsh and diverse field conditions.
- All the company's activities are conducted under ISO 9001 and IQNet standards.
- All Green-Tek / Polysack products are environmentally friendly.

**Anti-insect nets block the penetration of insects and are differentiated by hole size** (mesh = number of holes per inch). The type of net (mesh size) is selected according to the insect that is prevalent in the area. Call American Clay for custom sizing. All are UV Protected for 5 Years.

**17-mesh net** For protection against fruit flies (Mediterranean fruit fly and fig fruit fly), grape moth and Pomegranate fruit butterfly in orchards and vineyards. This net is also used for protection against climatic elements such as hail, wind and excess solar radiation.

**25-mesh net** For protection against Mediterranean fruit fly in pepper.

**40-mesh net** For partial blocking of whiteflies where climatic conditions do not allow the use of 50 mesh nets.

**50-mesh net** For blocking whiteflies, aphids and leafminer. (Also available in the color grey.)

**75-mesh net** For blocking whiteflies, aphids and thrips in greenhouses with forced-air systems.

**Optinet 50** For integration of physical and optical protection against pests and thrips



Product	Hole Size
17-mesh net	1.20 x 1.20 mm
25-mesh net	0.72 x 0.97 mm
40-mesh net	0.79 x 0.40 mm
50-mesh net	0.78 x 0.25 mm
75-mesh net	0.18 x 0.25 mm
Optinet 50	0.78 x 0.25 mm



### Green-Tek Shark Bite

The Ultimate Gripper-Fastener for almost any netting, fabric, or film!

Thanks to its remarkable set of "SHARK TEETH", the Shark Bite™ will grab onto almost any fabric, netting, film or substrate, and NOT LET GO. Made of tough, UV resistant nylon, the Shark Bite™ is easy to use and will provide years of service in all types of weather! Shark Bites™ work great as a replacement for any fabric fastener, especially grommets, Velcro, snaps and ground staples. Instant repairs are easy with the Shark Bite™. Torn and missing grommets are no match. Keep a supply of Shark Bites™ on hand for your next emergency repair!



#### Instant Curtains



#### Double Hook for Net



#### Pin Connector for Net



### Nylon Grommet

Connects the net to rope, cable hooks or bungs.

Excellent quality and strength for years of use! Compare to cheaper versions made of softer cheaper plastics.

- Recommended distance between connectors: 1' – 1.5'.
- UV resistant.
- Multi-season



### Patch Tape (with liner)

Poly Patching Tape is a single coated, 6 mil, UV stabilized, clear, polyethylene film with a high tack acrylic adhesive. Heavy-duty tape designed for interior and exterior bonding applications and is great for repairing minor tears in polyethylene greenhouse film.

Sizes available:

- 2" X 48' (6 mil)
- 4" X 48' (6 mil)
- 6" X 48' (6 mil)
- 10" X 48' (6 mil)



### Batten Tape

- 2.75" wide Polypropylene tape in black or white color.
- Used to lash down Poly Film on the greenhouse

Sizes available:  
2.75" X 300'



### Tac Strip

- Flexible and easy to use vinyl strips 3/4 in. wide and 1/32 in. thick.
- Great for holding down tarps over construction projects.

Sizes available:  
0.75" x 500'





In 1986, Total Energy Group founders Peter Stuyt and Bert Neeft settled in Carpinteria CA, a thriving community of greenhouse flower growers. Bringing Dutch greenhouse technology and expertise to the area, they started installing light deprivation and shade systems for growers looking to automate and save energy. Working with growers, greenhouse manufacturers and distributors, has driven flexibility and innovation.

### Light Deprivation Systems



**Complete black out provided by Total Energy Group's fully automated Light Deprivation Systems.**

You can expect our light deprivation systems to make your crop flower reliably, securing the steady production flow modern greenhouse operations want. Our systems can be engineered to fit a wide range of greenhouse types and styles.

### Shade Systems



**Sun protection and energy savings provided by Total Energy Group's fully automated Shade Systems**

During the day time our systems will protect your plants from receiving too much light and heat, creating a growing environment in which your crop will thrive. At night closing the system will save on nighttime heating costs by containing the heat underneath the shade cloth.



With a passion for quality textiles, the Svensson brand is built on a legacy that began in 1887. After four generations as a family run company, we continue to develop and manufacture textiles with outstanding design and function. Now more than ever, our unique experience and know-how is used to improve the natural habitat of both people and plants. This makes us who we are – and extremely proud.

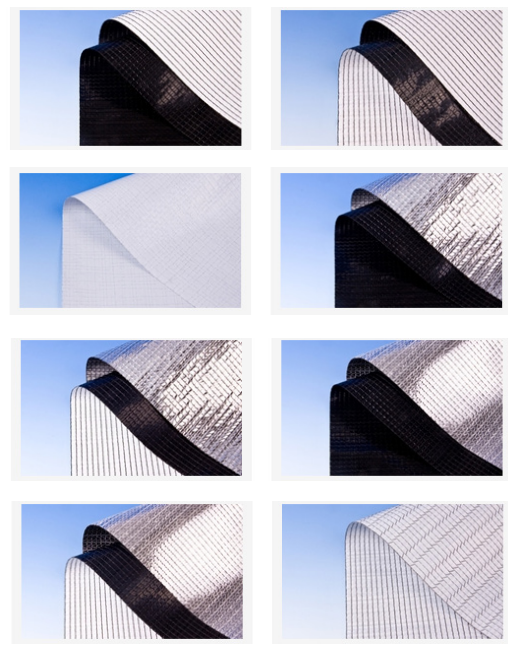
## Obscura

### Precious sleep for plants – or neighbours

Double layered Obscura screens provide the total blackout needed to manage plants that need a shorter day than daylight hours allow. Single layer Obscura is used with supplemental lighting for plants that need additional light. It keeps the light inside the greenhouse for maximum effect – and restricts the light from disturbing neighbours.

### Reasons to choose Obscura:

- Total control over day length for the most sensitive plants
- Effective cooling when reflective upper surface chosen
- High energy saving especially if one layer is aluminum
- Light emission control that satisfies neighbours and legislation
- Increased productivity when used with supplemental lighting
- More uniformity from supplemental lighting in the growing area
- Good moisture management



## Other Products

**Tempa**  
Dual thermal control

**Solaro**  
Ultimate solar protection

**Luxous**  
Energy saving with maximum light transmission

**Harmony**  
High grade light diffusion

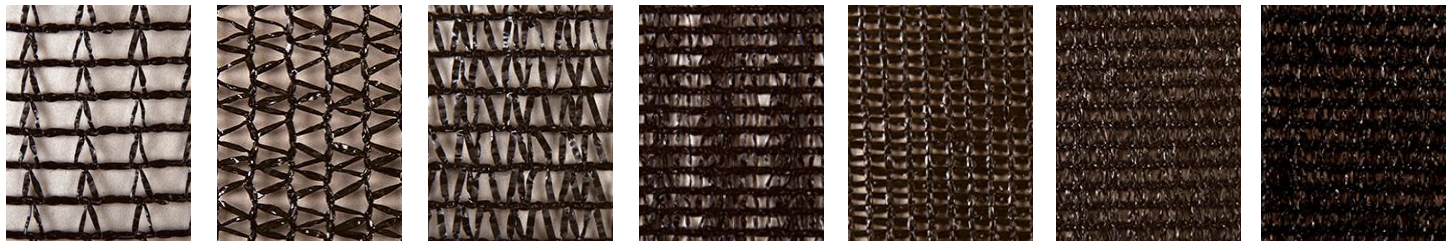


DeWitt operates out of a 350,000 square-foot facility which is centrally located in the heartland of America. By continually investing in state-of-the-art technology and equipment, DeWitt is able to consistently provide the highest quality products available in the lawn and garden industry. DeWitt products are used in more than 70% of the commercial landscaping done throughout the United States.

### DeWitt Custom Knitted Shade (Knitted & Woven)

The professionals on DeWitt's sewing production team can customize panels to any percentage of shade. We use #4 brass grommets and 2 3/4 " reinforcement tape. The taped edges are double stitched for extra holding power. Please call for custom quotes and lead times.

Made from 100% UV stabilized polyethylene with unique lock stitch construction that stretches and won't unravel if cut.



30%

40%

50%

60%

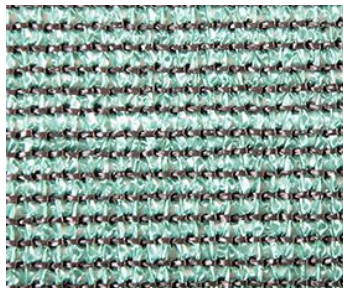
70%

80%

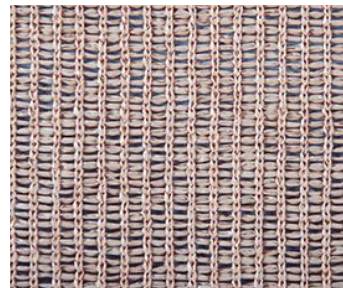
90%

### Other Colors

Dark Green



Ultra Tan



White



Steel Gray





### Carnea Plus 15x17 & 12.5x12.5

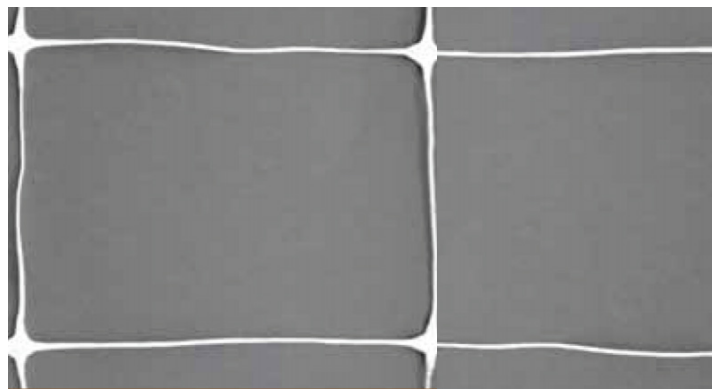
Support mesh, or trellis netting, helps you support your crops when they could bend or break. The Support Net Carnea Plus 1517 is specifically intended as a vertical application. It supports the plants that grow significantly in length and height. Application includes several vegetables, such as beans and peas. In addition, plants with soft fruit, such as raspberries and brambles, also benefit from the functioning of this netting. The rectangular meshes offer an optimal support.



Product	Mesh Size
Carnea Plus 15 x 17 cm	10 Mesh
Carnea Plus 15 x 17 cm	12 Mesh
Carnea Plus 12.5 x 12.5 cm	8 Mesh
Carnea Plus 12.5 x 12.5 cm	10 Mesh

#### Product characteristics:

- Vertical application with vegetable crops such as beans, peas, etc.
- Is not resistant to sulfur, chlorine, bromine and iron derivatives as well copper sulphates
- Tolerance in dimensions +/- 5%
- Can be used for several years
- Material: UV-stabilized Polypropylene, extruded
- Weight: approx. 9 gr / m<sup>2</sup>
- Color: White



### Scrap Wrap

- ScrapWrap is a high quality tight mesh stretchable woven polyethylene netting that will reduce your costs by needing only one wrap to be effective.
- ScrapWrap has enhanced UV protection to guard against deterioration, a benefit to you when your wrapped car bundles are delayed for shipment or as you wait for scrap prices to go up.
- ScrapWrap is available in highly visible safety orange or load hiding black.
- Also a very inexpensive option for anyone looking for a seasonal shade product (1 year UV) at less than \$0.04 per square foot.

