

Flower Petal

Newsletter for the Floriculture Industry

Rootshield

Are You Topping Up?

Longer term crops such as gerberas that are mostly grown in coco typically have the Rootshield granular formulation incorporated into the growing media at planting time. The beneficial fungus *Harzianum trichoderma* grows on the roots "shielding" them against root damaging fungi as well as releasing enzymes that dissolve the cell wall of many fungal pathogens. Over time the levels of the beneficial fungus slowly degrade due to competition with bad fungi such as *Fusarium*, *Pythium*, *Rhizoctonia* and *Phytophthora*. For extended root protection it is essential that growers go back in at the 10-12 week mark and top up the good guys with a half rate drench of Rootshield WP. This ensures that not only do your crops get a healthy start, but they also have a healthy finish. Use the WP version as a drench in seeding flats, liners, cuttings, plugs or as a bulb dust.

RootShield®

Rootshield Plus may have a slight curative effect but prevention is always better than trying to fix a disease problem once you have it. If you do have an existing root disease, treat first with an appropriate chemical to cure the disease and then apply Rootshield to prevent re-infection. Rootshield is compatible with fertilizers, algacides, insecticides, disinfectants, miticides, PGR's and nearly all fungicides. Remember to store any excess product in a sealed container in the fridge or freezer to extend it's shelf life.

Sanitation Keys

Virkon Greenhouse

Virkon Greenhouse is a non corrosive germicide (viricide, fungicide & bactericide) for disinfection of hard surfaces and equipment in greenhouses.

Some of the keys to its effective use is to first clean all surfaces with an appropriate cleaner or detergent to remove as much organic matter as possible prior to disinfection. Do not apply Virkon Greenhouse directly to plants, seed or soil.

Thoroughly wet all cleaned surfaces with a 1% w/v solution and leave on the surface for minimum 10 minutes. For metal surfaces do not leave on longer than 30 minutes. Rinse any metal surfaces with clean water after disinfection.

Virkon has been used effectively for years in footbaths and as a disinfectant spray in the greenhouse prior to planting new crops; the PCP number now allows for its legal usage with efficacy, safety and rates approved by government regulation. Virkon is also effective for disinfecting harvest bins, pruning/picking knives during harvest to prevent disease transmission in the crop and other greenhouse equipment.

Here is an example of some organisms effectively controlled: *Alternaria* (early blight), *Botrytis* (grey mould), *Clavibacter* (bacterial canker), *Collectotrichum* (black dot root rot), *Didymella* (black stem rot), *Fusarium* (wilt), *Penicillium* (stem rot), *Phomopsis* (black root rot), *Pseudomonas* (bacterial speck), *Pyrenochaeta* (corky root rot), *Pythium* (damping off), *Rhizoctonia* (damping

off), *Sclerotinia* (white mould), *Thielaviopsis* (root rot), *Verticillium* (wilt) and *Xanthomonas* (bacterial spot).

Sanitation is the best preventative measure against most pathogens. Start clean wherever possible.

Water Soluble Fertilizers

Precision Fertility with Plant Prod

With Plant-Prod you are assured of premium high quality raw materials, purity and high solubility. All are formulated with chelated micronutrients that are at higher levels than typical agricultural grade blends making them fully available to the plant. All blends are tested for quality control and are production stamped for traceability. Due to the absence of contaminants and fillers, the EC levels are consistently low and uniform. The purity of Plant-Prod sets it apart from the competition.



Solubility is a sign of the quality and purity of the materials used in creating fertilizer. If a fertilizer is not completely soluble, material may settle at the bottom of your tank and create an imbalance of nutrients for your plants. All Plant-Prod fertilizers stay completely

dissolved as only technical grade raw materials are used. No fillers or chemical reagents are added. Strict attention to uniformity assures growers that each bag of Plant-Prod will be the same year after year.

Can't find a fertilizer that's right for you? Plant-Prod is dedicated to producing the most innovative, highest quality water soluble fertilizers on the market. If we do not have a blend in our inventory to suit your needs, a custom blend may be right for you.

Popular blends:

- **No-Stretch 15-0-20** – A limited ammoniacal nitrogen and no phosphorus blend maintains compact sturdy growth plus increased potassium for firmer cell walls. Enhanced micros ensure a superior finished plant.
- **High Nitrate 20-8-20** – Backbone of many greenhouse grower's nutritional programs. Over 60% of N is in nitrate form. Use in rotation with Cal Mag 14-0-14.
- **Optimum Cal Mag 12-2-14** – Designed for plug production but can also be a Cal/Mag supplement for many crops. Contains all 5 macronutrients and a complete micronutrient package.
- **Starter 10-52-10** – For young plants to initiate rapid root development.
- **Finisher 12-0-44** – Ideal for uniform growth, better color and improved plant tone in winter months and when finishing crops.
- **Classic 20-20-20** – Use when a general formulation is required and rapid green up is needed.
- **High K 15-15-30** – Recommended when plants are setting bud, as well as during maturation and blooming.

Many more options available. For excellent results in greenhouse production, field fertigation or foliar feeding you can rely on Plant-Prod water soluble fertilizers.



Combinations and Applications

Using Nematodes with MET 52 and Botanigard

Met 52G is a granular bioinsecticide containing the spores and mycelial tissues of the fungus *Metarhizium anisopliae* var. *anisopliae* F52. It is an approved insecticide for black vine weevil and other soil borne insects in ornamental plant production. As this product does not contain any chemical insecticide it is unlikely for insects to develop resistance. Although we cannot expect 100% control on it's own, MET 52 is highly effective as part of an IPM Program. The fungus multiplies on the soil organic matter and when an insect contacts the spores they germinate and begin to grow on the cuticle of the insect. Once the cuticle is penetrated MET 52 continues to reproduce inside the insect causing death.

Working in conjunction with MET 52 is another mycoinsecticide called Botanigard. The spores of *Beauveria bassiana* strain GHS work by direct contact with the insect pests whiteflies, thrips and aphids. Also compatible with IPM programs and beneficial insects. Another tool to prevent resistance to chemicals.

The third part to the insect control is the use of nematodes to aid in the control of soil borne insect pests. At times pests lay their eggs in or near the crown area of fleshy plants that may not be in contact by MET 52 in the soil. This is an example when nematodes should be used as a drench to target those pests.

Incorporate MET 52 into the potting media so that any insects entering the pots through drain holes will be infected by the spores. Supplement this with an addition of nematodes to control insects other than weevils. Start your nematode applications early in

the growth cycle to control the youngest pest stages possible. MET 52 does not damage nematodes.

Apply nematodes when the pot temperatures are at least 12C and below 28C and maintain a moist media so the nematodes can move throughout the media in the water. The species of nematode you choose will control certain pests better than others. *Steinernema feltiae* are effective against the larval stage of fungus gnats and the adult or pupal stages of western flower thrips, *Heterorhabditis bacteriophora* target black vine weevil and other beetle grubs, *Steinernema carpocapsae* are useful against shorefly larvae as well as weevil.



Monitor for pests that may have reached the adult stages by using yellow sticky cards. If you see adults then it is time to use Botanigard to target those pests that are now in the plant canopy. As it is a contact spray, thorough coverage is key. Apply the WP version as a foliar spray to target the thrips, whiteflies or aphids. Use the EC version for soil drenches. A weekly application program can prevent insect population explosions and provide a level of control equal to or better than conventional chemical programs. Botanigard is especially useful for chemical resistant insects such as the Q-biotyoe whitefly.

Botanigard is the only option to control thrips without damaging the beneficials. Botanigard works synergistically with predatory mites as it targets the older adults and larger thrips instars while the predatory mites take care of the the first instar. Same is true with whitefly parasites. Botanigard can be sprayed over top of the parasitic wasps as it is generally harmless. Botanigard may reduce predatory bug populations so do not spray after the introduction of *Orius* spp, *Delphastus* spp, or *Aphidamia* spp.

With careful planning and application schedules, pest populations can be effectively controlled with the combined use of MET 52, Botanigard and nematodes. Contact TerraLink for ordering and more information.