



GLOBAL HORTICULTURAL  v.4
proudly serving for over 20 years



. INTRODUCTION .

Situated in the heart of the Niagara Region;
supplying growers across North America.

Our dedicated and knowledgeable staff have
over 30 years experience in the industry.
Horticultural challenges keep us fresh, innovative,
and a pleasure to collaborate with.

At Global, we carry a large variety of supplies,
stocking more than 6,000 products. We also
custom design and build irrigation, heating,
gutter, fertiliser, and tomato hook systems.

This catalogue presents an overview of our
available products through an 'evolution of
your greenhouse' theme. At Global we
support all stages of horticultural design.

Thank you for your interest in our catalogue.



Front cover photo: Terra Greenhouses in Waterdown, ON; photo courtesy Jenn Blom

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The Evolution of Your Greenhouse

one | The Greenhouse

... We carry a wide range of essential greenhouse supplies such as paints, pots, measuring equipment, spraying devices, ground covers and much, much more. Below is a sample of the many products available from our extensive stock.

three | Fertilisers

... We stock essential major and minor elements for successful plant growth as well as horticultural grade acids. We are proud to offer GrowVision®, our own line of water soluble fertilisers made in partnership with Plant Marvel®.

five | Crop Management

... From bamboo, clips, twine, and more, we stock hundreds of products to aid the growth of plants and supplemental tools for the growers themselves!

seven | Packaging & Distribution

... The final stage of your product. Customise with sleeves, plant care tags, elastic bundling, or even a full-scale sales concept. Ethylene filters are available to keep flowers or produce crisp and fresh.

two | Growing Medium

... You have built your greenhouse and furnished it with equipment and supplies but what will you grow your crop in? We offer Sri Lankan cocos, Fafard germination and soil mixes, rockwool, perlite, and vermiculite.

four | Onsite Manufacturing

... Got a project? We can help! Whether you need assistance with planning, installation or just making new additions to an existing system, our team can help you design a customized system that fits the specific needs of your greenhouse.

six | Integrated Pest Management

... IPM has become a known acronym in modern horticultural practice. We carry high quality biological control products with many IPM supplements for your greenhouse needs.



COURTESY JENN BLOM

Ground Covers

Floor Poly

- 3 and 4 mill (1/1000") white opaque
- UV treated to last for 2 years

2' x 2000'	22' x 100'	4' x 330'
24' x 110'	22' x 125'	18' x 100'
24' x 100'	18' x 330'	16' x 100'
24' x 125'	20' x 150'	24' x 145'
22' x 120'	20' x 120'	

B/W, Propagation, and Clear Plastic

For all types of applications; available in a variety of sizes and thicknesses. Non-perforated.

Woven Groundcover

- Durable and long lasting, stronger than other covers on the market.
- Weighing 90 - 130 grams per m².
- Available in white or black. Lined for easier crop dispersal. Custom sizes on request.

1.05m x 100m	1.30m x 100m	1.65m x 100m
2.00m x 100m	4.20m x 100m	5.25m x 100m
2.00m x 100m	3.30m x 100m	

Perforated Plastic

Black, with small perforated holes for slow and steady drainage.

- Widths (m): 1.20, 2.00, 2.10, 2.40, & 2.80
- Lengths (m): 100, 250, 300, or 500

Capillary Matting

Made of synthetic fibres, wool, cotton and viscose. A great addition to bench or floor watering. Excellent tool for water conservation. Simply place matting under perforated plastic to retain drained water. Bottom stays wet longer, which may decrease amount of watering required.

- Widths (m): 1.25, 1.60, 1.85, 2.00, 2.10, 2.40
- Lengths (m): 40

Frost Cloth / Germination Cloth

Thin, multipurpose woolly cloth. Translucent enough to allow water and light to pass. Used for germination of seedlings, frost protection, aviary protection for outdoor crops, and as a filter for large debris at the end of flood benches.

- Widths (m): 1.6, 3.2, 4, 6.35, 8.5, 10.5, 12.75, 16
- Lengths (m): 100 or 250

Roto Steam Covers

Used for flower bed sterilization. Heavy plastic and durable.

- Thickness: 150µm (mu)
- Colour: blue
- Widths (m): 2.4, 3.8, 4.8, 7.2, 9.5, 10.5

Pots

Clay Pots

We stock many sizes of clay pots, in both plain and specialty design.

Available sizes include (radius): 10cm, 11cm, 13cm, 17cm, 20cm, larger sizes on request.

Plastic Pots

We have a diverse set of plastic pots for every occasion. We carry:

- round and square pots
- containers
- hanging baskets
- printed, orchid and net pots
- transport and cultivation trays
- young plant trays

Transparent Pots

Sizes start at 6cm and go up to 15cm.

Gerbera Pots

We offer a variety of european sizes. Information for these sizes available upon request.

Seeds

We carry the following seeds:

- tomato seeds
- mini cucumber seeds
- English cucumber seeds
- lettuce seeds
- pepper seeds

Please consult us for proper timing of seeding since dates will vary between regions. Other seeds upon request.

PVC irrigation and supplies

We carry an extensive line of PVC fittings, pipes, and accessories with sizes available in metric and imperial. The items below are a small sample of what we have to offer for PVC irrigation solutions. For specific items, contact us or visit our warehouse.





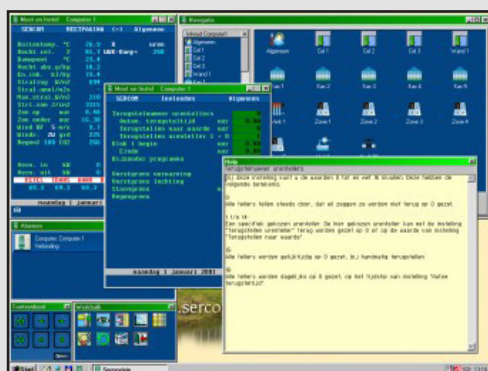
Sercom Regeltechnik™ manufactures electronics and computers for automation control in the horticultural industry. The program runs from simple level switches to advanced process computers. Since 1984, Sercom has supplied thousands of process computers, which are functioning to the satisfaction of its users.

Global Horticultural Services:

- Full installation services and technical support for climate computers and controllers

Other Sercom™ Products

- Sercom CO/NO safety devices
- LCD operating unit
- Humidity/Temperature measuring unit
- EC & pH converters



SercoVision™

SercoVision™ is the operating and registration program for the SERCOM Process Computer, and runs under Windows. The program provides a clear and comprehensive insight into the control processes in your business. Because the program operates according to the Windows standard, it's easy to learn.

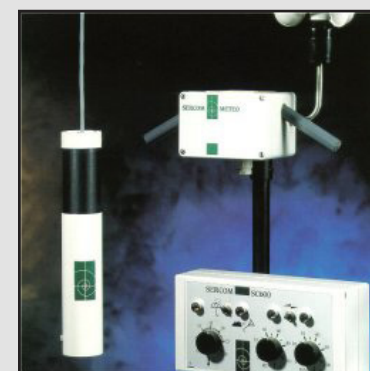
The operating structure ties in seamlessly with existing PC programs or monitor controls.

Operating with SercoVision™ is the same as with the business' other operating units. With the use of the mouse and the large monitor, far more possibilities are available such as changing the settings, viewing graphs, etc. Instead of running the control system under windows we also can provide a display.

SC600 Air controller

For the small grower, the SC600 controls the greenhouse climate by providing fully automatic adjustment of the ventilating windows for a single zone. The SC600's regular adjusting knobs create a regulated environment combined with optimum user friendliness. In addition, the SC600 features a microcomputer using the most advanced technology. The SC600 thus combines simplicity of traditional electronics with the flexibility of modern electronics. It will also control your heating with a pre-night feature.

The meteorological station features a rain indicator which, in rainy weather, guarantees that the



windward side automatically closes and that the side sheltered from the wind remains open to let the water drain off.





Measuring Devices

Elmeco EC & pH equipment and buffer solutions

Longevity and durability are the reasons we carry Elmeco. These devices are very accurate and easy to calibrate. We carry high and low pressure probes, 4.0 and 7.0 buffer solutions for pH and EC, and small pH test strips.

Scales

- Easy to read LCD display.
- Quick switch between Imperial and Metric readings.
- Stainless steel drip-proof models available.
- Available in the following sizes: 500 g, 1 kg, 2kg, 5 kg, 10 kg, 25 kg, 60 kg and up.

Measuring Cups

- Clear and durable. Short and long varieties available.
- Available in the following sizes: 50mL, 100mL, 250mL, 500mL, 1L, 2L, 3L, 5L.
- Extra lines on cup for accurate readings.

Thermometers

- Soil thermometers, min/max thermometers, and hand-held metres

Spraying Equipment



Enbar Low Volume Mist (LVM) Systems plus Maintenance[†]

Pictured right. The success of plant protection depends on various factors: substance, dosage, and the application technique to ensure protection is distributed thoroughly the greenhouse crop. Offers optimum distribution and robust longevity in regular greenhouse use. Coverage for +/- 30,000 ft² with enough horizontal airflow (HAF): 1.75 times per hour with 2.2 times being optimal.

- Equipable with a time control unit that controls running and spraying time.
- Connection to a computer system is possible.
- Units can be permanently mounted on a flower trolley for maximum mobility.
- Requires compressed air.

[†] We offer maintenance service for Enbar products.

Lime Sprayers

For the application of lime or other sprayable liquids in an easy to handle tube. Can also be used for small application of whitewash. For Whitewash, see page 10.

Spray Booms

We also *design* spray booms. See Onsite Manufacturing, pp. 16-7. For more info on the products we carry please contact us.





Based in New Zealand, Bluelab® has been a reliable manufacturer in measuring equipment for the last 30 years for home and commercial applications.

Bluelab® Soil pH Meter

- o Measures the pH level of soil, media, or substrates for robust commercial applications.

The pH strongly influences the availability of nutrients and the presence of micro-organisms and plants in the soil media. Certain plants require a particular pH range to enable the required nutrients to be consistently available to the plant. If the solution is too acidic or too alkaline it can cause “lock up” - a situation which restricts certain elements essential for growth from being absorbed by the root structure. Deficiencies reduce plant health and performance and can lead to crop failure.



Bluelab Soil pH Probe

This non-refillable soil pH probe is used to measure the pH levels of soil or media of cropping, pasture, containerised plants, home gardens, propagation culture, and so on.



Bluelab pH Probe

Used to measure the pH of a solution. Easy to clean because of its bullet shaped glass bulb. Fully waterproof and less fragile than all-glass electrodes because of its tough polypropylene barrel.



Bluelab Truncheon® Nutrient Meter

Know the strength of the solution before feeding your plants *and* while they are growing. High quality, waterproof, no calibration required, readable blue LEDs, and no on/off buttons.



Bluelab pH Pen and EC Pen

A compact, quick, and handy way to manage the success of your crops to ensure maximum uptake of nutrients. A convenient and accurate system for ensuring optimum plant growth by measuring pH.



Bluelab Combo Meter™

A conductivity, pH, and temperature meter. It comes with the Bluelab pH Probe and Bluelab Conductivity/Temperature Probe, which are simply placed into the solution and the selected reading is displayed on screen. Portable and does not require a power supply to operate. Calibration is at the push of a button.

Also available is the Guardian™ in low pressure units or high pressure units available for permanent installation in feed line.



Hermadix Paint Supplies

Paracote (black)

Elastic, water-tight black coating for concrete and metal. Ideal for protecting concrete from water, acids, and dampness. Paste contains asphalt-bitumen strengthener.

- 1L covers approx. 1 - 1½ m²



Gutter Coating (black)

Protection of gutters (incl. galvanized), wood, and iron posts. Painting paste based on asphalt-bitumen and polymers. Seals small leaks, brush on application.

- 1L covers 4 - 8 m² or +/- 20 metres of greenhouse guttering

Quick Coating (black)

Dries quickly: +/- 20 minutes at 20°C. Excellent and long lasting protection of metals.

- Apply by brush or spray onto dust-free and dry surfaces
- 1L covers +/- 6 m² or 20 metres of greenhouse guttering

Hermopal (white or grey)

Anti-corrosive for steel constructions and heating pipes. Suitable for all iron work; apply to heating pipes when pipes are hand warm. Quick dry. Hardens thoroughly and gives a soft gloss, anti-rust cover.

- Apply with roller or painting mitten
- 1L covers +/- 10 m² or 70 m of heating pipes (51 mm diameter)

Steam pipe Coating (red-brown, white)

Dries +/- 1 hr at 20°C. Anti-corrosive for steel.

- Apply with brush, spray or roll-on
- 1L covers approx. 10 m²

Isopal, Aluminum paint, Hermopox (plain, aqua and aqua prime), and Topcoat also available.

Shading Supplies and Systems

Hermadix Shading

Hermadix Q4-White and DPF-Black are adjustable screening agents. Depending on the dilution ratio, one application of either is sufficient per season. These agents can be applied manually or mechanically and can be removed with Removit with a few rain showers.

Hermadix Q4 White diffuses light

Hermadix DPF Black provides a maximum degree of shading and maximum heat reduction.

Hermadix Removit for removal of shading. After allowing to soak for several hours, solution may be sprayed off. A few rainfalls will also remove solution. Please ask for dosage rates.

Temperzone Whitewash

A screening agent for glass and poly houses. Powder form sold in 25kg bags of short-term (brown), medium-term (blue), and long term (green) varieties. Liquid form sold in 20L pails and is preferred for long term applications.

Mechanical Sprayers

(Right) For the application of screening agents and/or chemicals.



Curtain system

(Left) Quotes available upon request.

Low NOx CO2 hot air heaters

A side effect of gas burners is the production of nitrogen oxide. Unfortunately, excess of nitrogen oxides inhibits crop growth. Therefore, the Low NOx burner has been specially designed to minimise this harmful discharge by more than 85%. Low noise level. Other Holland Heater products include:

- Atmospheric CO2 hot air heaters
- Modulating hot air heaters
- Direct fired hot air heaters
- Direct fired air heaters



Nivola Sulphur evaporators

An environmentally-friendly answer to mildew. The Nivola sulphur evaporator evaporates the right amount of sulphur safely, while keeping energy consumption to a minimum. The intentionally-designed chimney effect guarantees an optimum distribution of the sulphur in a greenhouse setting. These two elements, the amount of sulphur and its distribution, are what controls mildew most effectively.

The Nivola cap, reduces sulphur deposits on screens or glass over the sulphur evaporator. The pendant raises the tilting point of the sulphur evaporator and contributes greatly to the stability of the Nivola sulphur evaporator.

Hand cuc wrapper

Holds up to 18" cuc wrap. A one roll basic unit. The hot plate measures 6 x 15 inches and has tension adjustments for film and maximum usage. Each unit is equipped with extra large rubber feet to prevent sliding during use.



Generators and Water Pumps

We offer Mitsubishi generators ranging from 1000 to 6700 watts. These generators are air cooled, gas engines with an inclined cyclinder. They have a large fuel capacity for extended operation. Along with generators we also carry Mitsubishi waterpumps. These are 4.0 or 6.0HP centrifugal and self-priming pumps that weigh less than 32 kg. The maximum capacity of these pumps are 164 GPM and 304 GPM for a 2- and 3-inch waterpump respectively.

Flower Carts

The standard Danish flower cart comes with 3 shelves. Solid nylon or pneumatic wheels and additional shelves are available upon request.

Electric and Hydraulic picking carts & Scissors

Coming in two modes, pipe rail and pneumatic, these carts are a handy mode of transport in the greenhouse. These carts move forward and backwards with the turn of a controller. Speed control is also available.

The scissor units to these carts are either manual or hydraulic with easy foot control. A fully chargeable battery is equipped with an available charger (sold separately). Contact us on quotes for new and used units. We also offer repair services.

Cocos Products

Coco Agro PVT has been in the forefront of the coco medium industry. It is through rigorous quality control methods at every stage of production that ensure the product distributed meets all international standards.

Benefits to coco coir:

- ◇ Coco can hold up to eight times its weight in water and release it over a period of time (less watering of crops.)
- ◇ Has an ideal pH range: 6 – 6.7
- ◇ Provides excellent aeration to roots
- ◇ Coco chips, coco crushed and coco fibre can be added to improve the medium
- ◇ 100% organic and truly environmentally friendly; disposing of the coco medium after usage will not harm the soil composition as it is an organic matter.

Coco Blocks

Made of compressed coco peat and coir fibre. Individually wrapped.

Coco Peat Bales

Bales are less compressed, making them easier to loosen up. Can be used for multiple applications and made with different mixtures by increasing or decreasing the percentage of coir fibre in the mix.

Gerbera Disks

Conveniently compressed into a disk form; reduces required labour in filling gerbera pots. Available in 3 types and 4 varieties:

4G (3.5 – 4 L disk)

5G (4.5 – 5 L disk)

6G (5.5 – 6 L disk)

"Standard" and "Superior" Washed Material

"Standard" and "Superior" Buffered Material

Coco Grow Bags

Standard (ST) – GREEN grow bags

Designed to hold higher volumes of water and consist of a mixture of coco peat and coco fibre. Mixes available for cucumber, roses, and strawberries.

NB: Green bags can be used for tomatoes but we recommend SP Red to sustain a higher yield.

Superior (SP) – RED grow bags

Designed to hold lesser volumes of water and have more air porosity. Consists of a special mixture of coco peat and coco crushed materials. Mixes available for tomatoes and bell peppers.

Please contact us for further information.



Fafard® Peatmoss

A known name in peat moss, Fafard® offers products with superior water retention capacity as well as products with excellent drainage. We also carry certified 100% organic versions of soilless mixes that meet National Organic Program (NOP) guidelines and do not contain any synthetic materials such as pesticides, chemicals, fertilizers or water conditioners.

We carry the following Fafard products:

- ◇ Peatmoss
- ◇ Peatmoss P10
- ◇ Germination Mix
- ◇ Organic

Perlite

Perlite is a volcanic rock that expands to about 13 times its original volume when it is heated in its final phase. The porous texture is excellent for aeration and drainage as well as making moisture and nutrients readily available to the plants. Bags are available in coarse and medium grades in 100 L bags.

Vermiculite

The name vermiculite is given to a group of naturally occurring minerals, similar to mica, that are formed by weathering or hydrothermal alteration. Vermiculite is an advantageous soilless media for its retention of water, plant food and moisture. Bags are available in coarse and medium grades in 100 L bags.

Rockwool

Plugs

Plugs are available in 10mm or 15mm radius. Kiem plugs with trays and 2 metre slabs are also available.



Blocks

4" blocks (216 / case, 2,160 / pallet)
4" x 6" blocks with 2 holes (144 / case, 1,440 / pallet)



GrowVision® water-solubles

Formula tested and unsurpassed quality, GrowVision® is our line of water-soluble fertilisers that have provided our growers with prime crop responses and reliable results. Every GrowVision® formula comes with a guaranteed analysis of trace elements, ensuring the exact nutrients your crop requires for profitable growth. The formulas offer a total nutrient feed; with guaranteed amounts, *where applicable*, of the following chelated elements: sulphur, iron, zinc, boron, manganese, calcium, copper, molybdenum and magnesium.

Listed below is a sample of our more popular mixes as well as mixes that are scientifically designed for tackling specific problems (eg. pH of growing media and water, imbalances of minor elements). Knowing what is in your water and growing media is the first step in choosing the right fertiliser.

Contact us for information on our water and media testing services.

Major greenhouse-grade fertilisers

Calcium nitrate	Potassium nitrate
Epsom salt	Magnesium nitrate
Mono potassium phosphate	Ammonium nitrate
Mono ammonium phosphate	Potassium sulphate
Potassium chloride	Calcium chloride
Potassium bicarbonate	Urea
Limestone	

Acidification*

Hydrogen Peroxide 35%
Phosphoric Acid
Sulphuric Acid
Nitric Acid
Citric Acid

Minor greenhouse-grade fertilisers

Iron chelate 13% EDTA	Iron chelate 11% DTPA
Iron 6% Liquid DTPA	Iron 3% Liquid DTPA
Iron 7% DTPA	Iron 6% EDDHA
Iron 9% HBED	Iron 9% IDHA
Manganese chelate	Borax 20.5%
Manganese sulphate 32%	Borax 11%
Copper sulphate 14%	
Zinc sulphate 35.5%	
Aluminum sulphate	
Sodium molybdate	
Zinc chelate 14%	
Copper chelate	



MARCEL BLOM AT SUNRISE GREENHOUSES.
PHOTO COURTESY ROB BLOM.

Most common GrowVision® list†

6-30-30 Blossom Set	17-5-17 CalMag Spec	20-8-20 Forestry
5-40-17 Blossom Set	17-17-17 Geranium	21-5-20 All Purpose
10-20-30 Potash Spe	18-6-18 MagIron Sp	20-20-20 no Dye
10-30-20 Blossom Bo	18-3-18 Potted Plan	13-2-13 no Dye
12-31-14 Flowering	20-5-20 CalMag GP	20-10-20 no Dye
12-45-10 SuperStart	20-5-30 HiNitrates S	21-7-7
13-2-13 Plug Specia	20-10-20 Plus	13-00-44 Hi-K Sp
14-0-14 Plug Specia	20-20-20 General P	3-15-26
15-0-15 HiCalSpecia	20-7-7 Acid Special	20-20-20 General P
15-3-18 HiCalSpecia	24-8-16 Tropical F	9-15-30
15-3-20 CalMagSpeci	25-0-25 No Phosphate	20-00-20 General P
15-5-15 CalMag Spec	27-7-20 GP	11-8-27 Cyclamen F
15-5-25 Poinsettia	28-8-18 Hi Acid	12-7-19 General P
15-5-30 K-Mag	30-10-10 Orchid SP	16-3-16 Cal-Mag Sp
15-10-30 pot Mum	20-10-20 Gen. Purp.	

* we also sell acid pumps

† other flavours of custom blends are available

MSDS sheets available on our website: www.globalhort.com/resources

GrowVision® EC charts

This chart has been developed as a reference to verify the accuracy of fertiliser injectors. The chart is designed to be used in the following manner:

1. Determine the conductivity of your clear irrigation water.
2. Determine the conductivity of your fertiliser solution after it has been proportioned (at the emitter as it is applied to the plants).
3. Subtract the value of 1. (clear water) from 2. (fertilizer solution).
4. Compare this answer with the values on the chart to determine the parts per million of nitrogen being injected.

An Example (0.82)

If a reading of irrigation water has a value of 0.2 mmhos and a value of 1.0 mmhos is obtained from the fertiliser-injected water using 20-20-20, the corrected value would be $1.0 - 0.2 = 0.80$. A look at the chart indicates a value of .82 for 20-20-20 being injected at 200 PPM. With an allowance of + or - 10% this is well within range.

To convert millimhos (mmhos) to micromhos (µmhos) multiply by 1000.

The values on this chart were obtained under laboratory conditions using distilled water. The values obtained by the grower under field conditions could therefore vary slightly (+10%) from values listed here.

This chart is to be used with GrowVision® formulations. Other brands may be composed of different raw materials which would give different values, even though they are the same analysis.

Formulations and Conductivity in Millimhos (mmhos)

PPM NITROGEN CONCENTRATION

FORMULA	50	100	150	200	300	400	500
4-25-35	1.30	2.60	3.90	5.20	7.80	10.40	13.00
5-40-17	1.43	2.85	4.28	5.70	8.55	11.40	14.25
7-40-17	0.60	1.20	1.80	2.40	3.60	4.80	6.00
10-20-30	0.50	0.99	1.50	1.99	2.99	3.98	4.79
10-30-20	0.48	0.96	1.44	1.92	2.88	3.84	4.95
12-4-12	0.17	0.35	1.07	1.43	2.14	2.86	3.58
12-31-14	0.42	0.84	1.25	1.67	2.51	3.34	4.18
12-45-10	0.36	0.71	1.07	1.42	2.13	2.84	3.55
13-0-44	0.48	0.95	1.41	1.88	2.83	3.77	4.73
13-2-13	0.37	0.75	1.12	1.50	2.25	3.00	3.75
14-0-14	0.37	0.75	1.12	1.50	2.25	3.00	3.75
14-3-20	0.35	0.71	1.06	1.42	2.12	2.83	3.55
15-0-15	0.34	0.69	1.03	1.38	2.06	2.75	3.44
15-0-30	0.36	0.71	1.07	1.49	2.14	2.85	3.55
15-3-18	0.35	0.71	1.06	1.42	2.12	2.83	3.54
15-3-20	0.35	0.70	1.05	1.40	2.10	2.80	3.50
15-5-15	0.36	0.73	1.09	1.45	2.18	2.90	3.63
15-5-25	0.38	0.76	1.14	1.52	2.28	3.04	3.80
15-5-30	0.37	0.74	1.11	1.47	2.21	2.95	3.68
15-10-30	0.35	0.71	1.06	1.42	2.12	2.83	3.54
15-20-25	0.33	0.66	1.00	1.37	2.05	2.74	3.42
15-30-15	0.32	0.64	0.96	1.28	1.93	2.57	3.21
16-4-12	0.33	0.68	1.01	1.35	2.04	2.70	3.37
17-0-17	0.35	0.70	1.05	1.40	2.10	2.80	3.50
17-5-17	0.34	0.68	1.01	1.37	2.04	2.70	3.40
17-17-17	0.27	0.54	0.80	1.07	1.61	2.14	2.68
18-3-18	0.34	0.68	1.01	1.37	2.04	2.74	3.40
18-6-18	0.34	0.68	1.01	1.37	2.04	2.74	3.40
19-26-14	0.21	0.42	0.63	0.84	1.25	1.67	2.09
20-0-20	0.21	0.41	0.62	0.82	1.23	1.64	2.05
20-5-20	0.33	0.65	0.98	1.30	1.96	2.62	3.25
20-5-30	0.23	0.47	0.70	0.93	1.39	1.86	2.33
20-7-19	0.30	0.60	0.90	1.20	1.80	2.40	3.00
20-7-19	0.33	0.65	0.99	1.30	1.95	2.60	3.25
20-10-20	0.31	0.62	0.94	1.25	1.88	2.50	3.13
20-20-20	0.21	0.41	0.62	0.82	1.23	1.64	2.05
21-7-7 A	0.31	0.61	0.92	1.22	1.83	2.44	3.05
21-7-7 N	0.18	0.36	0.54	0.72	1.07	1.43	1.80
21-8-18	0.32	0.64	0.96	1.28	1.92	2.56	3.20
24-8-16	0.21	0.42	0.63	0.85	1.27	1.70	2.12
25-0-25	0.15	0.30	0.45	0.61	0.92	1.22	1.52
25-5-20	0.14	0.30	0.42	0.61	0.90	1.20	1.50
25-10-20	0.16	0.32	0.49	0.65	0.98	1.30	1.63
25-15-10	0.15	0.31	0.46	0.62	0.92	1.23	1.55
28-18-8	0.10	0.20	0.30	0.40	0.60	0.80	1.00
30-10-10	0.11	0.22	0.33	0.43	0.66	0.85	1.10

Computer Assisted Acidification and Optimized Crop Nutrition

Acidification

This web-based program is to assist commercial nursery and greenhouse growers with the acidification of their irrigation water and an optimized nutrition program. The acidification program is based on the bicarbonate level in the water and not the pH. Once you know the bicarbonate level of your irrigation water and the target value for the bicarbonate level, then the program will provide you with the amounts of acid to use to achieve the target value. It also provides you with an idea of how much nitrogen (for nitric acid), phosphorous (for phosphoric acid) or sulphur (for sulphuric acid) is added, when you acidify. For rockwool growers using a neutral fertiliser regimen, the target value is about 30 ppm or 0.5 mmol of bicarbonate/L. For growers who use an acid fertiliser and grow in soilless substrate, the target value can be set higher (1-2 mmol/L).

Comprehensive Nutrition Regimen

The second part of the program involves a more complete nutrition regimen as well, whereby all the macro- and micro-nutrients are considered in addition to the acidification. The program assumes the use of elemental 'greenhouse grade' fertilizers. This program is suitable for growers who either

Computer Assisted Acidification and Optimized Crop Nutrition

Part 1: Enter Irrigation Water Values and Acidification

Part 2: Enter Crop Target Values

Hide this message
You may enter or delete multiple crop target values below or upload a previously saved csv file. For the former, you must click on 'Save new Crop' after you've inputted values. To delete a crop, use the checkboxes and click 'Delete crop(s)'. Once a non-Water crop exists, a menu bar will appear in the blue box to the right. You may select your new crop to analyze and create a fertilisation program in Parts 3 and 4. If you choose to upload a previously-saved file, this will insert the data into the program where you may further add or delete new crops. You cannot change values of a previously saved crop unless you do so in a spreadsheet on your computer from a previously downloaded csv file. Be advised that this website does not keep the csv file, nor the data within it, on the server. Data from the csv file is extracted on the server, sent to the client machine, and discarded.

☐ No CSV file

	Values in mmol / L										Values in µmol / L									
Program	HCO ₃ ⁻	NO ₃ ⁻	NH ₄ ⁺	H ₂ PO ₄ ⁻	E ⁺	Ca ⁺⁺	Mg ⁺⁺	SO ₄ ⁻	Na ⁺	Cl ⁻	Si ⁻	Fe	Mn	Zn	Cu	B	Mo	Al		
Water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		

☐ Adding a Crop Target will update the blue menu automatically.
☐ There is no need to save or upload after each added crop program, unless you leave and return to this webpage.

Part 3: Nutrient Requirement Overview per selected Crop

Part 4: Calculate Fertilisers per Nutrient Requirement per selected Crop

Download

Upload
 No file chosen

No file currently selected

No file to choose Crop from

have a 2 tank system (A and B tank) or a multi-nutrient injector system with or without an acid / base injector system.

What the grower needs for this program are target values for all the nutrients for a particular crop. It also can incorporate the elements/nutrients which are present in the water source. Most labs can provide a complete analysis for the grower's water source. Moreover, you can calculate the costs of your nutrient solution.

Closing Remarks

This program is prepared with the best of intention for the commercial grower. *The final responsibility remains with the user.*

It's free! Please visit our website link for the calculator at <http://www.globalhort.com> or go directly to <http://www.flowerboy.ca>.

Irrigation Systems

Pre-Assembled Drip Lines

Drip irrigation systems assembled on-site and customized to the specification of your greenhouse. Choose from two main systems: French Capillary or Pressure Regulated/Compensated. All fittings and pipes are available and self-assembling is optional. Sizes include: PE16, PE20, PE25, and PE32.

1. French Capillary

This drip line system consists of polyethylene line (spaghetti) and spikes. The amount of water given to each individual plant is solely based upon the inside diameter of the spaghetti and pressure/length of the line. The spaghetti is available in 2-, 3-, 4- and 5-litre/h sizes.

2. Pressure Regulated/Compensated

Unlike the French Capillary system, Pressure Regulated/Compensated uses emitters to compensate for the loss of water pressure in the line. The emitters open (approx. at 3lbs/psi) evenly when the line is completely full. In comparison to the French system, this action allows longer feed lines and larger quantities of plants per valve station. These emitters determine the amount of water given to the plant. (eg. 2L, 3L, 4L, 8L, and 12L)

Misting Irrigation

Using PVC or aluminium piping, this overhead system allows for an even spray of water over plants. Pre-assembled or do-it-yourself.

Heating Systems

Contact us for a quote on custom boiler or pipe systems.

Metal Gutter Systems

Customised gutter systems are available using 0.6mm galvanized steel and

finished with a white coating of either Polysester (general purpose), Topcoat™ (ultra strong), or Platisol (heavy duty).

Advantages in Growing Conditions

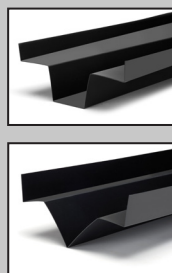
- Levelled slab foundation leads to uniform water distribution.
- Slab elevation from soil and better air circulation increases temperature response in slabs.
- An ideal slope with no loss of water and fertilizers generates greater vegetative/generative growth control in plants.
- No wet spots – less spread of diseases.
- Better air flow through crop.
- Ready for recirculation of the water.

Advantages in Labour Conditions

- Product hangs at picking height, creating an ergonomic environment for easier and faster harvesting
- No wet spots creating an unhygienic environment for workers
- Continuous lengths allows efficient installations and less maintenance for leakage reworking

Plastic Gutter Systems

- The V-gutter can be used as a discharge channel on soil and as a discharge channel underneath a growing rack system. For use underneath the growing rack system, we advise to use a minimum of 25 mm side wall folded inside to keep the gutter in his shape.
- The Bato Mega Gutter is the waterproof and ecological solution to collect and drainwater in the vegetable and flower cultivation. The installation of slaps and buckets over or on the side of the drainwater discharge channel is possible with this product.
- The drainplug is utilised with the drain gutters.



Customized Metal Products

Enjoy the benefit of lower cost and aluminium/galvanized wire product tailored to the needs of your greenhouse. Below is a sampling of our Global-made products.

Free-Fall Tomato Hooks

These specially designed hooks are excellent for supporting your tomato plants. An extra bend of metal is added to the hook to allow a pre-determined length of twine to immediately be ready from the wire to the ground – conveniently saving you set up time. Bare hooks also available.

Colour: blue, green, yellow, black, white.
Bare Hooks: 400 hooks/box
Free-fall: 500 hooks/box



Vine Supports

A great asset to protect your stems from breakage and disease, raising them off the ground. Choose from two different gauges of galvanized wire, supports can be manufactured to almost any size. Minimum width is 13".



Irrigation Hooks

Available in various lengths.

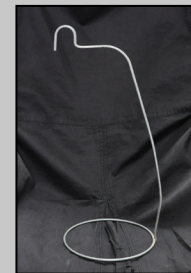
Manual Carts & Scissors

Standard carts are 5' length and standard scissor lifts rise to approximately 40".



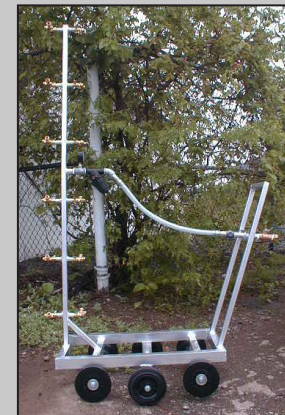
Plant Holders & Crop Wire Supports

Adaptive to varying sizes of pots; ring diameter and height are customizable upon request.



Spray Booms

Designed for pipe rail applications, these booms can be modified with pneumatic wheels. Lightweight and easy to manoeuvre. See also Spraying Equipment on page 8.



Stakes

Used to support young plants and top heavy flowers, bamboo stakes are available in green or natural and in a variety of sizes and thicknesses.

Standard Green		Standard Natural	
length (cm)	diameter (cm)	length (cm)	diameter (cm)
25	3.0 - 3.5	15	2.5
27.5	3.0 - 3.5	18	2.5
30	3.5 - 4.0	20	2.5
35	3.5 - 4.0	25	3.0 - 3.5
40	4.0 - 4.5	27.5	3.0 - 3.5
45	4.0 - 4.5	30	3.5 - 4.0
50	5.0 - 5.5	35	3.5 - 4.0
60	5.0 - 5.5	40	4.0 - 4.5
70	5.5 - 6.0	45	4.0 - 4.5
80	6.5 - 7.0	50	5.0 - 5.5
90	7.0 - 7.5	60	5.0 - 5.5
		70	5.5 - 6.0
		80	6.5 - 7.0
		90	7.0 - 7.5

Canes

Natural, sturdy support with sizes ranging from 3 feet to 17 feet with optional gauge. Discounted prices available on direct loads.

Arches

For an elegant presentation of climbing plants such as bougainvillea, stephanotis, ivy, honey suckle, etc.

height (cm)	width (cm)
30 (12")	15 (6")
45 (18")	15 (6")
60 (24")	15 (6")
75 (30")	15 (6")
90 (36")	15 (6")
120 (48")	15 (6")

Trellises

An alternative to a standard topiary or plain wood trellis. Hand crafted and available in a variety of sizes with 2 (S2), 3 (S3) and 4 (S4) horizontal sticks available. (Natural color only.)

	Top	Bottom	Height
S2	8	5	35
	8	5	45
	12	5	60
S3	28	12	60
	33	12	85
	40	12	110
	50	13	150
	50	23	180
S4	50	23	180
	18	5	35
	20	6	45
	26	8	63
	34	8	85



Bato clips

Tomato Clip Rings (15 mm, 22 mm, 25 mm)

For use in tomato, bell pepper and cucumber crops, this clip ring eliminates the need to turn plant stems along the twine and instead guides it along the stem.



Tophook (cucumber)

Give your branches and stems the support they need along horizontal crop wires. Tophook can guide several branches or stems and are supplemented with a UV stabilizer which allows for several years of use.



C-Hook and Double C-Hook (tomato)

Attach side shoots to the main stem easily while preventing breakage. Double C-Hooks provide twice the cluster support.



Grafting Clip – Standard (1.5 mm, 1.8 mm, 2.0 mm)

Suitable for a variety of plants and made of a flexible and soft material with excellent light density.



Grafting Clip – Special (1.2 mm)

An alternative to the Standard clip made of the same flexible and soft material.



Adjustable Labelclip (Ø5-10 mm, 10-16mm)

A great presentation tool for large care tags, this label clip will ensure your care tags remains in place during transit. Small clip suitable for stake diameter between 5-10 mm, large for stake between 10-16mm.



Labelclip XS Flex (labels)

This label clip is a quick way to affix labels to a bamboo stake. Labelclip XS Flex will fit most small stake diameters.



Labelclip Medium (labels)

Similar to Labelclip XS Flex, Labelclip Medium fits most medium stake diameters.



Paskal clips

J-Hook (tomato)

Prevents damage to the cluster stem with this hook. Its unique design ensures superior support.

Arch Truss Supports (tomato)

Gives cluster stems the support they needs during flowering. This flexible arch provides excellent grip to the stem and makes for quick installation.



COURTESY JENN BLOM

Tomato Clip Rings (23 mm)

For use in tomato, bell pepper and cucumber crops, this clip ring eliminates the need to turn plant stems along the twine and instead guides it along the stem.

For more products we carry refer to: www.paskal.biz

Other clips

Plant Support Rings

Keep top heavy plants from falling over due to wind or their own weight. Diametres include: 4", 5", 6", 7", 8", and 9".

Clip Rings or Pinch Clips (Green)

This clip ring opens easily to secure stem to support cane. Diametres include: 11mm, 13mm, 16mm, 20mm, 25mm, & 32mm.



Orchid Clips (Green)

Elegantly secure orchid stems to canes with this barrette style clip.

Net Supports and Accompanied Clips

Ask for details.

For more products we carry refer to: www.bato.nl/en/home

European Harvesting Tools

We carry a large selection of spades, pitchforks, dutch hoes, scythes, sickles, rakes, regular hoes, wooden handles (of varying lengths), and *miniature* spades, forks, and so on for work on your knees.

For more products we carry please contact us.

Poly Twine

UV Treated, 21,750 ft/roll, sold by the kilogram. Available in blue, black, green, yellow, white and brown.



Tomato Roller-Hook

Easy to use and made with heavy gauge wire, the Roller-Hook hangs on to your overhead wires with the help of two support loops. Below, a replaceable spool provides enough UV treated twine for three crops. Replacement spools are available (white only). Spools: 550 per box Wire Hooks: 550 per box

NOTE: For free-fall tomato hooks and vine supports, please refer to our Onsite Manufacturing section.

Jute twine

Biodegradable and sturdy, our three strand jute is easy to dispose of; just throw it away with the crop! 4,822 ft/roll.



Miscellaneous Supplies



Air Hose

Durable and flexible, handles up to 200 psi. 300 ft/roll. Sizes: 3/8", 1/2", 5/8", 3/4", 1"

Antibloc

Mineral designed for the solution of blocked irrigation lines due to calcium and iron deposits. Through systemic use, you can prevent these deposits from forming. Mixes right into your tank along with your fertigation. Sizes: 25L cans, 200L drums



Cherry Tomato Trays (Italia style)

250 gram containers

- lid: 2,600 per case
- bottom: 1,300 per case

500 gram containers

- lid: 1,400 per case
- bottom: 700 per case



Clippers

Felco Clipper Models #1 - #5
ARS 300L (long blade, straight)
ARS 300SS (short blade, straight)
ARS 310 (short blade, curved, blunt tip)
ARS 310D (short blade, curved, pointed tip)
ARS 120DX-T (rose clipper)
Rose clippers (cut and hold)



Co2 Hose

Contact us for specific sizing and customised punch holes. Standard sizes: 0.03mm thickness; 67mm (2 5/8") x 500m and 93mm (3 2/3") x 500m.

Crates

Hard plastic and very durable.
Colour: solid orange, solid black
Size: 50 x 40 x 21.5 cm

Miscellaneous Supplies

Cucumber Wrap

See page 11. Available for hand wrapping as well as automated wrap machines. Coded wrap also available. Sizes: 45 cm, 50 cm, 55 cm, 18" coded and non coded

Electrical Supplies

We carry a variety of industrial and greenhouse electrical components including:

- Wiring
- Voltage adapters
- Cable boxes
- Plugs and switches
- Transformers and relays
- Timers



Energy Saving Lamps

From black lighting to small growing lights, we carry a variety of lamps for many applications.

Flower Paper

Assorted patterns and colours, sold by package
Size: 60 x 80 cm sheets, 10 kg per package

High Pressure Sodium Lamps

Detailed information available upon request.

Hose Fittings

For air or spray hoses.



Knives for the commercial grower

- #360 1.75" regular
- #359 1.75" long handle
- #1406 2.25" curved

- #1711 2.25" curved s.s.
- #1395 2.5" straight blade
- #1397 3.25" straight blade
- #1716 3.25" serrated s.s.

Latex Gloves

Sizes: small, medium, large and XL

Packing (Carton) Tape

Tan or clear. Fits most standard tape guns.
48 and 36 rolls per case for tan and clear tape respectively.

(Hycron) Rose Gloves

Hard plastic-coated gloves.
Sizes: small, medium and large

Shrink Wrap

17 or 20 micron thickness. Durable thickness, ideal for wrapping skids. Sticky on one side.
Size: 45cm x 300m
Quantity: 6 per case

Strawberry Trays (Bato)

Suitable for growing young strawberry plants. The strawberry tray is stackable, nestable, and supports a maximum weight of 15kg. Sizes include: 9-, 10-, 16-, & 40-hole trays.
See pictures to the right.

Tape Guns

Hard plastic and easy to grip with tension dial.

(Max) Tapener & Accessories

Great tool for binding plants to stakes or to twine. Tapener will quickly bind staple to the tape simply by squeezing the handle. Comes in blue, green, red.

Tomato Dividers

Black or blue. 750 to a case.

Available sizes are:

- #14 #16 #18 #20 #22
- #25 #27 #28 #29 #30
- #32 #33 #35 #37 #38
- #39 #42 #45 #48 #52
- #56

Dimensions: 40 x 60 cm
(# determines how many tomatoes per insert)



Vibri Tomato Vibrator

12V battery operated.
Gentle vibration and long lasting quality.
Optional speed control, battery pouch, and charger available.



Wetcide 804

An effective disinfectant/sanitizer/fungicide/deodorizer with multiple applications. Use it on greenhouse floors, walkways, walls, ceilings, horticultural equipment and footbaths. Can also help to control mold and mildew on tile, wood, concrete and painted surfaces.
Size: 20L cans, 205L drums



6

Biological Control Overview

The growing use of beneficial insects in common greenhouse practice aims to control pests for a variety of crops and for these favourable reasons:

1. Provides an affordable and effective method of controlling pest population
2. Reduces chemical costs and time spent spraying
3. A primary element of Integrated Pest Management (IPM)
4. Improves public perception
5. Reduces the chance of developing pesticide resistance
6. May reduce health risks to workers
7. Environmentally friendly while improving yield and quality
8. Alternative marketing possibilities

Chart

On the right is our chart for a clear understanding on IPM practice using beneficial insects. One star (*) indicates that there will be *some* effect in gaining control of your pest problem, while three stars (***) signifies an *excellent* chance of gaining control over the pests in your crops.

Pest Overview

Aphids	p. 25
Caterpillars	p. 25
Fungus Gnats	p. 26
Leafminers	p. 26
Mealybugs	p. 27
Mites	pp. 27-8
Shore Flies	p. 28
Thrips	p. 29
Vine Weevils	p. 29
Whiteflies	p. 30

	Aphids	Caterpillars	Fungus Gnats	Leafminers	Mealybugs	Shore Flies	Spider Mites	Thrips	Vine Weevils	Whiteflies	Eats Pollen
ADALIA BIPUNCTATA	***										
AMBLYEIUS ANDERSONI						***	*				✓
AMBLYEIUS CALIFORNICUS						***					✓
AMBLYEIUS CUCUMERIS						*	***				✓
AMBLYEIUS DEGENERANS							***				✓
AMBLYEIUS FALLACIS						***					✓
AMBLYDROMALUS LIMONICUS							***		**		✓
AMBLYEIUS SWIRSKII						*	***		***		✓
APHELINUS ABDOMINALIS	***										
APHIDIUS COLEMANI	***										
APHIDIUS ERVI	***										
APHIDOLETES APHIDIMYZA	***										
ATHETA CORIARIA		***			***		**				
CHRYSOPELTA CARNEA	***			**							
CRYPTOLAEMUS MONTROUZIERI			***								
DACNUSA SIBIRICA			***								
DELPHASTUS CATALINAE									***		
DIGLYPHUS ISAEA			***								
DIGLYPHUS-DACNUSA MIX			***								
ENCARSIA FORMOSA									***		
ERETMOCERUS EREMICUS									***		
ERETMOCERUS-ENCARSIA MIX									***		
FELTIELLA ACARISUGA						***					
HETERORHABDITIS MEGIDIS†		***						***			
HIPPODAMIA CONVERGENS	***										
HYPOASPIS MILES		***					**				
ORIUS SPP.							***				✓
PHYTOSEIULUS PERSIMILIS						***					
PODISUS MACULIVENTRIS		***									
STEINERNEMA CARPOCAPSAE†		**	***		***						
STEINERNEMA FELTIAE†			***	**			**				
STEINERNEMA KRAUSSEI†			**					***			
TRICHOGRAMMA BRASSICAE		***									

† beneficial nematodes

See our Biological Catalogue for a greater depth of information on predators and Bioline-specific distribution methods. Alternatively, you may contact our Biological Team directly.

Biological Control Overview

Bioline Distribution Options

We are pleased to carry the following distribution packages for biological control in the greater IPM context of horticultural management.



Bugline[†] *NEW*

Bugline is a unique delivery system for controlled release sachets and is a key treatment for Western Flower Thrips in ornamental crops. Bugline can be introduced onto the crop using the spray boom; distribution of the strips is done by pulling out the line from the alleyway. *This can save up to 16 worker-hours per hectare compared to using single sachets.* The Bugline also acts as a very effective distribution platform for the mites within the crop. Bugline resists overhead watering and ensures that predatory mites are released continuously in environments where normal sachets would not perform well.

Bugline is available for:

- *Amblyseius cucumeris* in strips of 80m, 100m, 140m, and 160m.
- *Amblyseius andersoni* in strips of 100m.
- *Amblyseius swirskii* in strips of 100m.

[†] Syngenta Bioline exclusives

Bulk Bags

Our most popular product. Covers a larger area as opposed to using a small shaker or small slow-release pack. Available in the following:

- *Amblyseius cucumeris* in 250,000 / 5L Bulk or 100k / slow-release Bulk
- *Amblyseius andersoni* in 125,000 / 5L Bulk
- *Amblyseius swirskii* in 125,000 / 5L Bulk
- *Atheta coriaria* in bulk bags of 3000
- *Hypoaspis miles* in 125,000 / 5L

Breeder Pail[†] *NEW*

The Staphyline Breeder Bucket System is designed to give a continuous release of beetles over an extended period. Once the bucket is set-up and positioned in the greenhouse, the beetles will emerge from the bucket through the emergence holes in the side as the population density increases.

Blister Packs[†]

Unlike *Encarsia formosa*, *Eretmocerus eremicus* is unable to turn within the host integument, so it doesn't emerge well with cards. The Blister Pack is an alternative method of distribution. It can be suspended in the crop in the same way as a card. It makes the product clearly visible and allows the grower to judge quality and emergence easily. Optimised conditions were designed for the pupae to hatch. Available predatory Blister Packs are:

- *Encarsia/Eretmocerus* blister pack
- *Eretmocerus eremicus* blister pack
- *Aphidoletes aphidimyza* blister pack

CRS, Gemini[†], and CRS-mini sachets

Control Release System (CRS) sachets are made of non-porous paper and contain a breeding colony of the predatory mite, giving continuous release over a period of 6+ weeks. CRS sachets are pre-perforated to allow mites to escape. Syngenta's patented Gemini sachets are water resistant and can be used in crops with overhead irrigation or those grown outside. CRS-mini sachets contain 125 or 250 mites per sachet for individual plant application. Mini-sachets available:

- *Amblyseius cucumeris* mini sachets (250)
- *Amblyseius andersoni* mini sachets (125)
- *Amblyseius swirskii* mini sachets (250)



Aphids

Description

- soft-bodied
- generally wingless (winged variations develop with colony overcrowding)
- slow-moving & found in clusters
- 1-4mm in length
- Colour variations include red, green, black yellow etc.



Significance

The large number of species and the short life span (particularly in the summer) allows this pest to infest a wide array of crops quickly. Aphid colonies can grow very rapidly, covering foliage and weakening the plant. The copious amount of honeydew produced encourages the growth of sooty moulds, which further weaken the plant. Aphids are also important vectors of plant viruses, causing some feeding to result in distortion of the leaves.

Crops Cues

- Distortion and deformation in leaves and flowers
- Sticky "honeydew" development on plant tissue

Predators (Products)

Aphelinus abdominalis
Aphidius colemani
Aphidius ervi
Aphidoletes aphidimyza
Chrysoperla carnea
Hippodamia convergens

Apheline ab, Aphiline ACE mix
Aphiline c, Aphiline ACE mix, CE mix
Aphiline e, Aphiline ACE mix, CE mix
Aphidoline aa
Chrysoline c
Ladybugs

Caterpillars

Description

- Larval form of moths and butterflies
- Wide variety of colours and patterns (many camouflage to host plant)
- Segmented, cylindrical body with 3 pairs of true legs (multiple pairs of "prolegs" may also be visible)
- Chewing mouthparts



Significance

Caterpillars cause large amounts of damage in a short time by feeding on foliage or burrowing into fruit or stems. The many species that enter greenhouses as flying adults cover a wide range of host plants, laying eggs that develop into heavy-feeding larvae.

Crops Cues

- Holes in foliage or defoliated plants or burrows in fruit
- Black droppings on foliage
- Moths trapped on sticky cards
- Rolled leaves or silk cocoons

Predators (Products)

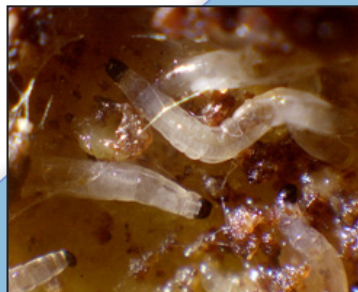
Podisus maculiventris
Trichogramma brassicae

Podiline m
Tricholine b

Fungus Gnat (Sciarid)

Description

- Adult are thin and “mosquito-like” with long antennae and long legs
- Larvae are very small white or translucent soil dwellers with distinct black heads



Significance

The larvae of Fungus Gnats or Sciarids are soil pests that inhibit the growth of plants by feeding on the roots. Wet media promotes the growth of these pests which populate in groups and can become a nuisance to workers when disturbed. Sciarids also transfer fungal diseases.

Crops Cues

- Adults can be seen around plants and resting on the media surface
- Reduction in germinating plants
- Larvae in the soil can be seen with a hand lens (10x)

Predators (Products)

Atheta coriaria
Hypoaspis miles
 Beneficial Nematodes

Staphyline ac
Hypoline m
Nemasys, Guardian Gnat/Lawn

Leafminer

Description

- Adults are mostly brown/black with a yellow spot on the thorax
- Larvae are yellow with some white
- Pupae are brown and found outside of the leaf



Significance

Adult leafminers leave feeding spots on the foliage. The larvae form “mines” by feeding on leaf tissue inside the leaf causing unmarketable plants as well as weakening the plant by reducing leaf surface area.

Crops Cues

- Tunnelling/Mining traces in leaves
- Characteristic feeding marks (white dots) on leaves

Predators (Products)

Dacnusa sibirica
Diglyphus isaea
Steinernema feltiae

DacDigline
Digline i
Nemasys

Mealybug

Description

- Greyish-white, wingless with segmented bodies (adult females)
- Create white, waxy deposits and honeydew causing sooty mould
- No movement when disturbed



Significance

Generally have slow development and can particularly target tropicals amongst other ornamentals. Populations can grow unnoticed for weeks before signs of plant stress occur at which point they are difficult to eradicate with chemicals. In addition to feeding damage and sooty mould several species will also inject toxins into the plant causing malformation.

Crops Cues

- Waxy white deposits (egg sacks) and honeydew
- White, wax-covered adult female

Predators (Products)

Chrysoperla carnae

Cryptolaemus montrouzeri

Chrysoline c

Cryptoline m

Spider Mite

Description

- Round bodies with 8 legs (adults)
- Generally yellow/green bodies with 2 black spots (Two-spotted spider mite)
- Some species have more black or are entirely red (e.g. Lewis & Carmine Mites)
- Two-spotted spider mites turn bright orange-red when in diapause



Significance

Spider mites can quickly devastate a crop, especially in summer when high temperatures affect their life cycle dramatically. They tend to populate in groups feeding on the plant which is marked as stippling, and creating silk webbing which eases their transfer from plant to plant. They can also be transferred unnoticed by workers on clothing, tools or plant material. When temperatures drop, day lengths shorten or food is scarce they can enter into diapause, a hibernation-like phase, in which they will remain alive until the environment is suitable again.

Crops Cues

- Yellow speckling of leaf surface [primary stage]
- High infestation of silk webbing [secondary stage]

Predators (Products)

Amblyseius andersoni
Amblyseius californicus
Amblyseius fallacis
Amblyseius swirskii
Feltiella acarisuga
Phytoseiulus persimilis

Anderline aa, Bugline andersoni
Amblyline cal
A. fallacis
Swirskiline as, Bugline swirskii
Feltiline a
Phytoline p



Other Mites

Broad Mite (*Polyphagotarsonemus latus*)

Cyclamen Mite (*Phytonemus pallidus*)

Tomato Russet Mite (*Aculops lycopersici*)

Description

- Microscopic mites
- Elongate, conical shaped bodies with 8 short legs all at the front

Significance

These tiny mites can cause immense damage and due to their small size can go unnoticed for long periods of time. When present they cause distortion and discolouration of plants and if left untreated will eventually kill them. They are a challenge to eradicate from a greenhouse since they generally feed at the heart of plants.

Crops Cues

- Distortion of the foliage which may appear glossy and discoloured [Broad & Cyclamen]
- Loss of flower production [Broad & Cyclamen]
- Silvery appearance of leaves [Tomato]
- Leaves turn brown and brittle in advanced stages [Tomato]

Predators (Products)

Amblyseius andersoni

Amblyseius californicus

Amblyseius cucumeris

Amblyseius swirskii

Anderline aa

Amblyline cal

Amblyline cu

Swirskiline as

Shore Flies

Description

- Adults are black flies with thick bodies and short antennae
- Distinctive spots on the back of their wings (noticeable while at rest)
- Larvae are short and leathery in appearance with no distinct head



Significance

The larvae cause the most concern as they feed on the roots of developing plants causing a reduction in the number of plants germinating during propagation. They can be a nuisance to workers as well as lowering the market value of a plant with their feces or presence near the soil.

Crops Cues

- Presence of the black adult flies – will rise out of plants when disturbed (group near the soil)
- Lower germination rates

Predators (Products)

Atheta coriaria

Staphyline ac

Thrips (Western Flower)

Description

- Adults have black abdomens with brownish-orange head and thorax
- Thin, hair-like wings
- Short legs
- Long, thin body
- Nymphs have the same shape but are entirely yellow



Significance

These pests are capable of moving throughout the greenhouse via wind causing their presence to be widespread in a short period of time. The adults are attracted to the flowers while the larvae cause feeding damage to the foliage or fruit. They are also vectors of diseases such as Tomato Spotted Wilt Virus and Impatiens Necrotic Spot Virus.

Crops Cues

- Blemishes on flowers and fruit
- Leaf tissue damage in the form of:
 1. Silver or grey patches
 2. Black dots indicating excrements

Predators (Products)

Amblydromalus limonicus
Amblyseius andersoni
Amblyseius cucumeris
Amblyseius swirskii
Atheta coriaria
Hypoaspis Miles
Orius spp.
Steinernema feltia

Limoline al
Anderline aa, Bugline andersoni
Amblyline cu, Bugline cucumeris
Swirskiline as, Bugline swirskii
Staphyline ac
Hypoline m
Oriline l, Oriline m, Oriline i
Nemasys

(Black) Vine Weevil

Description

- 1cm long
- Light grey-brown colour
- Nocturnal (damage will be evident with no beetles present)
- Larvae are "C" shaped and white with a brown head



Significance

The principle damage is done by the larvae in the soil, which feed on the roots. Heavy infestations can reduce plant growth or result in death. Larvae remain in the soil throughout the winter when temperatures decrease and resume feeding in the spring.

Crops Cues

- Characteristic notch in leaf
- Larvae in roots (principle damage)

Predators (Products)

Heterorhabditis spp.
Steinernema kraussei

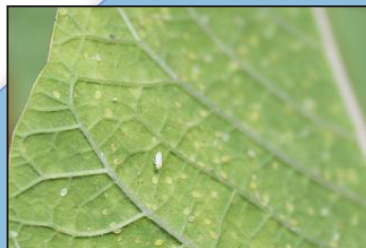
Guardian Lawn
Exhibitline sk

Whitefly

Greenhouse Whitefly (*Trialeurodes vaporariorum*)
Silverleaf Whitefly (*Bemisia tabaci*)

Description

- Yellow body with wings covered in a white wax
- Eggs are light brown or black and generally laid in circles or half-circles
- Nymphs are oval shaped and very slow moving
- [Greenhouse] pupae are also oval with visible long hairs and immobile
- Adults fly out when disturbed



Significance

Larvae and adults feed on plant juices and produce large amounts of honeydew resulting in sticky foliage and sooty mould. The Greenhouse whitefly is the most common species for North America, however the Silverleaf whitefly is becoming more prominent as it is brought in from warmer climates. The Silverleaf whitefly is also a vector for many viral diseases such as Tomato Yellow Leaf-Curl and Cucumber Vein Yellowing.

Crops Cues

- Large volumes of honeydew
- Yellowing of plant tissue

Predators (Products)

Amblydromalus limonicus
Amblyseius swirskii
Delphastus catalinae
Encarsia formosa
Eretmocerus eremicus
Encar./Eretmoc. Mixes

Limoline **al**
Swirskiline **as, Bugline swirskii**
D. catalinae
Encarline **f**
Eretline **e**
EncarEretline **mix**

Beneficial Nematodes

Overview

There are two categories of nematodes involved in horticulture: pest and predatory nematodes which attack plants and target pests respectively.

Quick Beneficial Nematode Facts courtesy Margarethe Fast

- They can survive in the rootzone of plants for 2 – 3 months prior to entering host insect. *Most pests spend a portion of their life in this zone!*
- Nematodes have high reproductive rates, with each generation increasing an order of magnitude of 10^5 .
- Nematodes can detect pests from fluctuations in temperatures or methane gas present in the soil.
- Nematodes actively seek hosts, travelling approximately 2.5cm per hour
- Due to a natural protective layer, nematodes do not interfere with neighbouring soil and are resistant to environmental conditions and hazards such as most chemicals, fungicides and insecticides.

Exhibitline sf

Steinernema feltiae

This product targets Leafminer, Thrips and Dipterans by releasing bacteria that kills the host. Minimum soil temperatures must be 14°C while the bacteria are disabled above 26°C. The vermiculite formula is designed to avoid residues on leaf and petal surface when used for Western Flower Thrips.

Exhibitline sc

Steinernema carpocapsae

This product is effective at targeting many Lepidopteran species such as webworms, cutworms, armyworms, etc. Its effect / treatment is the same as *Steinernema feltiae*.

Guardian Gnat

S. feltiae, S. carpocapsae et al.

This product targets Fungus Gnat, Shorefly and Thrips and contains a mixture of two main strains of nematodes as well as several other strains that combine to give it its wide range of efficacy.

Guardian Lawn Patrol

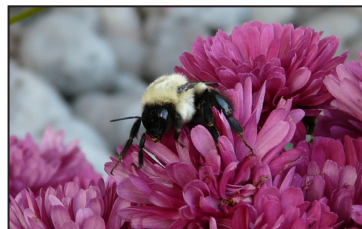
Heterorhabditis megidis, Steinernema carpocapsae et al.

This unique mixture of nematodes includes many different strains that are able to tackle all the common pests found damaging lawns and more, including Dipterans, Lepidopterans and Coleopterans. It is also cold-tolerant making it more effective in the early spring and late fall.

Bumblebees

Why Bees?

Pollination ensures maximum fruit quality and yield. Bumblebees make excellent pollinators for greenhouse crops due to their size, technique, and number of workers designated for the job. In addition, they do not swarm and are much less aggressive than other bee species, making the environment reasonable for workers.



COURTESY MARIJKE BLOM

Global Horticultural Inc. bumble bees are provided in an insulated hive which contains a concentrated “nectar” reservoir that serves as a sugar source for the bees. This reservoir is always available to the bees and will last the lifetime of the hive. The hive is also equipped with a lock if the hive needs to be moved, which allows the bees to enter the hive but not leave.

Bumble Bee Hive Instructions for Use

1. Ensure the hive is kept upright.
2. Avoid placing the hive near a CO₂ source.
3. Place the hive in an area protected from the sun and condensation, 0.5 - 1 metre above the ground.
4. Hive placement will affect the efficiency of the bees.

Optimal placement

Place hive on or near the sidewalk or between rows. In the winter place the hive above the crop. In spring and summer place below the lower leaves.

Other information

Allow the hive to calm down for at least 1 hour after placing it in its final position before opening. If there is less than 3 hours of daylight left in the day, open hive the next morning. If the hive needs to be moved, slide hive opening to “IN only” and allow bees to return for 4 hours before moving. This allows the bees to enter the hive but not exit it. Ensure any pesticides you wish to apply are safe for bumble bees. If unsure, please contact us to speak with a member of our integrated pest management team.

Crop Monitoring, Lures, and Traps

Pheromone Lures

A pheromone lure contains sexual attractants for monitoring your common greenhouse (flying) pests. During low light and low temperature periods, pests may become very inactive. These lures aim at increasing this activity to improve the efficiency of monitoring. We have a large array of available lures to monitor a diverse range of pests.

Some pheromone lures may also be used to improve the efficacy of spraying. Simply distribute the pheromone in the greenhouse atmosphere (ie. via greenhouse fans) prior to spraying. This will evoke the pests into becoming more active, thus increasing their susceptibility to the spray.

Lures are often used in conjunction with sticky or delta traps.

Tips for handling lures from Pherobank knowledgebase

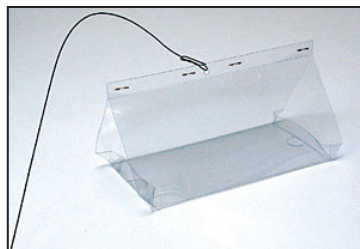
- Pheromone lures are best kept in the refrigerator or freezer in the tightly closed original packaging. Lures are guaranteed for 2 years when kept at (minus) -25°C and for 1 year when kept in the refrigerator. Allow the original packaging to acclimate to room temperature before opening to prevent condensation.
- The white vials must be closed when hung in place. The red (rubber) lures may be pierced at the edges without hampering the potency of the lures.
- Wash your hands before and after working with pheromone lures in order to prevent contamination. This is vitally important when working with lures for different species.
- Different traps are designed for targeting specific species.



Crop Monitoring, Lures, and Traps

Pheromone (Delta) Traps

Generally used in conjunction with pheromone lures. These triangle (delta) traps are used to monitor specific pests based on the pheromone lure used. Allow at least 10 metres between traps and hang at foliage height to ensure maximum effectiveness.



Pherobank

PHEROBANK offers top quality pheromones for the selective detection of over 150 different harmful insects. Almost 400 different chemicals are available. Their quality control guarantees optimal use in pheromone identification work.

Pherobank Delta Traps (pictured above)

PHEROBANK offers the world's largest collection of pheromone compounds. They develop and produce pheromone lures that are used worldwide for the selective detection of (harmful) insect species.

Pherobank Water Traps

Ready-to-use lures for monitoring purposes are available for over 150 different species, mostly lepidopteran. We sell exclusively optimized pheromone blends in our lures. A loading of 1 mg or more (in general) of the active ingredients ensures high attractiveness as well as longevity in the lures.



Syngenta® Thripline ams

Thripline ams contains a synthetic version of a sexual aggregation pheromone for Western Flower Thrips (*Frankliniella occidentalis*) and works as a pheromone system by transmitting a mating signal. The male and female thrips then emerge onto the top of the crop looking for any (leaf or flower) surface on which they can display. The Taki-traps® act as an alternative display area and in the process catch the thrips.

Sticky Traps

Wet-sticky traps are used to trap flying insects and are useful for indicating the presence of pests. Yellow traps are used for attracting sciarids, shoreflies, aphids, whitefly, leafminers, and will also trap thrips. The blue traps are more attractive to thrips. Such traps are also useful for identifying any pest invasion into a greenhouse from doors or vents.

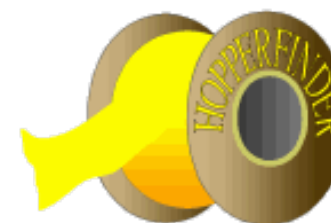


How are sticky traps used?

The height at which the trap is hung in relation to crop canopy will affect the number of insects caught. A trap can be left in position for several weeks. If it becomes full of insects its efficiency at trapping will decline. At this point the trap should be changed. Identification of the insects requires experience and training. Please contact a field representative of Global Horticultural for assistance in this matter.

Hopperfinder

Hopperfinder is a non-toxic 6" wide x 1,500' long U/V resistant plastic film which attracts a wide variety of flying or hopping insects. It can be used to trap population migrating into vineyards, greenhouses, or resident populations spread throughout the field. Coated with a non-drying, water-resistant adhesive, it holds pests until they die and are effective until covered with insects or dust. Blue and yellow colours available.



Pocket Magnifyer

A lightweight magnifying glass which folds up compact. Great to use when monitoring your sticky cards to identify your pests more clearly.

Other IPM Supplements

Alpha-Agri Products



Plant XL™

A bio-stimulant made up of micro organisms, trace elements and natural acids suspended in carbon solution (humic acid). It is formulated to promote and protect root zones. Available in 10L, 100L, 190L and 1000L.



HumiKa™

Based on humic acid, fulvic acid, and trace elements, HumiKa™ is a source of fertiliser as well as a nutrient transporter into plant roots. It strengthens cell membranes, increases microbial activity and decreases immune response time. HumiKa™ has a proven track record in many field crops increasing yield response¹ by 10%. Available in 10L, 100L, 200L, and 1000L.



Clean Leaf II™

Clean-Leaf will keep your leaves fresh and green throughout the growing season. It works by covering the leaf surface with a thin layer of paraffinic oil (with a small amount of nitrogen) for successful leaf protection against the elements. Available in 10L, 114L and 1045L.



Ocean-Tek.ca™

As the name suggests, ocean minerals are harvested to enhance the taste of fruits or vegetables grown hydroponically or commercially as well as to create healthier crops. These minerals are not found in commercial fertilizers or in many soils.

¹ Field trials on HumiKa™ were run by a third party and not Global Horticultural or Alpha Agri-Product.

Deruned products

Alsa

Alsa is a systematic product to enhance plant growth and improve resistance to stress factors; it is a natural crop protection product base on the odour and taste compounds derived from garlic. The pest no longer desires the scent and flavour of the plant; they become restless and leave their hiding-place. Therefore, natural predators can be used in conjunction with Alsa during its active period. Afterwards, the compounds transform into elements used for plant metabolism. Thus, weekly doses are recommended.

Modicell

Modicell stimulates the micro-ecology and activates the root system of your crop; it is a liquid, natural enzyme preparation comprising 15 different enzymes. These enzymes ensure root residues in artificial substrate are rapidly broken down; decomposition prevents old roots from accumulating and rotting where disease-causing agents generally reside. Modicell also contains vitamins that promote root growth and increase absorption capacity of roots.

Savitan (not available in Canada)

Savitan increases a crop's resistance protecting it from nematodes; it is a liquid concentrate based on extracts from desert plants and fatty acids. Furthermore, Savitan protects your crop against root knot nematode and other free-living nematodes. We advise starting with Savitan early in the crop cycle. A biweekly dosage is most effective. Savitan can be combined with all common preparations. Do not use Savitan with hydrogen peroxide products.

Saponin (not available in Canada)

Saponin is a natural wetting agent based on the Yucca Schidigera, a member of the Lily family (Agavaceae) which contains exceptional sugar derivatives that enable it to survive under the extreme conditions of the desert. These sugar derivatives, together with polymers, are isolated from the plant extract. Saponin improves the effectiveness of crop protection products, reduces the amount of visible residue, and ensures that the crop dries quickly. Saponin is unique in that it is a 100% natural in contrast to many other wetting agents of synthetic origin; it is bio-degradable and does not cause leafburn. Saponin is easily mixed with (cold) water and chemical crop protection products.

Syzar (not available in Canada)

Syzar disrupts the feeding and reproductive behaviour of leafminer; it is a natural crop protection product based on cloves. It has proven effective in disrupting the egg-laying and eating behaviour of the leafminer fly.

Plant Care Tags

Plant care tags do more than tell your customer what kind of flower they are taking home or how to properly care for it; a well crafted tag entices the potential customer to envision how the final product will fit in their home as well as serving as an effective marketing tool.

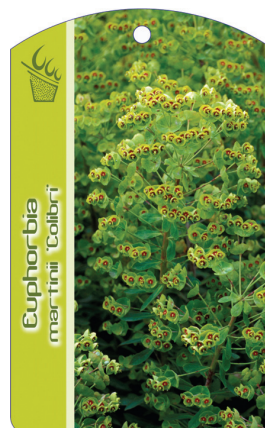
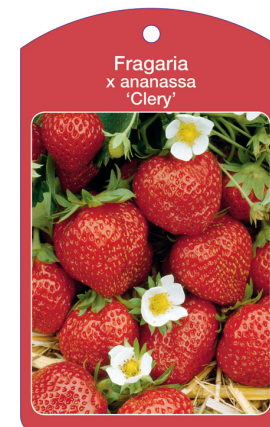
Our design process allows you to choose the concept that will best suit your crop, letting you have input at every stage.

Use your own pictures or let us find the image that will best brand your crop. Our tags are produced using the latest in printing technology and with quality UV inks, coatings and

varnishes that better retain the vibrancy of the colours in all weather conditions. The thickness of the tags makes them sturdy and easy to put into potted plants.

Tag varieties

- Hanger Tag (with stick or elastic band)
- Stick-In Tags
- Click-On Tags



Sales Concept

Branding

Once you've settled on a design it is very easy to brand your business with similar tags for a variety of different purposes.

Consultation Process

It's quite simple. Contact us to book a consultation. We'll send over a representative to discuss your business direction, initiatives and vision and commit to collaborating your sales concept with our expertise in design.

Sales Concept

Our sales concept covers the entire spectrum of post-harvest design and distribution. It is as comprehensive as you wish for it to be. Plant care tags is really only the beginning. Ideas include:



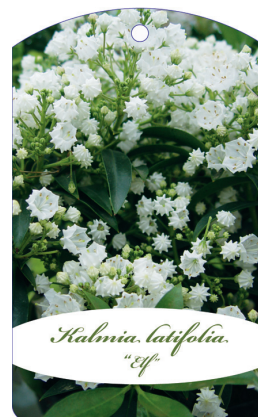
Branding Example #1



Branding Example #2



Branding Example #3



Sleeves

Global Horticultural stocks a wide range of sleeve sizes and thicknesses. New products include pot sleeves and hanging baskets sleeves.

Materials + Thicknesses

- CPP 30
- BOPP 40
- HDPE 30, 35, & 40 (Hanging Basket Sleeves)

Other Features

- Hot Needle or ventilation holes
- UPC holes
- "Grown in Canada" Labelling
- Multi-lingual printing
- Custom sizes and design sleeves on request

Rose Wrap

30 micron rose wrap, available in clear or with Grown in Canada printing or choose a custom design.

Dimensions: 30 cm x 1000m

Clear BOPP/CPP Sheets

Different sizes available

Accessories

Hebo Halters

An easy and fast way to sleeve your potted plants/cut flowers, adjustable height and a great time saver.

Hebo Bunch Cutters

Cut bunches faster than before. Available in left- or right-handed models.

For more products we carry refer to: <http://www.vanderwindt.com>

For more information regarding sleeves contact us.

Standard Stock Sizes	
METRIC SIZES (CM) [HEIGHT x TOP x BOTTOM]	SLEEVES/BOX
25 x 27 x 11	4,000
30 x 25 x 11	3,000
34 x 25 x 11	3,000
35 x 18 x 6	4,000
35 x 18 x 9	4,000
40 x 20 x 8	3,000
40 x 25 x 10	3,000
40 x 30 x 12	2,000
40 x 35 x 10	2,000
40 x 35 x 15	2,000
40 x 40 x 15	2,000
45 x 45 x 15	2,000
50 x 25 x 8	3,000
50 x 25 x 10	3,000
50 x 30 x 10	2,000
50 x 35 x 12	2,000
50 x 35 x 15	2,000
50 x 40 x 15	2,000
50 x 45 x 15	1,500
55 x 50 x 18	1,500
60 x 28 x 8	3,000
60 x 30 x 10	3,000
60 x 35 x 10	2,000
60 x 35 x 13	2,000
60 x 40 x 15	2,000
60 x 50 x 15	1,500
60 x 60 x 20	1,500
65 x 35 x 11	2,000
70 x 40 x 12	2,000
70 x 45 x 15	2,000
70 x 50 x 20	1,500
75 x 60 x 20	1,000
75 x 70 x 20	1,000
80 x 40 x 24	1,000
90 x 40 x 24	1,000

CPP Pot Sleeve Sizes (30/35 micron)

METRIC (CM) SIZES	POT SIZE
41 x 30 x 9	4"
39 x 32 x 13	4"
39 x 32 x 13	4.5"
46½ x 33 x 13½	4.5"
43 x 38 x 14	4.5"
55 x 48 x 14½	6"
62 x 50 x 14½	6"
65 x 6 x 14½	6"
50 x 50 x 17	6"
55 x 50 x 18	6"
60 x 60 x 19	6" - 6.5"
60 x 60 x 25	8"
70 x 70 x 25	8"
70 x 70 x 25	8"
75 x 75 x 33	10"

. Available Specs .

Grown in Canada (GIC)
Hot Needle (HN)
Bottom Seal (BS)
Hanging Holes (HH)
Air Holes (AH)
UPC Holes (UPC)

Hanging Basket Sleeve Sizes (HDPE)

METRIC (CM) SIZES	MICRON	SIZE
37½ x 32½ x 11½	30	4"
46 x 69 x 33	30	10"
55 x 50 x 18	30	6"
60 x 60 x 19	30	6.5"
75 x 60 x 20	30	6.5" - 8"
60 x 60 x 25	30	8"
60 x 60 x 25	40	8"
70 x 70 x 25	30	8"
70 x 70 x 25	40	8"
60 x 65 x 33	30	10"
60 x 65 x 33	40	10"
60 x 72 x 32	30	10"
60 x 72 x 32	40	10"
75 x 65 x 33	30	10"
75 x 65 x 33	40	10"
75 x 75 x 33	30	10"
75 x 75 x 33	40	10"
66 x 71 x 41	30	12"
66 x 71 x 41	40	12"
73 x 75 x 49	40	12"

. Available Specs .

Grown in Canada (GIC)
Air Holes (AH)

Pot Covers

Global Horticultural now carries *pot covers*. There are a number of different styles, outlined below.

1. Classic Covers

Coloured exterior with *white* interior

Sizes: 4", 4.5", 6"
Colours: Red, White, Dark Yellow, Yellow, Deep Purple, Lavender, Pink, Evergreen, Fern Green, Nile Green, Burnt Orange



2. Luster Covers

Shiny exterior with *silver* interior

Sizes: 4", 4.5", 6", 8", 10"
Colours: Red, Blue, Deep Purple, Lavender, Pink, Evergreen, Silver, Gold, Burgundy



3. Frosted Covers

Coloured matte finish exterior with *silver* interior.

Sizes: 4", 4.5", 6", 8", 10"
Colours: Red, Pink, Deep Purple, Evergreen, Gold



4. Kraft Covers

'Paper' look exterior.

Sizes: 4.5", 6"
Colours: Burnt Orange, Red, Evergreen, Burgundy, Natural (Fall/Winter), Nile Green, Lavender, Natural, Yellow, Pink (Spring/Summer)



5. Floral-Design Covers

Floral design exterior with *white* interior.

Sizes: 4.5", 6"
Colours: variety of floral designs.



Chrysal® Cutflower Additives

Keep your cut-flowers looking as beautiful as the day they were picked with Chrysal's line of post harvest care products. All Chrysal products are easy to use and created with growers and florists in mind.

Chrysal RVB Professional 1

Checks the processes in the flower stem and water that causes vascular plugging. As a result, the water uptake is increased, preventing premature wilting and considerably improving the inner quality of the cut flower. See bottom-right for pictures.

- Excellent conditioner for roses, gerberas and chrysanthemums
- Most universal flower pre-treatment
- Keeps bacteria down
- Contains minimal sugar
- Keeps water clear
- Reusable for one week

Chrysal Clear Professional Bulb T-bags 920

Specially formulated to replace nutrients lost post-harvest. Excellent for preventing leaf yellowing and increasing flower sizes, suitable for all bulb flowers.

Chrysal Clear Professional 2

A conditioning product for all cut flowers and can be used in cold and/or room temperature environments. Stimulates water uptake of the cut flower and prevents premature opening of flowers. This product dissolves clear and is odourless in water. See bottom-right for pictures.

Chrysal Clear Professional 2 T-bags 1500

A conditioning product for all cut flowers that stimulates water uptake and keeps flowers and foliage in an optimal condition. Clear and odourless in water, it can be used in cold and/or room temperature environments.

Chrysal Professional 3

Flower food in a liquid format that is suitable for all cut flower varieties. This nutrient will keep flowers in peak condition and ensure full flower development. Ideal for use in vase and foam arrangements. See bottom for pictures.

Chrysal CVB

A water reconditioner in tablet form for Gerberas and cut summer flowers. Chrysal CVB improves quality by stimulating its water uptake resulting in an improved vase life.



Chrysal SVB

A post harvest, anti leaf-yellowing treatment for Lilium, Alstroemeria and Euphorbia fulgens. Clean and ease to use, this product comes in a tablet form and contains a tracer for dosage control. Can be used in combination with Chrysal AVB to protect flowers from ethylene produced by external sources.



Chrysal AVB

Prevent premature shrinking and dropping of buds, leaves and blooms with this post harvest conditioner, specially formulated for ethylene sensitive flowers. Can be used in combination with Chrysal SVB.

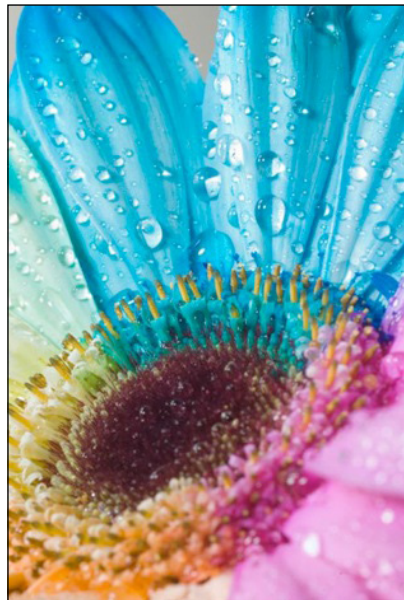
Chrysal OVB

A hydrating solution for summer flowers, Chrysal OVB stimulates water uptake in the stem which encourages immature buds to flower and stay fresher longer.



Centimo® Flower Dyes and Decorations

For those that wish to add creativity, colour, and design to your flowers and displays. Centimo® is a world market leader for dyes and professional developer of glitter, snow, and stone for the horticultural market. These products are environmentally safe and easy to apply.



Flower dyes

Centimo® can offer you all kinds of different types of dipping or spray dyes for flowers, plants and foliage. It is possible to reach any desired colour without harming the flower or plant. Our dyes are water-based and environmentally friendly.

Glitters

In combination with special water-based glue, glitter adds a whole new dimension to floral displays. Glitters are an easy and economical solution for creating a dynamic and unique product. Polyester glitters add appeal and allow your product to stand out. Over 28 colours to choose from!

Industrial Snow

Industrial snow is developed for growers, wholesalers, and garden centres. With industrial snow it is possible to create an attractive artificial cover over plants. Industrial snow attaches well to the plant but does not harm it. A very popular product during winter season.

For more information please refer to: <http://www.centimo.nl>

Deco Stones

With Deco Stones you can give plants, flowers, aquatics, or other decoration arrangements a trendy look. Deco Stones will also keep the plant soil hydrated. Available in a variation of sizes and colours, including: yellow, orange, pink, green, blue, red, lavender, green, white, black, and purple.



Satin Dust

Satin dust pigment is a product that is similar to glitters; the pigment creates a softer touch, ranging from gentle pearl to a sparkling rainbow. They are non-toxic, non-flammable, non-conductive, and environmentally safe. They are available in a variety of particle sizes and bulk densities and well-suited for longevity.

Vase Colours

Another effective strategy in letting your product stand out is vase colours. With a little colour theory and personal creativity, vase colours—for glass vases—can complement and brighten the colour of your bouquets. The low concentration of the *natural* dyes will not affect the colour flowers, nor will it harm the flowers or environment. Vase colours should be combined with regular flower food in order to achieve the optimum results. Current colours include: red, green, blue, yellow, orange, violet, dark blue, lavender, hot pink, and pink.



Water Crystals

An alternative to soil and water media, water crystals gives a trendy look while acting as a water storage. Candles in water crystals produces an unusual and beautiful effect, for example. The product is available in several colours: red, green, blue, dark blue, turquoise, yellow, orange, hot pink, pink and transparent.

Elastics

Cyklop® AXRO-FQC2 Bundling machine

Cyklop International is an innovative creator of bundling and binding machinery since its inception in 1912. The AXRO-FQC2 is Cyklop's latest bundling innovation; the tabletop machine is compact and constructed on a flat, noise reducing aluminium base plate. The products are passed along the table surface through the pre-draped elastic string. The machine then switches on and the needle arm pulls the elastic string behind the bundle into the tying mechanism. The ends of the elastic string return to the needle arm to the "up position", completing the cycle and allowing for the removal of the tied product.

Technical Specs:

Capacity	up to 6,000 cycles/hour
Power	200-240 V, 50/60 Hz, 1 ph 100-120 V, 50/60 Hz, 1 ph
Feed Through	Height – 150 mm, Depth – 250 mm
Bench	Stainless Steel
Machine Weight	47 kg
Trigger	in tabletop
Push-in	from left to right (standard)
String Tension	adjustable

Cyklop® Elastics

We sell cyklop elastic rolls to fit all cyklop binding machines.

Culto Elastics

Bundling elastics. See picture.



LIQUIDSEAL® post harvest solutions

Liquidseal® is a post-harvest, slow release solution initially designed for roses. Today we sell Liquidseal® that spans roses, gerberas, and chrysanthemums. Human and environmentally safe, Liquidseal® contains no active substances and is completely bio-degradable. By controlling the metabolic activity for the packaging of perishables allows:

- Extension on the shelf life of your products
- Less failure and a higher return on investment.
- Better control over the quality of gerberas in the supply chain.
- Discovery of new markets that were previously inaccessible by transport limitations and times.
- Other transport option (boats instead of planes).
- The introduction of new gerbera species is possible by improving sustainability.



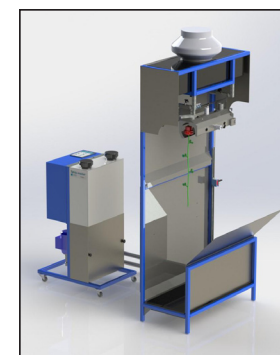
Packaging and dosage

Liquidseal® for gerberas post harvest comes in 25L cans or 200L drums. Upon delivery the product is ready for use. For proper operation do not dilute with water.

Mechanisation

1. Spraymaster (for mounting on grading machine)

Contains 1) adjustable volume of spray nozzles, 2) integrated 35L tank Liquidseal® and 15L tank water, 3) ventilation and recycling of the spray mist, 4) touchscreen for easy operation, 5) possibility not to spray 2nd quality and short roses, and 6) minimum downtime of production due to the plug and play system



2. Spraymaster Duo Station (stand alone unit for spraying by hand)

3. Spraymaster Selection (for spraying Liquidseal and grading by length)

BioXTEND®

Specialists in post-harvest solutions, BioXTEND® is at the forefront of ethylene removal and air purification systems, aiding a growing number of global flower and vegetable producers to drastically reduce the amount of lost product due to the effects of ethylene and bacteria growth.

BioX® Granule

The BioX® Pellets are a perfect combination of extremely porous alumina beads mixed with Potassium Permanganate (KMnO₄). Our products take the ethylene gas out of the air to slow down the natural decay process of fruits, vegetables and floral. BioX® also controls molds and rots, kills bacteria and removes odors.

BTX100 Filters

Keep your products free of bacteria, ethylene and fungi spores while in transit! Easy to install and disposable, BTX100 filters are mounted to the air-return grid inside the containers. Mold development is contained and the shelf life of produce is extended.



PHOTOS COURTESY BIOXTEND®

BioX® Sachets

Toss a sachet inside packing boxes/trays/bags to keep produce or flowers fresh and free of bacteria, all while controlling ethylene gas. Sachets are organic compliant, packaging material (Tyvek®) and ink are FDA approved for Food Contact.

Modified Atmosphere Packaging (MAP) by ZOEpac™

The ZOEpac™ MAP bag is a modified atmosphere and humidity bag of polyolefins developed by BioXTEND® and results in CO₂ and O₂ conditions that preserve the freshness and internal quality of the product during shipping, storage and supermarket shelf life. Ideal for a variety of fruits, vegetables and herbs.

EthylGuard® Series

This unit for coolers holds filters made of BioX® media which is the active component that purifies the air. With an elevated pH of 9.2, BioX® instantly eliminates bacteria and oxidizes low molecular weight gases (ethylene, sulphur compounds, ethanol, acetaldehyde...) by converting them into harmless components for the produce (ethylene is converted into H₂O, CO₂ and MnO₂), creating an ideal atmosphere for short and long term storage.

In-Transit Temperature Recorders

BioXTEND® BXTR Single Use Strip Chart Temperature Recorder is a highly reliable, strip chart time and temperature recording instrument used to record environmental conditions encountered during storage and transportation of temperature-sensitive commodities. A view port allows the operator to visually confirm activation after the startup tab has been pulled. The permanent records produced by these recorders serve as corroborating evidence for insurance claims, quality assurance documentation and protection of your valuable products. Models are available from 5-Day to 90-Day transit periods with a temperature range of -29°C to +38°C (-20°F to +100°F).



For more information on products we carry refer to: www.bioxtend.com/products



Bercomex® Processing Automation

Bercomex® specialises in agri-solutions for cut flowers in harvesting, grading, processing, and packaging.

Bercomex® Furora

Fully automatic grading and bunching machine. Unsorted flowers are processed into ready-to-use bunches. Less damage to the stems due to the vertical way of transport. The unique separator/feeder technology allows maximal labour savings: 4 people can easily process 10,000 stems / hour and 2 grades of bunches.

Features:

- suitable for most cut flowers
- automatic separation
- multiple measuring techniques
- may be integrated with transport, grading and bunching stations

Harvesting Chrysanthemums

Improve and speed up the harvest process with the chrysanthemum cutters and harvest systems.

Speedyflor (cutting machine)

- Adjustable cutting speed
- Cuts 7 rows simultaneously (6 optional)
- Adjustable cutting height 50 - 90 mm
- Compact machine

Chrysanthemum harvest machine S5

- Capacity: up to 2.500 bunches/hour
- Adjustable speed input belt
- Height of harvestbelt adjustable



PHOTOS COURTESY BERCOMEX.COM



SealMatic

Automatically packaging flower bunches with foil. Quick and consistent process for attractive bunches. Suitable for all bunch lengths and diameter.

Features:

- Capacity: up to 600 bunches/hour
- Works as stand alone or fully integrated in processing line
- Packaging adjusted to bunch diameter; foil is neither too tight nor too wide.



Deleafing Machine

Efficient and quickly removing leaves and thorns. Proven to give the best results for lillies. This function can also be fully integrated in a flower processing line.



Flower Processing Lines

Quickly form flowers into bunches. You can integrate several function in the processing unit (such as deleafing the flowers, binding, cutting, sleeves, etc.). Customisable imbricate belts and/or sponge wheels available. Capacity is up to 3,500 bunches/hour.



Filling Buckets

Automatically de-stacking and filling buckets or containers, or both (Multifill). High capacity and significantly less heavy labor. Integration of Chrysal dosing unit allows a capacity up to 1,200 buckets p/h.

Features:

- Capacity: up to 800 kegs p/h
- Filling buckets, containers or both
- De-stacking and/or filling and/or transporting filled buckets



For more information on products we carry refer to: www.bercomex.com

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Conclusion

Thank you for taking the time to read through our catalogue.

Although we cannot possibly catalogue our entire product list, we hope you, the reader, have gotten a comprehensive overview on the products and services that we sell and offer respectively.

Our Global staff wish you the very best with your year. We are at your service.

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