

# Cannabis & Hemp

NATURAL AND ORGANIC IPM SOLUTIONS FOR GROWERS



SOIL HEALTH  
& NUTRITION



BIOLOGICAL  
PEST CONTROL



INSECTICIDES &  
DISEASE CONTROL





## welcome to our green revolution

ARBICO Organics has worked diligently to curate a selection of products that we believe will best serve our cannabis customers. Whether you are cultivating medicine or for recreation, we believe that non-synthetic inputs are the first step on the path to growing your best. From predatory insects to soil enhancers, ARBICO has just what you need to elevate your grow.

Our team of Biocontrol consultants is standing by with vast knowledge to assist you from seed to harvest. Let ARBICO support your best grow ever.

With appreciation,

**Your ARBICO Organics Team**

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***Providing over  
forty-five years  
of environmental  
stewardship  
and service  
to our customers.***

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### HOW TO CONTACT US:

**800-827-2847**

**www.arbico-organics.com  
customercare@arbico.com**

**OFFICE & STORE HOURS:  
Monday - Friday: 8:00AM - 4:30PM  
(Arizona Time)**

### OUR PROMISE



Guaranteed Live Delivery



Customer Service



Commitment to Quality



<https://www.facebook.com/ARBICO.Organics>



<https://www.instagram.com/arbicoorganics/>



<https://arbico-organics.blogspot.com>



<https://www.youtube.com/user/ArbicoOrganics>



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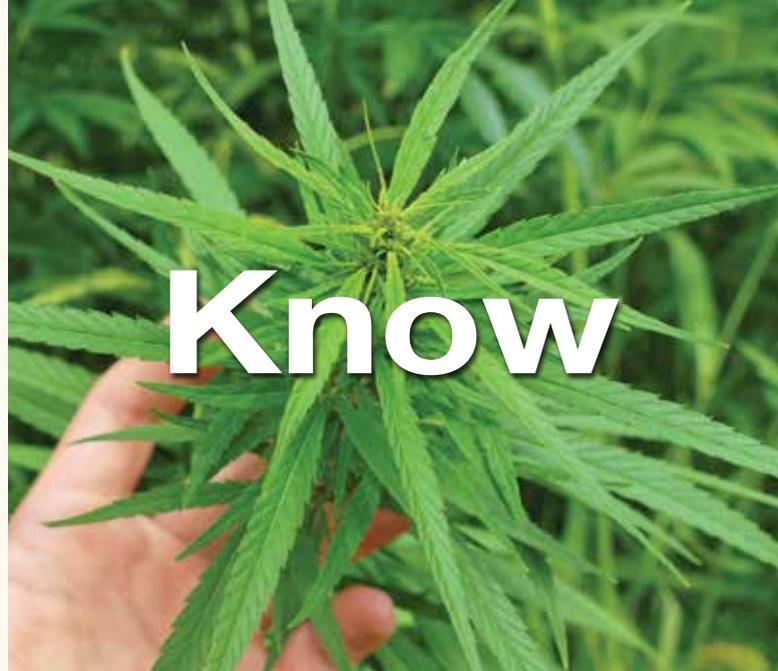
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### TRAPPING/MONITORING

Early and correct identification of pests is a key to determining the best strategy for further action. Important information is gathered during inspection and should be consistently recorded in order to gather all pertinent information about the pest.



# Know



# Your



### IDENTIFICATION

Accurately identifying which specific pest(s) you need to control is critical in determining the proper treatment protocol. For increased accuracy, use a microscope or loupe, or phone adapter such as Active Eye. Document plant symptoms or visual damage. Often multiple pests can be present.



### ENVIRONMENT

Predatory insects, like many living things, have requirements for living environments. Optimal temperature and humidity along with the preferred food source ensures predators are performing at their best. Select the predatory insect or mite best suited to your temperature and humidity ranges. Conditions outside the optimal range for the predator may compromise their effectiveness.



# Grow

## POWERFUL PEST CONTROL



The Assassin Bug is a hardworking predator that feeds in all life stages. Great for greenhouse and indoor cultivations with wide temperature range activity and varied pests. Free Shipping!

### ADVANTAGES

- Predatory in all life stages
- Wide variety of pests consumed
- Active in high temperatures/low humidities
- Not attracted to artificial light



### Eggs

Assassin Bugs are delivered as egg clusters. Monitor for hatching up to 6 days.



### Nymphs

Once hatched, Assassin Bug nymphs are visible and more easily monitored. Their two month life-span provides continuous control.



### Adults

Assassin Bugs produce a resin on their legs and rostrum that increases ability to capture prey. Once captured, Assassin bugs pierce their prey with their rostrum and inject a digestive enzyme. This allows *Zelus* to kill insects much larger than themselves.

## Assassin Bug - *Zelus renardii*



**These Voracious Ambush Predators Will Stay In Your Crops & Devour A Wide Variety Of Pest Insects!**

**TARGET:** Leafhoppers, aphids, early instar caterpillars, flies, mites in conjunction with mite predators, and most other pests.



**DESCRIPTION:** These hardworking ambush predators are an excellent addition to any growing area, large or small. Feasting on a variety of pests, assassin bugs stay put in order to knock out an infestation. With an approximate two-month lifespan, these generalist predators will live, eat and reproduce in the area of release. *Zelus* start eating immediately after hatching, and by the second instar they produce a resin on their legs, which turns them into a walking sticky trap. Once captured, their prey is pierced with their rostrum and a digestive enzyme is injected into the prey and the insect is quickly killed. This method of predation allows for *Zelus* to take out prey much larger than themselves. These generalist predators are voracious and can be used efficiently in gardens, fields, orchards and greenhouses.

**SUGGESTED USE** (Depending upon level of infestation): Use 500 eggs in a 2,000-3,000 sq. ft. area every 2-3 weeks. Release preventively or at the first sign of an infestation. For heavy infestations, release 500-1,000 eggs weekly in no more than 2,000 square feet. Release 5-10 thousand eggs biweekly per acre. Shipped as eggs, assassin bugs will typically hatch in under a week.

**Temperature:** 55-110°F

**Relative Humidity:** 10-75%

<b>1000105</b>	≈250 Eggs	<b>\$25.00</b>
<b>1000106</b>	≈500 Eggs	<b>\$40.00</b>
<b>1000107</b>	≈1,000 Eggs	<b>\$65.00</b>

Larger sizes available.

\*FREE SHIPPING in the contiguous 48 states. Ships Monday - Thursday via 2nd Day.



## Aphid Control



### DAMAGE

Each plant reacts differently to aphid infestations. Twisted, curled or swollen leaves and/or stems, decreased growth rates, mottled leaves, leaf yellowing or browning, stunted growth, wilting, low yields and death. Aphids can also vector bacterial and viral diseases adding to plant weakness.



### CONTROL

- Monitor & Trap: Yellow sticky traps (or ribbons for rows) to monitor infestation levels.
- Biological Controls: Introduce Green lacewing preventatively to build a colony of predacious larvae. Minute Pirate Bug (*O. insidiosus*) for quicker control, or an Aphid Predator (*A. colemani*, *A. ervi*) for targeted control.
- Insecticides: Rotating applications of sprays including Neem, Insecticidal soap, *Beauveria bassiana*, pyrethrins and more depending on pest thresholds and other environmental factors.

## Minute Pirate Bug - *Orius insidiosus*

Excellent General Predator In Field Crops & Greenhouses.

**TARGET:** Thrips, whiteflies, spider mites, aphids, psyllids, small caterpillars, insect eggs and others.

**DESCRIPTION:** Minute Pirate Bugs (*Orius spp.*) also known as flower bugs, are one of the most common general predators in field crops. Their diet consists of a variety of small pests. They are also known to attack adult thrips.

**SUGGESTED USE** (Depending upon level of infestation): Sold as adults. For maintenance, release 1 to 2 *Orius* per plant in greenhouses or 1 to 4 *Orius* per plant in hot spot areas outdoors. When treating a serious whitefly, aphid, thrips or other pest infestation, we recommend releasing up to 500 *Orius* per 250 sq. ft. area. For field crops, we recommend releasing between 100 and 2,000 *Orius* per acre, depending on the level of infestation.

**Temperature:** 64-82°F

**Relative Humidity:** Moderate ≈60%

<b>1117001</b>	≈500 Count	<b>\$53.00</b>
<b>1117003</b>	≈1,000 Count	<b>\$88.00</b>
<b>1117004</b>	≈2,000 Count	<b>\$154.00</b>

**Overnight Shipping Required**



## Green Lacewing - *Chrysoperla spp.*



Referred To As "Aphid-Lions," These Generalists Have Amazing Dispersal Abilities!

**TARGET:** Aphids, mealybugs, spider mites, leafhopper nymphs, moth eggs, scale thrips, whiteflies and more.

**DESCRIPTION:** Green lacewing are available in all three life stages: egg, larva and adult. Green lacewing larvae paralyze their prey with venom and then draw out the body fluids of the pest into their large hollow jaws. Each lacewing larva will devour 200 or more pests or pest eggs a week during their two to three week developmental period.



**Temperature:** Minimum: 60°F Best: 75-90°F **Relative Humidity:** 30-50%  
**Release Rate:** Every 7-10 days

### GREEN LACEWING EGGS:\*

<b>1110011</b>	≈5,000 Eggs	<b>\$27.00</b>
<b>1110016</b>	≈10,000 Eggs	<b>\$37.80</b>
<b>1110012</b>	≈25,000 Eggs	<b>\$75.00</b>
<b>1110013</b>	≈50,000 Eggs	<b>\$123.75</b>
<b>1110100</b>	≈5,000 Eggs on Cards	<b>\$30.00</b>
<b>1110102</b>	≈10,000 Eggs on Cards	<b>\$50.00</b>
<b>1110105</b>	≈25,000 Eggs on Cards	<b>\$100.00</b>

### GREEN LACEWING LARVAE:

<b>1110005</b>	≈400 Larvae in Hex Frame	<b>\$27.00</b>
<b>1110010</b>	≈1,000 Larvae in Bottle	<b>\$26.00</b>
<b>1110030</b>	≈5,000 Larvae in 5 Liter Bag	<b>\$105.00</b>
<b>1110032</b>	≈10,000 Larvae in Bucket	<b>\$180.00</b>

### GREEN LACEWING ADULTS:

<b>1110006</b>	≈100 Adults	<b>\$50.00</b>
<b>1110004</b>	≈250 Adults	<b>\$90.00</b>
<b>1110007</b>	≈500 Adults	<b>\$160.00</b>
<b>1110019</b>	≈1,000 Adults	<b>\$180.00</b>

**SUGGESTED USE** (Depending upon level of infestation):

Eggs	Larvae
Gardens & Greenhouses	Gardens & Greenhouses
≈1k-2k Eggs/1,000 sq. ft.	≈2-4/sq. ft.
Farms	Farms
≈2,000-40,000/Acre	≈1,000-2,000/Acre
Adults	
Gardens & Greenhouses	Farms
≈1-3/sq. ft., 100/Tree	≈200-500/Acre

**Weekly Programs and Discounts Available**  
**Larvae & Adults Require OVERNIGHT Shipping**

\*FREE SHIPPING in the contiguous 48 United States. Quantities of 1,000-25,000 eggs ship via USPS Priority only. Quantities of 50,000-250,000 ship via FedEx 2nd Day Air only. Expedited shipping available for an additional fee.

FREE SHIPPING does not apply to Green Lacewing Adults, Green Lacewing Larval Frames and Green Lacewing Larvae.

## Aphid Predator - *Aphidoletes aphidimyza*

**This Aphid Predator Attacks & Feeds On Over 60 Different Species Of Aphids.**

**TARGET:** Over 60 different aphids, including green peach aphids (*Myzus persicae*) and hemlock woolly adelgid (*Adelges tsugae*).

**DESCRIPTION:** Predacious to aphids, these insects will inject a paralyzing toxin into pest's legs and feed on aphid body contents, causing eventual death.

**SUGGESTED USE** (Depending upon level of infestation): Apply to existing infestations weekly, until pests subside. Use ≈1-3/10 sq. ft., ≈2-3/10 sq. ft. or ≈4,500/acre.

**Temperature:** Warm 64-77°F      **Relative Humidity:** Moderate ≈70%

<b>1101001</b>	≈1,000 Pupae	<b>\$60.00</b>
<b>1101002</b>	≈1,000 Pupae in 4 x 250 Blister Packs	<b>\$65.00</b>
<b>1101004</b>	≈2,000 Pupae	<b>\$90.00</b>
<b>1101005</b>	≈10,000 Pupae	<b>\$250.00</b>

**Overnight Shipping Required**



*Aphidoletes aphidimyza*

## Aphid Parasite - *Aphidius colemani*

**Exceptional In Greenhouses Producing Vegetables & Ornamentals.**

**TARGET:** Aphids, especially melon and cotton aphids (*Aphis gossypii*).

**DESCRIPTION:** These tiny (1/8") parasitic wasps specifically target aphids to provide food and a place to oviposit. The adults respond to alarm signals from plants to locate the aphids and, once there, they feast on the honeydew produced by the aphids. The females will then lay their eggs inside aphid nymphs. The larvae will hatch and devour the aphid from inside, turning it into a mummy. The parasites are shipped to you in this stage; simply place them where the infestation is. Once mature, the adult wasp will chew its way out of the mummy and begin hunting aphids.

**SUGGESTED USE** (Depending upon level of infestation): Apply to existing infestations weekly, until pests subside. Use ≈1-8/1 sq. yd. or ≈500-3,000/acre.

**Temperature:** 70-77°F      **Relative Humidity:** High ≈80%

<b>1101302</b>	≈500 Mummies	<b>\$43.00</b>
<b>1101301</b>	≈1,000 Mummies	<b>\$54.00</b>
<b>1101300</b>	≈1,000 Mummies in 10 x 100 Blister Packs	<b>\$56.00</b>
<b>1101303</b>	≈5,000 Mummies	<b>\$189.00</b>
<b>1101305</b>	≈5,000 Mummies in 50 x 100 Blister Packs	<b>\$195.00</b>
<b>1101304</b>	≈10,000 Mummies (2 x 5,000)	<b>\$340.00</b>

**Overnight Shipping Required**



*Aphidius colemani*

## Aphid Parasite - *Aphelinus abdominalis*

**These Ravenous Predators Will Eat & Parasitize Aphid Nymphs!**

**TARGET:** Aphids, including potato (*Macrosiphum euphorbiae*), foxglove (*Aulacorthum solani*), green peach (*Myzus persicae*), California laurel (*Euthoracaphis umbellulariae*), cotton (*Aphis gossypii*), melon (*Aphis gossypii*), bird cherry-oat (*Rhopalosiphum padi*), cereal (*Sitobian avenae*), and alfalfa aphids (*Acyrtosiphon pisum*).

**DESCRIPTION:** Not great fliers, these parasitic wasps nevertheless can hunt down and destroy large numbers of aphids. These predators will not only lay their eggs in aphid nymphs, they will eat those that they don't parasitize. This secondary method of killing has a powerful effect on the aphid population and provides females with additional protein to develop more eggs. As the larvae matures inside the nymph, they feed on it, turning it into a mummy. The parasites are shipped in this stage; simply place them where the infestation is. The mature adult will chew a hole in the back of the mummy and emerge. This species is better able to handle high temperatures than the *Aphidius* species.

**SUGGESTED USE** (Depending upon level of infestation): Apply before the onset of infestation. Use ≈250/5,000 sq. ft. or ≈1,000-4,000/acre.

**Temperature:** 70-77°F      **Relative Humidity:** Low-High ≈60-80%

<b>1101101</b>	≈250 Mummies	<b>\$83.00</b>
<b>1101103</b>	≈1,000 Mummies	<b>\$235.00</b>

**Overnight Shipping Required**



*Aphelinus abdominalis*

## Aphid Parasite - *Aphidius ervi*

**This Non-Stinging Parasitic Wasp Attacks Larger Aphid Species.**

*Image Citation: Alex Wild*

**TARGET:** Aphids, especially potato (*Macrosiphum euphorbiae*), glasshouse potato (*Aulacorthum solani*), green peach (*Myzus persicae*), foxglove (*Aulacorthum solani*) and pea aphids (*Acyrtosiphon pisum*). Also attacks greenbug/wheat (*Shizaphis graminum*), yellow rose (*Rhodobium orientis*), English grain (*Sitobion avenae*) and other aphids.

**DESCRIPTION:** These mini-wasps (1/8") are vigorous fliers and will aggressively seek out aphid populations, no matter how small. Once they find the aphids, they feed on the honeydew produced by the aphids and lay their eggs inside the aphid nymphs. As the larvae feed on the nymphs from the inside, the nymph turns into a mummy. The parasites are shipped to you this stage; simply place them where the infestation is. Once mature, the adult wasp will chew its way out of the mummy and begin its own search for aphids.

**SUGGESTED USE** (Depending upon level of infestation): Apply to existing infestations weekly, until pests subside. Use ≈1-3/10 sq. ft. or 1-8/sq. yd.

**Temperature:** 64-75°F      **Relative Humidity:** Moderate ≈70%

<b>1001001</b>	≈250 Mummies	<b>\$65.00</b>
<b>1001002</b>	≈500 Mummies	<b>\$100.00</b>
<b>1001003</b>	≈1,000 Mummies	<b>\$150.00</b>
<b>1001004</b>	≈1,000 Mummies in 10 x 100 Blister Packs	<b>\$155.00</b>
<b>1001005</b>	≈5,000 Mummies	<b>\$550.00</b>

**Overnight Shipping Required**



*Aphidius ervi*

# Guard Your Grow

**Portable, Convenient, On the Spot  
Detection!**



**Active Eye 60X Clip-On Phone Microscope**  
2000200 \$10.49

**Active Eye Microscope 100X**  
2000205 \$21.99

## Selection Factors

### INFESTATION

To determine your plan of action, it is critical to know the level and spread of the pest infestation. For high or established infestations, a knockdown spray may be necessary PRIOR to introducing predatory insects or mites. Know your state regulations and consider choosing a non-synthetic or biorational solution (see pages 33-41).

### TIMING

Timing is everything. Applying compatible or soft sprays can help to bring pest populations down to a level in which predator introductions can thrive. When using sprays make sure there are no residual effects that will harm predators. Many biological sprays can be used in conjunction with predators, and cause no harm to their populations.

### DELIVERY

Predatory mites are available in several types of delivery methods, including bulk tubes and bags, sachets, mini sachets and sachets on sticks. Bulk deliveries are cost-effective and good for targeting hot spots. Sachets offer continuous release over time for preventative and ongoing control within the plant canopy.

### CONTINUITY

A single application of predatory insects will likely not provide the rate of consumption to compete with rapid pest reproduction rates. Repeated applications on a schedule allows for introduction of additional predators while others transition through life stages. Preplanned insect programs allow for growers to maintain consistent application schedules, avoiding surprise breakouts.

## Damage & Symptoms



### Spider Mites

Webbing, leaf edges curling or burned, slowed growth, speckled, leathery golden leaves.



### Russet Mites

Leaflets curl, chlorosis, necrosis, lower leaves dry out, leaves look bronze in color.



### Broad Mites

Flowers can wither, distorted leaves, leaves curled inward, dark & streaked foliage, compact leaf masses.

Mite Predator Application			
Mite Predator Species	Ideal Conditions	Application Rate	Notes
<i>Amblyseius andersoni</i>	43-100°F (68-77°F to hatch)	1 sachet per plant or tray, 3-5 mites per sq. ft.	Best used preventively.
<i>Amblyseius swirskii</i>	70-95°F, 70% RH	10 per sq. ft. biweekly - weekly 1 sachet per plant.	Active down to 60°F. Very voracious predator. Eliminate excess webbing or honeydew.
<i>Galendromus occidentalis</i>	75-110°F, 35-90% RH	1,000 per 500 sq. ft. indoors, 2,000-5,000 sq. per acre biweekly	Best for warm and dry climates. If used indoors, humidity must be higher than 30%.
<i>Amblyseius cucumeris</i>	68-77°F, 66-70% RH	5-10 per sq. ft. 1-2 sachets per plant	Best used preventatively. Release before signs of pest infestation.
<i>Neoseiulus (=Amblyseius) californicus</i>	70-90°F, 40-65% RH	1-2 sachets or 1-4 mites per plant	Use weekly until infestation subsides.
<i>Neoseiulus (=Amblyseius) fallacis</i>	60-85°F, 60-80% RH	2-5 per sq. ft.	Excellent dispersal ability. Works well for broad and russet mites.
<i>Phytoseiulus persimilis</i>	68-90°F, 60-90% RH	2+ mites per sq. ft. every 7-14 days	Can compete with <i>cucumeris</i> . Use 48 hours after knockdown spray.
<i>Feltiella acarisuga</i>	68-80°F, 50-80% RH	1 per sq. ft. weekly, 3 weeks min.	Eggs and larvae cannot survive temps above 86°F and below 30% RH
<i>Stethorus punctillum</i>	67-90° F, 30-90% RH	3-4 per 10 sq. ft., 100-200 per hot spot weekly for 4 weeks	Larvae and adults feed on mites. For best results use with <i>persimilis</i> .

# MITE CONTROL

## Mite Predator - *Amblyseius andersoni*

**Great For Pre-Emergent Control Of Pest Mite Infestations!**

**TARGET:** Various pest mites including broad mites, cyclamen mites, two-spotted spider mites, red spider mites, tomato russet mites and rust mites.

**DESCRIPTION:** This predatory mite is less than 1mm long and light brown. Adult females lay about 35 eggs in a lifetime, arranging eggs onto leaf hairs. This predatory mite feeds on all stages of pest mites, thrips, pollen and honeydew.

**SUGGESTED USE (Depending upon level of infestation):** For best results, apply as a preventative treatment of mite infestations. Sachets allow for controlled release of mites over 4-6 weeks. Apply at a rate of 1-2 mites per sq. ft. or 1 sachet per plant. Place sachets within plant canopy. Use sachets on sticks at 1 per propagation tray or where canopy cannot hold sachet on hook. Replace sachets every four weeks for continued control.

**Temperature:** Moderate 42-100°F **Relative Humidity:** High if in higher temps.

**BULK SIZES:**

<b>1101324</b>	≈25,000 in Tube	<b>\$87.50</b>
<b>1101327</b>	≈50,000 in 1 Liter Bottle	<b>\$150.00</b>
<b>1101321</b>	≈125,000 in 5 Liter Bag	<b>\$312.50</b>

**CONTROLLED RELEASE:**

<b>1101323</b>	≈25,000 in 200 Mini Sachets w/Hooks	<b>\$160.00</b>
<b>1101350</b>	≈25,000 in 200 Mini Sachets on Sticks	<b>\$175.00</b>
<b>1101325</b>	≈62,500 in 250 Sachets w/Hooks	<b>\$225.00</b>
<b>1101355</b>	≈125,000 in 1,000 Mini Sachets on Sticks	<b>\$720.00</b>
<b>1101322</b>	≈125,250 in 6 x 328 ft. Strips of Sachets	<b>\$670.00</b>

**Overnight Shipping Required**



*Amblyseius andersoni*

## Spider Mite Destroyer - *Feltiella acarisuga*

**We Recommend This Predator When Spider Mite Infestations Are Widespread.**

**TARGET:** Two spotted spider mites, carmine spider mites, European red mites; various mites.

**DESCRIPTION:** The larvae of this tiny gall-midge feeds on two-spotted spider mites and various other species of spider mites. Recommended to be used with *P. persimilis* when spider mite infestations are severe to rapidly knock back the pest mites. *Feltiella* works best on plants that have hairy stems. Adults do not prey on spider mites, but search for colonies and deposit eggs next to them. Eggs hatch in 2 days and larvae feed on all stages of spider mites for 4-6 days. The entire life cycle is about 15 days.

**SUGGESTED USE (Depending upon level of infestation):** For light infestations, introduce <1/1,000 sq. ft. or 500/acre every 7 days, for at least 3 weeks. For heavy infestations, introduce 2-3/1,000 sq. ft. or 1,000/acre every 7 days, for at least 3 weeks.

**Temperature:** Moderate 60-77°F **Relative Humidity:** High 50-90%

<b>1155701</b>	≈250 Count	<b>\$144.00</b>
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**Overnight Shipping Required**



*Feltiella acarisuga*

## Mite Predator - *Neoseiulus (=Amblyseius) californicus*

**Good For Areas Where Temperatures Fluctuate Greatly Such As Deserts.**

**TARGET:** Various spider mites, cyclamen mites, broad mites and russet mites.

**DESCRIPTION:** This tiny, ivory, pear-shaped predatory mite feeds on a variety of pests on crops including: cucumbers, tomatoes, strawberries, tropical foliage plants, and greenhouse roses. Although adults consume prey at a relatively slow rate of about one egg per day, they can survive longer under starvation conditions. During their lifetime of about 20 days, females will lay approx. 1-3 eggs per day. Eggs hatch within a few days and adulthood is reached in about 4-12 days.

**SUGGESTED USE (Depending upon level of infestation):** Use ≈1,000 per 4,500 sq. ft. in greenhouses to treat for broad mite. Use ≈10,000 per acre to treat for cyclamen mites on strawberries. Use weekly until infestation subsides.

**Temperature:** Warm 50-105°F **Relative Humidity:** 40-80%

**BULK SIZES:**

<b>1151213</b>	≈2,000 Count	<b>\$43.00</b>
<b>1151209</b>	≈5,000 Count	<b>\$65.50</b>
<b>1151210</b>	≈10,000 Count (2 x 5,000)	<b>\$106.00</b>
<b>1151212</b>	≈25,000 Count	<b>\$128.00</b>

**CONTROLLED RELEASE W/HOOKS:**

<b>1151216</b>	≈10,000 - 100 Sachets w/Hooks	<b>\$80.00</b>
<b>1151271</b>	≈25,000 - 100 Sachets w/Hooks	<b>\$85.00</b>
<b>1151215</b>	≈25,000 - 200 Sachets w/Hooks	<b>\$175.00</b>
<b>1151217</b>	≈50,000 - 500 Sachets w/Hooks	<b>\$270.00</b>
<b>1151276</b>	≈62,500 - 250 Sachets w/Hooks	<b>\$135.00</b>
<b>1151277</b>	≈125,000 - 500 Sachets w/Hooks	<b>\$250.00</b>
<b>1151278</b>	≈125,000 - 1,000 Sachets w/Hooks	<b>\$750.00</b>
<b>1151279</b>	≈250,000 - 500 Sachets w/Hooks	<b>\$350.00</b>

**CONTROLLED RELEASE ON STICKS:**

<b>1151295</b>	≈25,000 - 200 Sachets on Sticks	<b>\$190.00</b>
<b>1151296</b>	≈125,000 - 1,000 Sachets on Sticks	<b>\$720.00</b>

**CONTROLLED RELEASE-SPECIALTY:**

<b>1151292</b>	≈25,000 - 100 Gemini Sachets	<b>\$190.00</b>
<b>1151290</b>	≈125,000 - Bugline - 6 x 328 ft. Sachet Strips	<b>\$625.00</b>

**Overnight Shipping Required**



*Neoseiulus (=Amblyseius) californicus*

### Sachets

Sachets are available as Hooks, Sticks, Gemini and Bugline. Find the option that works right for your needs.



## Mite Predator - *Neoseiulus (=Amblyseius) fallacis*

**An Excellent Mite Predator For Control Of Many Different Types Of Mites.**

*Image Citation: Photo by Dr. Art Agnello, Cornell University*

**TARGET:** Two spotted spider mites, broad mites, cyclamen mites, hemp russet mites; various mites.

**DESCRIPTION:** This predatory mite effectively suppresses cyclamen mites in strawberry fields, broad mites in greenhouse crops, European red mites and two-spotted spider mites in orchards, spider mites on roses and vegetable crops in greenhouses and general mite problems on mint and hops in northern climates. Eggs and nymphs are difficult to see as they are small and almost transparent. Adults are pear-shaped and ivory until feeding, when they take on the red or brown coloration of their prey. Adult females consume around 2-16 pest mites per day and lay ≈20-60 eggs during a 14-60 day life-cycle. The transition from egg to adult stage takes about 7-9 days.

**SUGGESTED USE** (Depending upon level of infestation): Good for cold climates! Use preventatively; over-winters and sustains on pollen. Release at the start and end of the season. Use ≈1,000 per 4,500 sq. ft. or 10,000 per acre.

**Temperature:** Moderate 50-80°F **Relative Humidity:** Minimum 50%

<b>1151400</b>	≈500 Count	<b>\$38.00</b>
<b>1151401</b>	≈1,000 Count	<b>\$52.00</b>
<b>1151402</b>	≈2,000 Count	<b>\$98.00</b>
<b>1151404</b>	≈10,000 count	<b>\$240.00</b>

**Overnight Shipping Required**



## Mite Predator - *Phytoseiulus persimilis*

**The Mite Predator With The Highest Consumption & Dispersal Rate.**

*Image Citation: All rights reserved to BioBee Sde Elyahu Ltd.*

**TARGET:** Two spotted spider mites and various other mites.

**DESCRIPTION:** These predatory mites have high consumption rates, feeding on approx. 5-20 pests and pest eggs per day! Females will lay about 60 eggs throughout their 50-day lifespan. They will not enter a diapause stage in enclosed or greenhouse settings; making them active year round. Adults will begin feeding as soon as they are applied.

**P. persimilis PLUS** is reared in an innovative way to include mobile mites (adults and juveniles) as well as eggs. *P. persimilis* PLUS arrives pale and changes to orange/red after predation begins. Adults begin feeding upon dispersal. Eggs can mature in about a week (at temps between 70-80°F). The variety of life stages allow for both immediate and ongoing control as the mites mature.

### **P. persimilis PLUS Sachets**

PLUS Controlled Release sachet mites emerge between 8 -12 days after application. Best for preventative use. PLUS RAPID Release sachets are used for hot spot treatment with emergence around 3-5 days.



## Spider Mite Destroyer - *Stethorus punctillum*

**Predatory In Both Larval & Adult Stages. Consumes All Life Stages Of Spider Mites.**

**TARGET:** Two spotted spider mites, European red mites, spruce spider mites, southern red mites; various mites.

**DESCRIPTION:** Using smell, this tiny ladybug is an effective locator and as an adult will consume more than 40 mites per day. Females lay up to 15 eggs per day. Development to the adult stage takes around 18 days at a temperature of 70°F and the total lifespan of the predator is about 9 weeks. They are known to survive temperatures over 100°F in field crops.

**SUGGESTED USE** (Depending upon level of infestation): Use 100 adults per 300 sq. ft. of infested area. Release adult beetles into mite infested areas and look for signs of reproduction (larvae, pupae, and adults) after four weeks. This predator is more mobile than spider-mite predators (predatory mites) but takes longer to establish, so releases of spider-mite predators should also be made into mite infested areas.

**Temperature:** Moderate 73-77°F **Relative Humidity:** High 60%

<b>1113300</b>	≈50 Count	<b>\$80.00</b>
<b>1113301</b>	≈100 Count	<b>\$105.00</b>

**Subject to seasonal availability.**

**Overnight Shipping Required**



**SUGGESTED USE** (Depending upon level of infestation):

Level/Type	Bulk	Sachets
<b>Low Infestation</b>	1-3 Mites per sq.ft.	1 Controlled Release Sachet per 50 sq.ft.
<b>Moderate Infestation/ Speckling</b>	5+ Mites per sq.ft.	1 Rapid Release Sachet per 20 sq.ft.
<b>Webbing/Outbreak</b>	10+ Mites per sq.ft. after knockdown/cleaning	1 Rapid Release Sachet per 10 sq.ft.
<b>Outdoor Crops</b>	20,000 - 200,000 Mites per acre depending on infestation level	
<b>Clones</b>		1 Sachet per plant

**Temperature:** Moderate: 68-90°F **Relative Humidity:** High: 60-90%

### **P. PERSIMILIS PLUS BULK SIZES:**

<b>1151250</b>	PLUS ≈2000 Bottle	<b>\$23.00</b>
<b>1151251</b>	PLUS ≈4000 Bottle	<b>\$40.00</b>
<b>1151252</b>	PLUS ≈10,000 Bottle	<b>\$85.00</b>
<b>1151253</b>	PLUS ≈20,000 Bottle	<b>\$120.00</b>

### **P. PERSIMILIS PLUS CONTROLLED RELEASE:**

<b>1151235</b>	PLUS ≈5,000 in 50 sachets w/hooks	<b>\$50.00</b>
<b>1151236</b>	PLUS ≈10,000 in 100 sachets w/hooks	<b>\$95.00</b>
<b>1151230</b>	PLUS ≈25,000 in 250 sachets w/hooks	<b>\$225.00</b>
<b>1151231</b>	PLUS ≈50,000 in 500 sachets w/hooks	<b>\$387.50</b>

### **P. PERSIMILIS PLUS RAPID RELEASE:**

<b>1151245</b>	PLUS RAPID ≈5,000 in 50 sachets w/hooks	<b>\$50.00</b>
<b>1151246</b>	PLUS RAPID ≈10,000 in 100 sachets w/hooks	<b>\$95.00</b>
<b>1151240</b>	PLUS RAPID ≈25,000 in 250 sachets w/hooks	<b>\$225.00</b>
<b>1151241</b>	PLUS RAPID ≈50,000 in 500 sachets w/hooks	<b>\$387.50</b>

**Overnight Shipping Required**

## Thrips Control



### DAMAGE

Adult and larval stages of thrips feed on foliage and flowers causing extensive damage in a short time period. Stippling, silvering of the leaves, or discolored patches on the leaf surfaces, as well as the unique twisting they cause on new growth. Proactive control is important to limit risk of thrips vectoring disease through feeding.

### CONTROL

- Monitor & Trap: Blue or yellow sticky traps
- Biological Controls: Beneficial Nematodes and Thrips Predators
- Insecticides: PFR-97 20% WDG (*Isaria fumosorosea*), Neem or Azadiractin

## Thrips & Whitefly Predator - *Amblyseius swirskii*

For Use On A Variety Of Pest Mites, Thrips & Whiteflies.

**TARGET:** Western flower thrips, onion thrips, broad mites, hemp russet mites, glasshouse whiteflies, tobacco whiteflies or silverleaf whiteflies.

**DESCRIPTION:** These predacious mites feed on various pest insects in their developing adult stages, pollen and mold. They may consume about 10 thrips or whitefly larvae a day and up to about 20 whitefly eggs per day. They will not undergo diapause, and can be used in protected crops in cooler growing areas.

**SUGGESTED USE (Depending upon level of infestation):** Introduce before the onset of infestation, when temperatures are no lower than 60°F. Apply at a rate of 10 mites per sq. ft. every other week as needed, or apply continuous release sachets every 2-4 weeks. Use 1 sachet per plant, or 1 per 3 plants if canopy is touching. Use sachets on sticks during propagation or where canopy cannot support hooks. Not recommended for use on infestations in tomato crops.

**Temperature:** Moderate 77-85°F

**Relative Humidity:** 70%

### BULK SIZES:

1101312	≈25,000 in Tube	<b>\$68.00</b>
1101319	≈50,000 in Tube	<b>\$120.00</b>
1101311	≈125,000 in 5 Liter Bag	<b>\$240.00</b>
1101309	≈200,000 Bulk	<b>\$340.00</b>

### CONTROLLED RELEASE:

1101317	≈50,000 in 200 Mini Sachets w/Hooks	<b>\$140.00</b>
1101308	≈62,500 in 250 Mini Sachets w/Hooks	<b>\$170.00</b>
1101318	≈62,500 in 500 Mini Sachets on Sticks	<b>\$245.00</b>
1101306	≈125,000 in 500 Mini Sachets w/Hooks	<b>\$250.00</b>
1101316	≈125,000 in 1,000 Mini Sachets w/Hooks	<b>\$365.00</b>
1101314	≈125,250 in 6 x 328 ft. Strips of Sachets	<b>\$500.00</b>
1101315	≈250,000 in 1,000 Mini Sachets w/Hooks	<b>\$480.00</b>

**Overnight Shipping Required**

## Thrips Predator - *Amblyseius cucumeris*

These Beneficial Mites Consume Vast Quantities Of Thrips.

**TARGET:** Prefers greenhouse and western flower thrips. They will also eat spider mites, russet mites and pollen.

**DESCRIPTION:** Tan colored adult females lay about 35 small white eggs throughout their lifespan of about 30 days. During the 7-10 day nymph stage, predation begins. Adults will consume about 1 pest a day. Predators are shipped as adults.

**SUGGESTED USE (Depending upon level of infestation):** For best results, apply before onset of thrips infestation. For prevention, use at a rate of 10-20 mites per sq. ft. at weekly intervals. Use continuous release sachets at 1 per 3 sq. ft. for 3-6 weeks. Spot treat with 10-40 mites per sq. ft. weekly until infestation subsides. Monitor with blue sticky traps (see page 23-24).

**Temperature:** Moderate 66-80°F **Relative Humidity:** Moderate 65-72%

### BULK SIZES:

1152230	≈20,000 in Bran only	<b>\$22.00</b>
1152231	≈20,000 in Vermiculite only	<b>\$22.00</b>
1152207	≈25,000 in Bran/Vermiculite Mix	<b>\$30.00</b>
1152233	≈50,000 in Bran only	<b>\$47.00</b>
1152224	≈50,000 in Vermiculite only	<b>\$47.00</b>
1152204	≈50,000 in Bran/Vermiculite Mix	<b>\$45.00</b>
1152205	≈100,000 in Bran only	<b>\$60.00</b>
1152234	≈100,000 in Vermiculite only	<b>\$60.00</b>
1152235	≈250,000 in Bran only	<b>\$120.00</b>
1152223	≈250,000 in Vermiculite only	<b>\$120.00</b>
1152206	≈250,000 in Bran/Vermiculite Mix	<b>\$115.00</b>
1152209	≈500,000 in Bran/Vermiculite Mix	<b>\$200.00</b>

### CONTROLLED RELEASE W/HOOKS:

1152215	≈25,000 in 100 Mini sachets w/Hooks	<b>\$25.00</b>
1152219	≈125,000 in 500 Mini Sachets w/Hooks	<b>\$68.75</b>
1152201	≈200,000 in 200 Sachets w/Hooks	<b>\$90.00</b>
1152221	≈200,000 in 400 Mini Sachets w/Hooks	<b>\$80.00</b>
1152222	≈250,000 in 1,000 Sachets w/Hooks	<b>\$135.00</b>
1152228	≈500,000 in 500 Mini Sachets w/Hooks	<b>\$185.00</b>

### CONTROLLED RELEASE ON STICKS:

1152216	≈25,000 in 100 Mini Sachets on Sticks	<b>\$25.00</b>
1152225	≈125,000 in 500 Mini Sachets on Sticks	<b>\$105.00</b>
1152226	≈250,000 in 1,000 Mini Sachets on Sticks	<b>\$150.00</b>
1152227	≈500,000 in 2,000 Mini Sachets on Sticks	<b>\$280.00</b>

### CONTROLLED RELEASE-SPECIALTY:

1152203	≈300,000 in 300 GEMINI Sachets	<b>\$115.00</b>
1152220	≈1,600,000 in 6 x 525 ft. Strips of Sachets	<b>\$600.00</b>

**Overnight Shipping Required**



## Fungus Gnat Control



### DAMAGE

Sudden wilting, poor growth, chlorosis (yellowing), and foliage loss. Larval feeding can cause significant root damage and severely inhibit nutrient uptake.



### CONTROL

- Monitor & Trap: Use yellow sticky traps to kill reproducing adults. Gridded traps to monitor infestation level and effectiveness of controls.
- Cultural Controls: Avoid overwatering and correct drainage issues.
- Biological Controls: Sf Beneficial Nematodes for larval control, *S. scimitus* for larvae and pupae.
- Insecticides: Bti (*Bacillus thuringiensis israelensis*) can be used in conjunction with biological control for increased control. Drench with SNS 203 Soil Drench/Foliar Spray (pg. 31) for infestations of multiple soil pests.

## Fungus Gnat Predator - *Stratiolaelaps scimitus* (=Hypoaspis miles)

Stop Destructive Fungus Gnats & Thrips In Their Developing Soil Stages.

**TARGET:** Fungus gnats, western flower thrips, springtails, mold mites, spider mites, cactus root mealybugs, strawberry root weevils and black vine root weevils.



**DESCRIPTION:** This tiny brown mite naturally inhabits the top layer of soil where larvae and pupae dwell. Female predatory mites lay their eggs in soil and the nymphs and adults feed on pests.

**SUGGESTED USE** (Depending upon level of infestation): ≈5,000-10,000 mites treat approximately 1,000 sq. ft. Release ≈25,000-50,000/acre depending on level of infestation. Apply weekly until infestation subsides. Weekly release programs available. Please Call. Trap adult infestations using Blue Sticky Traps. Reinforce with applications of beneficial nematodes.

**Temperature:** Moderate 60-74°F **Soil Conditions:** Moist soil. Not too damp.

<b>1154000</b>	≈12,500 Count	<b>\$21.00</b>
<b>1154002</b>	≈25,000 Count	<b>\$30.00</b>
<b>1154005</b>	≈50,000 (2 x 25,000)	<b>\$50.00</b>
<b>1154010</b>	≈125,000 in 5 Liter Bag	<b>\$130.00</b>

**Overnight Shipping Required**

## Rove Beetle - *Dalotia coriaria* (=Atheta coriaria)

For Indoor Control Of Soil Dwelling Pests!

**TARGET:** Fungus gnats (sclerid flies), thrips and shore flies.

**DESCRIPTION:** "Rove beetles" will feed on small soil-dwelling pest larvae and eggs. Adults are a brown-black color, 3-4 mm long and winged. They are voracious in all stages and develop from egg to adult in about 21 days; passing through three larval instars prior to pupation and adulthood. Adults consume about 150 pest fungus gnat eggs per day. Compatible with *Stratiolaelaps scimitus* (=Hypoaspis miles). Winged adults have high dispersal and colonization rates and are not recommended for outdoor use.



**SUGGESTED USE** (Depending upon level of infestation): Use season-long, in covered crops such as ornamentals, cucumbers, strawberries and mushrooms. Apply directly to growing medium surface. Apply approx. 1-5 predators per sq. ft. For high infestation, increase application rate and consider pairing with another suitable predator or parasite like *S. scimitus*, beneficial nematodes, or specific mite predators.

**Temperature:** Moderate 55-80°F **Relative Humidity:** 50-80%

<b>1101330</b>	≈500 Adults	<b>\$54.00</b>
<b>1101331</b>	≈1,000 Adults	<b>\$78.00</b>
<b>1101332</b>	≈3,000 Adults	<b>\$170.00</b>
<b>1101334</b>	≈5,000 Adults	<b>\$250.00</b>

**Overnight Shipping Required**

## Control Fungus Gnat Larvae Using *Bacillus thuringiensis israelensis*

Include applications of Bti in your fungus gnat IPM plan. Bti works to control larvae, the stage fungus gnats are most damaging to plant roots.

It can be used in conjunction with Beneficial Nematodes and Fungus Gnat predators as part of an IPM plan. **For additional fungus gnat control solutions, see page 30.**



## Whitefly Control



### DAMAGE

Leaves to turn yellow, appear dry, or fall off plants.

Whiteflies excrete a sugary liquid called honeydew, so leaves may be sticky or covered with black sooty mold.



### CONTROL

- Monitor & Trap: Yellow sticky traps to kill reproducing adults and monitor infestation levels.
- Biological Controls: Early intervention with *E. eremicus*. Hot spot treatment with *D. catalinae*.
- Insecticide Sprays: *Beauveria bassiana* sprays for ongoing control with minimal impact on beneficials. Repeated spraying of neem or pyrethrins may be necessary for knockdown control.

## Whitefly Parasite - *Eretmocerus eremicus*

**Better Adapted To Higher Temperatures, Including Temperatures That Fluctuate Day & Night! Good For Desert Climates.**

**TARGET:** Greenhouse whiteflies (*Trialeurodes vaporariorum*), sweet potato whiteflies (*Bemisia tabaci*), silverleaf whiteflies (*Bemisia argentifolii*), and banded-winged whiteflies (*T. abutiloneus*) and others.



**DESCRIPTION:** The whitefly parasite (parasitoid) is a tiny wasp that hosts feeds and parasitizes the scale (nymphs) of whiteflies. The time from egg laying to adult emergence is approximately 22 days. Can be used with Green Lacewings.

**SUGGESTED USE** (Depending upon level of infestation): For prevention: use 1,000/10,000 sq. ft. Light infestations: 1,000/1,000 sq. ft. Heavy infestations: use 5,000/1,000 sq. ft. Hang squares with parasitized pupae on plant foliage at first sign of infestation. Order weekly for approximately 2-6 weeks until control is achieved. Call to set up your customized weekly program.

**Temperature:** Moderate 62-82°F **Relative Humidity:** Minimum 40%

**1000703** ≈5,000 in 20 x 250 Blister Packs **\$94.95**

**Overnight Shipping Required**

## Whitefly Parasite - *Encarsia formosa*



**Save Your Plants From The Ravages Of Destructive Whiteflies! Good For Greenhouses.**

**TARGET:** Greenhouse whiteflies (*Trialeurodes vaporariorum*), sweet potato whiteflies (*Bemisia tabaci*) and approximately 15 other species of whitefly.



**DESCRIPTION:** The whitefly parasite (parasitoid) is a tiny wasp that hosts feeds and parasitizes the scale (nymphs) of whiteflies. The time from egg laying to adult emergence is approx. 25 days. Can also be used with Green Lacewings.

**SUGGESTED USE** (Depending upon level of infestation): **For prevention:** Use 500-1,000/15,000 sq. ft. **Light infestations:** (less than 1 adult whitefly per 50-100 plants) Use 1,000-2,000/5,000-10,000 sq. ft. for minimum of 3 weeks or until control is achieved. **Heavy infestations:** Use 3,000/3,500 sq. ft. for a minimum of 3 weeks or until control is achieved. Hang squares with parasitized pupae on plant foliage at first sign of infestation. Order weekly for approximately 2-6 weeks until control is achieved. Please call to set up your customized weekly program.

**Temperature:** Moderate 76-85°F **Relative Humidity:** Moderate ≈50-70%

<b>1132001</b>	≈1,000 Count	<b>\$32.50</b>
<b>1132002</b>	≈3,000 Count	<b>\$46.00</b>
<b>1132003</b>	≈5,000 Count	<b>\$60.00</b>

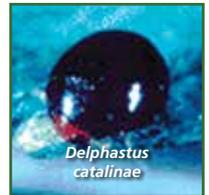
**2nd Day Shipping Required**

\*FREE SHIPPING in the contiguous 48 states. Ships via 2nd Day Only. Ships only on Monday, Tuesday and Wednesday.

## Whitefly Predator - *Delphastus catalinae*

**These Tiny Brown Beetles Consume Several Hundred Pests Daily!**

**TARGET:** Aphids, scale, thrips, and especially greenhouse and outdoor sweet potato whiteflies and other soft-bodied insect pests.



**DESCRIPTION:** Females lay ≈3-4 eggs daily and adults live for approximately one month. Adult beetles capture prey with their mandibles, inject paralyzing venom & feed on pest body fluids. Shipped as adults, they should be used at the first signs of infestation.

**SUGGESTED USE** (Depending upon level of infestation): Upon arrival, release at sundown. May be stored at temperatures between 50-60°F for 1-2 days. Can be combined with other whitefly parasites.

**Temperature:** Moderate 65-90°F **Relative Humidity:** High ≈70% & Higher

<b>1126001</b>	≈100 Count	<b>\$50.00</b>
<b>1126003</b>	≈200 Count	<b>\$90.00</b>
<b>1126002</b>	≈1,000 Count	<b>\$190.00</b>

**Overnight Shipping Required**

## Red Scale Parasite - *Aphytis melinus*

Use These Parasitic Wasps On A Variety Of Armored Scale Pests!

**TARGET:** California red scales, citrus red scales, oleander scales, San Jose scales, ivy scales, yellow scales and other armored scale varieties.

**DESCRIPTION:** Shipped as adults. Females lay their eggs in host scale. Larvae hatch inside host bodies and consume and kill scale. One adult will kill about 30 scale insects in one generation. Adult parasites live approximately 26 days.

**SUGGESTED USE** (Depending upon level of infestation): Release about 1-2 wasps per sq. ft. or about 5,000/acre. Release weekly and 1-3 applications are usually required depending upon infestation.

**Temperature:** Moderate 76-85°F **Relative Humidity:** Moderate ≈40-50%

1122001	≈10,000 Adults	<b>\$75.00</b>
1122002	≈25,000 Adults	<b>\$80.00</b>
1122003	≈50,000 Adults	<b>\$120.00</b>

**Overnight Shipping Required**



## Mealybug Destroyer - *Cryptolaemus montrouzieri*

These Tiny Ladybird Beetles Devour Pest Mealybugs In Both The Larval & Adult Stages.

Image Citation: Nijel Cruz

**TARGET:** Mealybugs, aphids, mites, thrips, whiteflies, and other soft-bodied insect pests.

**DESCRIPTION:** *Cryptolaemus* is a small dark brown ladybug with an orange head and tail (*elytra*). The larvae are up to 13 mm long and are white with a wax-like covering. The pupae are found around stems, the underside of leaves, greenhouse structures and other sheltered areas. Shipped as adults and most effective in severe infestations.

**SUGGESTED USE** (Depending upon level of infestation): 250-1,000/acre every 2 weeks, 2-3 releases. Use indoors and outdoors. Weekly release programs available. Please call.

**Temperature:** Low-High 64-81°F **Relative Humidity:** Moderate ≈70-80%

1114702	≈100 Adults	<b>\$77.00</b>
1114703	≈250 Adults	<b>\$110.00</b>
1114704	≈500 Adults	<b>\$210.00</b>
1114705	≈1,000 Adults (2 x 500)	<b>\$400.00</b>
1114710	≈5,000 Adults (10 x 500)	<b>\$1,200.00</b>

**Overnight Shipping Required**



## Universal Release Box

Provides An Easy Release Space And Protection For Your Beneficials.

**DESCRIPTION:** This simple 2" x 2" cardboard box will give your beneficials a place to safely hatch out of reach of most predators. Hang directly on plant, crop canopy, tree or pole in a shaded location close to the pest infestation that you are treating. Once they hatch, the beneficials will head over to where you need them.

**SUGGESTED USE:** Use in/on/near orchards, row crops, vineyards, nurseries, greenhouses, grow rooms, hydroponics, aquaponics, interiorscapes, container plants and houseplants.



1555501	Universal Release Box	<b>\$2.00</b>
1555510	Universal Release Box - Bundle of 10	<b>\$12.50</b>

## Integrated Pest Management (IPM)

Integrated Pest Management (IPM) is a process that is used to control pest populations while minimizing the impacts on people and the surrounding environment.

Focusing mainly on long-term pest prevention, a successful IPM program utilizes a combination of control methods including biological control, habitat manipulation, changes to cultural practices and use of resistant plant varieties.



**Planning & Record Keeping**



**Trap & Monitor**



**Cultural Controls**



**Mechanical Controls**



**Biological Controls**



**Natural Pesticides & Botanicals**

**Read more & find additional IPM resources at [arbico-organics.com](http://arbico-organics.com)**

## Aphids

**DAMAGE TO PLANTS:** Reduction in plant vigor, slow growth, leaf yellowing, wilting.

**SOLUTIONS:**

- Aphid Parasites - *Aphelinus abdominalis*, *Aphidius colemani* & *Aphidius ervi*
- Aphid Predator - *Aphidoletes aphidimyza*
- Green Lacewing - *Chrysoperla spp.*
- Minute Pirate Bug - *Orius insidiosus*
- Assassin Bugs - *Zelus renardii*
- *Beauveria bassiana*
- *Metarhizium brunneum*



## Budworms

**DAMAGE TO PLANTS:** Chewed, deformed or dying buds.

**SOLUTIONS:**

- Minute Pirate Bug - *Orius insidiosus*
- Assassin Bugs - *Zelus renardii*
- Moth Egg Parasites - *Trichogramma sp.*
- *Bacillus thuringiensis var. kurstaki (Btk)*



Image Citation: R.I. Reynolds Tobacco Company, Bugwood.org

## Cutworms

**DAMAGE TO PLANTS:** Missing or damaged seedlings cut right at soil level.

**SOLUTIONS:**

- NemAttack Beneficial Nematodes - *Steinernema carpocapsae (Sc)*
- Moth Egg Parasites - *Trichogramma sp.*
- *Bacillus thuringiensis var. kurstaki (Btk)*
- Cutworm Collars



## Broad Mites

**DAMAGE TO PLANTS:** Blistered/glossy leaves, distorted leaves, leaves curled inward, dark & streaked foliage, compact leaf masses.

**SOLUTIONS:**

- Mite Predator - *Neoseiulus (=Amblyseius) fallacis*, *Amblyseius andersoni*, *Neoseiulus (=Amblyseius) californicus* & *Amblyseius swirskii*
- Thrips Predator - *Amblyseius cucumeris*
- *Metarhizium brunneum*



## Flea Beetles

**DAMAGE TO PLANTS:** Jumping insects, chewed leaves, small white buckshot holes.

**SOLUTIONS:**

- Assassin Bugs - *Zelus renardii*
- *Beauveria bassiana*
- NemaSeek Beneficial Nematodes - *Heterorhabditis bacteriophora (Hb)*



## Fungus Gnats

**DAMAGE TO PLANTS:** Yellowing leaves, wilting plants, lack of root structure, damage may appear as nutrient deficiency.

**SOLUTIONS:**

- Fungus Gnat Predator - *Stratiolaelaps scimitus (=Hypoaspis miles)*
- Rove Beetle - *Dalotia coriaria*
- NemAttack Beneficial Nematodes - *Steinernema feltiae (Sf)*
- *Beauveria bassiana*
- *Bacillus thuringiensis israelensis (Bti)*



## Grubs

**DAMAGE TO PLANTS:** Yellowing leaves, wilting plants, lack of root structure, damage may appear as nutrient deficiency, non-existent roots.

**SOLUTIONS:**

- NemaSeek Beneficial Nematodes - *Heterorhabditis bacteriophora (Hb)*
- NemAttack Beneficial Nematodes - *Steinernema riobrave (Sr)*



## Mealybugs/Scale

**DAMAGE TO PLANTS:** Leaves may wilt, drop off easily, be discolored or reduced in size. Infested plants may have a distorted stem or growing points.

**SOLUTIONS:**

- Mealybug Destroyer - *Cryptolaemus montrouzieri*
- Mealybug Parasitoid - *Anagrus pseudococci*
- Red Scale Parasite - *Aphytis melinus*



## Root Aphids

**DAMAGE TO PLANTS:** Lack of vigor, withering leaves, yellowing leaves, signs of nutrient deficiency.

**SOLUTIONS:**

- NemAttack Beneficial Nematodes
  - *Heterorhabditis bacteriophora* (Hb)
  - *Steinernema feltiae* (Sf)
- Fungus Gnat Predator - *Stratiolaelaps scimitus* (=Hypoaspis miles)
- Rove Beetle - *Dalotia coriaria*
- *Beauveria bassiana*



## Russett Mites

**DAMAGE TO PLANTS:** Leaflets curl, chlorosis, necrosis, lower leaves dry out, leaves look bronze in color.

**SOLUTIONS:**

- Thrips Predator - *Amblyseius cucumeris*
- Mite Predator - *Amblyseius andersoni*, *Neoseiulus* (=Amblyseius) *fallacis*, *Neoseiulus* (=Amblyseius) *californicus* & *Amblyseius swirskii*
- Sulfur



## Slugs/Snails

**DAMAGE TO PLANTS:** Silver trail left on leaves, holes in leaves.

**SOLUTIONS:**

- Iron Phosphate



## Spider Mites

**DAMAGE TO PLANTS:** Webbing, leaf edges curling or burned, slowed growth, speckled, leathery golden leaves.

**SOLUTIONS:**

- Mite Predators - *Amblyseius andersoni*, *Phytoseiulus persimilis*, *Neoseiulus* (=Amblyseius) *fallacis*, *Mesoseiulus longipes*, *Galendromus occidentalis* & *Neoseiulus* (=Amblyseius) *californicus*, *Amblyseius cucumeris* & *Amblyseius swirskii*
- Minute Pirate Bug - *Orius insidiosus*
- Spidermite Destroyer - *Feltiella acarisuga* & *Stethorus punctillum*
- *Metarhizium brunneum*



Image Citation: Whitney Cranshaw, Colorado State University, Bugwood.org

## Thrips

**DAMAGE TO PLANTS:** Silver/bronze scarring on leaves & stems, browning & drying leaves, puckered leaves.

**SOLUTIONS:**

- Thrips Predator - *Amblyseius cucumeris*
- Mite Predator - *Amblyseius swirskii*
- Minute Pirate Bug - *Orius insidiosus*
- Green Lacewing - *Chrysoperla* spp.
- Fungus Gnat Predator - *Stratiolaelaps scimitus* (=Hypoaspis miles)
- Assassin Bugs - *Zelus renardii*
- Rove Beetle - *Dalotia coriaria*
- NemAttack Beneficial Nematodes
  - *Steinernema feltiae* (Sf)
- *Beauveria bassiana*



Frank Peairs, Colorado State University, Bugwood.org

## Whiteflies

**DAMAGE TO PLANTS:** Piercing/sucking marks, dust like substance when touched, silver/white coloring.

**SOLUTIONS:**

- Whitefly Parasites - *Encarsia formosa* & *Eretmocerus eremicus*
- Whitefly Predator - *Delphastus catalinae*
- Green Lacewing - *Chrysoperla* spp.
- Mite Predator - *Amblyseius swirskii*
- Thrips Predator - *Amblyseius cucumeris*
- Aphid Predator - *Aphidoletes aphidimyza*
- Minute Pirate Bug - *Orius insidiosus*
- *Beauveria bassiana*
- *Metarhizium brunneum*



**Break the Pest Lifecycle!**

Use sticky traps to kill flying pests and stop the reproductive lifecycle. For pest insects that have a soil developing stage, such as Thrips and Fungus Gnats, utilize Beneficial Nematodes in the soil to stop infestations before pests emerge.

# NemAttack™ Beads

## Encapsulated Beneficial Nematodes



**NEW!**

Convenient application for control of common plant pests in the soil developing stage.

No Refrigeration Required • No Mixing Required



Available as *Steinernema feltiae* and *Steinernema carpocapsae*

Apply To Soil For Control Of Target Pests:

- Borers
- Fungus Gnats
- Thrips
- Caterpillars
- Flea Beetles
- Weevils & More!



Beneficial Nematodes are live, microscopic organisms (non-segmented roundworms) that occur naturally in soil throughout the world.

They are parasitic to insect pests that typically have a developing (larval or pupal) stage of life in the soil; however, they have been known to also parasitize above ground stages of adults, nymphs and larvae.

## How Do Beneficial Nematodes Work?

Beneficial Nematodes are applied to soil where they locate pests, enter through orifices or body walls and infect pests with toxic bacteria. Once inside, it is not the nematode that actually kills the pest, but bacteria inside the nematode.



The bacteria kills pests within 24 to 48 hours. Beneficial Nematodes then feed on bacteria and host insect tissue. Adult stages of Beneficial Nematodes produce hundreds of thousands of new juveniles.

New infective juveniles emerge loaded with "pest killer" bacteria and begin their search for a new host. As long as there is a suitable host, the Beneficial Nematodes will continue to parasitize. Beneficial nematodes can be used around and will not harm mammals, aquatic life, birds, reptiles or amphibians.

## How Do I Choose the Right Beneficial Nematodes?

Use the Selection Chart on the next page to choose the proper species by pest(s). If you are unsure which nematode to use or your target pest is not listed, please call and one of our bio-control specialists can assist. Remember Beneficial Nematodes control soil-dwelling life stages.

## When & How Often Should Beneficial Nematodes Be Applied?

Use beneficial nematodes whenever larvae or grubs are present. As pest larvae feed on plant roots beneath the soil surface, severe damage can be done before you realize you have a pest dilemma. If adult insects are present, their eggs, nymphs, larvae and pupa will soon be developing.

**FOR TREATMENT:** Apply nematodes every 7-10 days until pest infestation subsides.

**FOR PREVENTION:** Apply at least 2-4 times per year in the spring, summer, fall and winter as needed.

Nematodes should be applied when *soil* temperatures are 42° - 95° F.

## When Will I See Results?

Beneficial Nematodes are considered to be one of the most lethal parasites known to kill plant pests. Depending upon the pest(s) you are treating and the method of application, it can take from 2-30 days for you to see results.

It is important to remember that Beneficial Nematodes disintegrate pests from the inside out. You will not see dead insect bodies as you would with a chemical knockdown. Instead you will notice less of the pest(s) over time.

Like all insects and organisms, some nematodes will survive the winter in a dormant state; however, we recommend re-applying at least 2-4 times on an annual basis to ensure that your pests do not get out of hand again.



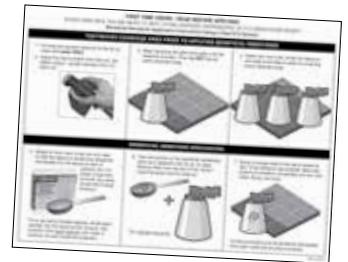
## How Do I Apply Beneficial Nematodes?

**DO NOT OPEN PACKAGE UNTIL YOU ARE READY TO APPLY**

Beneficial Nematodes are applied to the soil mixed with water. Since they are alive and sensitive to light, apply early in the morning or at dusk. It's easy to apply nematodes.

Before applying, make sure the soil is moist. Mix Beneficial Nematodes with enough water for coverage area.

Apply pre-dawn or at dusk with a hose end sprayer, backpack sprayer, pump sprayer or irrigation system.



Drench soil following application. Keep area moist for at least 2 weeks. Complete nematode application instructions available online and in the package.

## Foliar Applications:

Beneficial Nematodes should be applied to the foliage in higher humidity and plants should be kept moist for 3 or more hours. Spray thoroughly to cover all surfaces of the leaves while avoiding runoff. Reapply weekly. Use in conjunction with soil applications.

## How Long Can Beneficial Nematodes Be Kept Before Use?

Beneficial Nematodes should be used as soon as possible. If you need to store them, it is best to store them **unopened** in a refrigerator for no longer than 2 weeks. Once opened, use immediately and entirely.

# BENEFICIAL NEMATODES

## Selection

For best results, correctly identify the pest(s) to be controlled. Use the Selection Chart (opposite) to locate your pest(s) and find the recommended nematode variety or varieties listed. If there is more than one species recommended, it is best to use a combo pack including all listed species.

### NemaSeek™ *Heterorhabditis bacteriophora* (Hb) Beneficial Nematodes

NemaSeek *H. bacteriophora* actively seek out larval pests and is most effective against sedentary pests, such as queen ants, asparagus beetles, bagworms, banana moths, banana weevils, berry root weevils, bill bugs, borers, carrot weevils, chafers, fleas, grubs and more!

### NemAttack™ *Steinernema feltiae* (Sf) Beneficial Nematodes

NemAttack *S. feltiae* nematodes are known to wait for passing pests, such as cabbage maggot, humpbacked flies, onion maggots, pill worm, raspberry crown borer, root maggots, scarids, shore flies, thrips and more!

### NemAttack™ *Steinernema riobrave* (Sr) Beneficial Nematodes

These nematodes are known to wait for passing pests. NemAttack *S. riobrave* is most effective against grubs of various beetles, citrus weevil and other weevil grubs, small hive beetle and more.

### NemAttack™ *Steinernema carpocapsae* (Sc) Beneficial Nematodes

These nematodes are known to wait for passing pests. NemAttack *S. carpocapsae* is most effective against mobile pests such as fleas, cutworm, fly larvae, termites and more!

## Application Rates

Application rates vary based on pest, infestation levels and environment. For specific coverage recommendations, please call **800-827-2847**.

### Commercial Rates for Soil Applications

QUANTITY	COVERAGE
≈50 million	Treats up to 1,600 sq. ft.
≈250 million	Treats up to 1/4 acre

### Container Applications

Apply Beneficial Nematodes in water to growing medium. Drench soil with water following application, avoiding runoff.

Container Size	Nematodes Per Container
5 gallon	≈200,000
10 gallon	≈400,000
15 gallon	≈600,000
25 gallon	≈1 million

### Foliar Applications

Foliar applications are an alternative use of entomopathogenic nematodes to treat above soil life stages of certain pests. Use in conjunction with soil applications. Using an adjuvant may improve consistency and effectiveness.

It is recommended to spray with a concentrated solution in volumes of 2.5 gal. of water per 1,000 sq. ft. treatment area. See chart below for rates.

Foliar Application Rates	
Light Infestation	50 mil. for 4,400 sq. ft.
	150 mil. for 13,200 sq. ft.
	250 mil. for 22,000 sq. ft.
Heavy Infestation	50 mil. for 2,200 sq. ft.
	150 mil. for 6,600 sq. ft.
	250 mil. for 11,000 sq. ft.

## NEMATODE SELECTION CHART – Choose Variety By Pest

Pest	Variety	Pest	Variety	Pest	Variety	Pest	Variety
Armyworm		Colorado Potato Beetles		Japanese Beetles		Shore Flies	
Asparagus Beetles		Corn Earworm		Leafminers		Sugarcane Stalk Borers	
Bagworm		Corn Rootworm		May/June Beetles		Strawberry Root Weevils	
Beet Armyworm		Cranberry Girdler		Mint Flea Beetles		Sweet Potato Weevils	
Berry Root Weevils		Cucumber Beetles		Mint Root Borers		Thrips	
Bill Bug		Cutworm		Mole Crickets		Tobacco Budworm	
Black Cutworm		Diaprepes Root Weevils		Navel Orangeworm		Tobacco Cutworm	
Black Vine Weevils		Fall Armyworm		Onion Maggots		Vine Borers	
Bluegrass Weevils		Flea Beetles		Plum Curculio		Webworm	
Cabbage Maggot		Fungus Gnats		Red Flower Beetles		Western Flower Thrips	
Carrot Weevils		Gall Midges		Root Maggots		Wood Borers	
Caterpillars		Grape Root Borers		Root Weevils			
Chafer - European, masked		Grubs		Scarabs			
Codling Moth		Indian Meal Moth		Sclarids			



## Beneficial Nematodes

- ▲ = NemaSeek™ *Heterorhabditis bacteriophora* (Hb)
- = NemAttack™ *Steinernema feltiae* (Sf)
- = NemAttack™ *Steinernema carpocapsae* (Sc)
- ★ = NemAttack™ *Steinernema riobrave* (Sr)
- ◆ = NemaSeek™ *Steinernema kraussei* (Sk)
- = NemaSeek™ *Heterorhabditis indica* (Hi)

SINGLE SPECIES	
SKU	Size
▲ NemaSeek <i>Heterorhabditis bacteriophora</i>	
1220300	≈5 million
1220301	≈10 million
1220302	≈50 million
1221703	≈250 million
1221706	≈500 million
■ NemAttack <i>Steinernema feltiae</i>	
1220309	≈5 million
1220310	≈10 million
1220311	≈50 million
1221701	≈250 million
1221704	≈500 million
● NemAttack <i>Steinernema carpocapsae</i>	
1220319	≈5 million
1220320	≈10 million
1220321	≈50 million
1221702	≈250 million
1221705	≈500 million
★ NemAttack <i>Steinernema riobrave</i>	
1220410	≈5 million

COMBO PACKS	
SKU	Size
▲● NemaSeek Hb & NemAttack Sc	
1220331	≈10 mil. per species
1220332	≈50 mil. per species
1221699	≈250 mil. per species
1220335	≈500 mil. per species
▲■ NemaSeek Hb & NemAttack Sf	
1220333	≈10 mil. per species
1220334	≈50 mil. per species
1221700	≈250 mil. per species
1220336	≈500 mil. per species
■● NemAttack Sf & NemAttack Sc	
1220340	≈10 mil. per species
1220341	≈50 mil. per species
1220342	≈250 mil. per species
1220343	≈500 mil. per species

TRIPLE THREAT COMBO	
SKU	Size
▲■● NemaSeek Hb, NemAttack Sf & NemAttack Sc	
1220328	≈5 mil. per species
1220330	≈10 mil. per species
1220329	≈50 mil. per species
1220327	≈250 mil. per species
1220326	≈500 mil. per species

## NemAttack Beads Encapsulated Beneficial Nematodes



- = NemAttack *Steinernema feltiae* (Sf)
- = NemAttack *Steinernema carpocapsae* (Sc)



SINGLE SPECIES		
SKU	Size	Price
■ NemAttack Beads <i>Steinernema feltiae</i>		
5001005	≈5 million	\$36.00
5001010	≈10 million	\$42.95
5001020	≈20 million	\$57.20
5001040	≈40 million	\$86.00
● NemAttack Beads <i>Steinernema carpocapsae</i>		
5002005	≈5 million	\$36.00
5002010	≈10 million	\$42.95
5002020	≈20 million	\$57.20
5002040	≈40 million	\$86.00

Free shipping in the contiguous 48 United States. 2nd day shipping required for the 5 million - 50 million sizes. Expedited shipping available for an additional fee. The 250 million & 500 million sizes require next day shipping during summer months, 2-day shipping otherwise. Orders ship Monday - Thursday, excluding holidays.



## ARBICO Organics® Yellow Insect Traps

### Monitoring + Trapping = Effective Pest Control

**TARGET:** Use against aphids, bean beetles, California laurel aphids, flea beetles, fungus gnats, greenhouse whiteflies, leafminers, psyllids, shore flies, silverleaf whiteflies, sweet potato whiteflies and more.

**DESCRIPTION:** ARBICO Organics Yellow Insect Traps are 5" x 7" gridded, 2-sided adhesive traps for a wide range of crawling and flying insect pests. Insects are drawn in by the bright color and are caught on the glue. Once they are trapped, the gridded surface makes it easy to count just how many have landed. Having the insects immobilized on the trap also makes it easy to identify them. There is a very low risk to beneficials, but some may become caught by accident.

**SUGGESTED USE:** For use indoors and outdoors to trap and monitor insect pests. Traps may be hung virtually anywhere, placed on the ground or anchored to a stake (not included). If hung, traps should be slightly above the plant canopy. Avoid hanging too close to sprinklers.

- For trapping in the greenhouse or garden, use roughly one trap per 10-25 square feet.
- For monitoring, use roughly 4-6 traps per acre.

<b>1254501</b>	ARBICO Organics Yellow Insect Traps - 5 Pack	<b>\$4.99</b>
<b>1254502</b>	ARBICO Organics Yellow Insect Traps - 10 Pack	<b>\$9.50</b>
<b>1254503</b>	ARBICO Organics Yellow Insect Traps - 25 Pack	<b>\$23.75</b>
<b>1254504</b>	ARBICO Organics Yellow Insect Traps - 50 Pack	<b>\$46.00</b>
<b>1254510</b>	ARBICO Organics Yellow Insect Traps - 100 Pack	<b>\$87.50</b>

## Stiky™ Strips Yellow Insect Traps

These Basic Traps Come With A Handy Wire Hanger.

**TARGET:** Whiteflies, aphids, fungus gnats, leafminers, thrips, and more.

**DESCRIPTION:** This non-gridded yellow sticky trap is versatile enough to use virtually anywhere you are growing. Many insects find this particular yellow hue irresistible and, with glue on both sides, these traps will grab them coming and going. The adhesive is UV resistant, which keeps it from drying out.

**SUGGESTED USE:** For use in homes, gardens, greenhouses, nurseries and fields. Included wire hangers can also be used as plant stakes.



<b>1254301</b>	Stiky Strips Yellow Sticky Traps - 9 Pack	<b>\$5.49</b>
<b>1254302</b>	Stiky Strips Yellow Sticky Traps - (5) 9 Packs	<b>\$25.00</b>
<b>1254303</b>	Stiky Strips Yellow Sticky Traps - (10) 9 Packs	<b>\$45.00</b>

## Sticky Traps

**Monitor & Trap For Best Pest Identification!**

**DESCRIPTION:** These 4" x 7" traps reverse fold to capture insect pests on both sides and include a twist tie and punched hole for easy hanging. All natural and weatherproof.

**Aphid/Whitefly Yellow Sticky Traps:**

**TARGET:** Whiteflies, aphids, leafhoppers, fungus gnats, spittlebugs, flies and more.

**Thrips/Leafminer Blue Sticky Traps:**

**TARGET:** Thrips, leafminers.

**SUGGESTED USE:** Greenhouses, orchards, row crops, barns and more. Hang or attach to stake approximately every 7 ft. at the end of each row or per tree. Use more for trapping.

<b>1254001</b>	Package of 5 Yellow Traps	<b>\$4.49</b>
<b>1254101</b>	Package of 5 Blue Traps	<b>\$5.50</b>



## ARBICO Organics® Blue Insect Traps

Add Blue To Your Pest Control Arsenal & Cover All Your Bases.

**TARGET:** Thrips, leafminers.

**DESCRIPTION:** ARBICO Organics Blue Pest Traps are 5" x 7" gridded adhesive traps that are the perfect shade of blue to make them irresistible to Thrips and Leafminers. The color lures them in and the sticky surface holds them tight. These traps have adhesive on both sides to grab insects no matter which direction they're coming from. If you are monitoring, the gridded surface and bright color allow for easy identification and counting. When used in conjunction with the ARBICO Organics Yellow Sticky Traps, you will have the right colors to attract most common insect pests. There is a very low risk to beneficials, but some may become caught by accident.



**SUGGESTED USE:** For use indoors and outdoors to trap and monitor insect pests. Traps may be hung virtually anywhere, placed on the ground or anchored to a stake (not included). If hung, traps should be slightly above the plant canopy. Avoid hanging too close to sprinklers.

- For trapping in the greenhouse or garden, use roughly one trap per 10-25 square feet.
- For monitoring, use roughly 4-6 traps per acre.

<b>1254551</b>	ARBICO Organics Blue Insect Traps - 5 Pack	<b>\$4.99</b>
<b>1254552</b>	ARBICO Organics Blue Insect Traps - 10 Pack	<b>\$8.90</b>
<b>1254553</b>	ARBICO Organics Blue Insect Traps - 25 Pack	<b>\$19.75</b>
<b>1254554</b>	ARBICO Organics Blue Insect Traps - 50 Pack	<b>\$37.50</b>
<b>1254560</b>	ARBICO Organics Blue Insect Traps - 100 Pack	<b>\$70.00</b>

## Enoz® BioCare® Gnat Stix

A Low-Tech But Supremely Effective Method For Fungus Gnat Control.

**TARGET:** Fungus gnats, aphids, mites, plant lice & more!

**DESCRIPTION:** Effective for even the worst infestations of fungus gnats. Use one Gnat Stix for each infested plant in adjacent rooms or hallways.

**SUGGESTED USE:** Peel release paper on yellow sticky sheet. Slide stick through the holes in the sticky sheet. Use one sticky strip on each stick. Place in the soil of plants. Avoid leaves coming in contact with sticky paper.



<b>1280501</b>	Gnat Stix - 12 Per Pack	<b>\$5.99</b>
<b>1280502</b>	Gnat Stix - 12 Per Pack - Bundle of 2	<b>\$11.38</b>
<b>1280503</b>	Gnat Stix - 12 Per Pack - Bundle of 4	<b>\$21.56</b>

## Maximize Trap Attraction With Melissa Oil.



# PEST INSECT TRAPS

## Blue & Yellow Sticky Ribbon Rolls

**Blue Is For Thrips & Leafminers, Yellow Is For Aphids & Whiteflies.**

**TARGET:** Western Flower Thrips, Bean Thrips, Spinach Leafminers, California Laurel Aphid, Greenhouse Whitefly, Mexican Bean Beetle and more.

**DESCRIPTION:** These sticky ribbon rolls are an effective way to trap and monitor insects in large growing areas. Install around the perimeter of your garden or greenhouse and, since they are double-sided, they will trap insects coming and going. They can also be placed along the ground to catch crawling insects. Blue attracts thrips and leafminers and yellow attracts aphids, whiteflies and other soft-bodied insects. Pheromone lures or essential oils can be added to increase catch potential.

**SUGGESTED USE:** For best results, install the trap at the time of planting as a preventative treatment. Rolls can remain in place until the trapping surface is fully covered with insects or debris. It can be wrapped around fenceposts or stakes that are driven into the ground, or it can be attached to greenhouse posts with staples or string.

<b>1254420</b>	Blue Sticky Ribbon Roll - 6" W x 328' L	<b>\$60.00</b>
<b>1253220</b>	Yellow Sticky Ribbon Roll - 6" W x 328' L	<b>\$60.00</b>
<b>1254422</b>	Sticky Ribbon Roll Bundle - 6" W x 328' L (1 of ea.)	<b>\$115.00</b>



## Yellow Sticky™ Tape

**Longer Length Tape To Cover Even More Area.**

**TARGET:** Whiteflies, aphids, leafhoppers, fungus gnats, froghoppers (spittlebugs), flies and more.

**DESCRIPTION:** When you have an insect population in a large area that you need to monitor and trap, this sticky tape is the choice for you. It will work well against aphids, thrips, flies, gnats and many others. Pre-coated with adhesive on both sides, this yellow tape is 530' long and comes in 4 convenient widths (2", 6", 10" & 12"), making it perfect for a variety of locations. You'll also find that the extra thick cardboard flanges and heavy duty plastic plugs make these rolls easy to work with and the product easy to dispense. You can loop these along the perimeter of fields, inside greenhouses, barns, corrals, stalls or any other area where you need insect control. Any unwanted pests or other residue can be removed with vegetable oil or CitraSolv® (available online).

**SUGGESTED USE:** Loop along the perimeter of fields, inside greenhouses, barns, corrals, stalls or any other area where you need insect control.

<b>1259610</b>	Yellow Sticky Tape - 2" wide x 530' long	<b>\$50.00</b>
<b>1259611</b>	Yellow Sticky Tape - 6" wide x 530' long	<b>\$100.00</b>
<b>1259612</b>	Yellow Sticky Tape - 10" wide x 530' long	<b>\$150.00</b>
<b>1259613</b>	Yellow Sticky Tape - 12" wide x 530' long	<b>\$200.00</b>

\*Larger quantities available.



## Trapline t+ Sticky Roller Trap

**Attracts Thrips 3 Ways – By Color And Patterning & With A Pheromone.**

**TARGET:** Western Flower Thrips on soft fruits, vegetables and flowers.

**DESCRIPTION:** This is a sticky trap in ribbon form. The vivid blue of this trap is highly attractive to thrips and this trap has a specific patterning that optimizes the trapping of Western Flower Thrips. But what really makes this trap stand out is that its glue is infused with a pheromone lure. This trap is intended only for use in greenhouses. Microencapsulated pheromone provides a steady release for up to 5 weeks. The glue can last 10-12 weeks without drying out.

**SUGGESTED USE:** For best results, install the trap at the time of planting as a preventative treatment. Rolls can remain in place until the trapping surface is fully covered with insects or debris. It can be wrapped around fenceposts or stakes that are driven into the ground, or it can be attached to greenhouse posts with staples or string.

<b>1254425</b>	Trapline t+ Sticky Roller Trap - 6" W x 328' L (2 Pack)	<b>\$125.00</b>
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## Olson Garden Guard Yellow Sticky™ Ribbon

**This Ribbon Is Just Right For Encompassing Small Gardens.**

**TARGET:** Whiteflies, aphids, beetles, leafhoppers, thrips and most flying insects.

**DESCRIPTION:** Made for trapping and monitoring, Olson Garden Guard provides another weapon in the sticky trap war on insect pests. Pre-coated with Sticky Stuff adhesive, this narrow (2" wide) and long (100 ft.) roll is ideal as a perimeter barrier; use two levels of ribbon to form a formidable fence of stickiness. Comes packaged in a heavy duty plastic flange for easy dispensing.

**SUGGESTED USE:** Drive some stakes (not included) into the ground and wrap the ribbon around them and loop from one stake to another. To create a "fence" around your garden, place one row of ribbon at 1 ft. off the ground and another 2 ft. higher. Adhesive can be removed with vegetable oil, soap and water, and we recommend using vinyl gloves while handling ribbon for additional ease in cleanup.

<b>1259605</b>	Garden Guard Yellow Sticky Ribbon - 2" x 100 ft.	<b>\$12.99</b>
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## CATERPILLAR CONTROL

### Caterpillar Control



#### DAMAGE

Damaged foliage and/or flowers from caterpillar eating. Presence of caterpillar "poop" on leaves. Crops can be quickly damaged to loss if uncontrolled.



Borers tunnel to the base of a bud, stunting flower development, while also distorting stems and branches.



#### CONTROL

- Biological Controls: Introduce Green Lacewing preventatively to build a colony of predacious larvae, Minute Pirate Bug (*O. insidiosus*) or Assassin Bugs (*Z. renardii*).
- Insecticides: *Bacillus thuringiensis var. kurstaki* for larval control.
- Trapping adult moths

### BT NOW®

An Extremely Effective Biopesticide That Controls Crop-Damaging Caterpillars.

**TARGET:** Armyworms, bagworms, borers, budworms, caterpillars, earworms, leafrollers, loopers, Gypsy Moth larvae, webworms and more.

**DESCRIPTION:** Uses a strain of *Bacillus thuringiensis kurstaki* to provide broad spectrum control for a long list of *Lepidopteran* pests that feed on a wide variety of plants. Carefully monitor your crops to identify target pest infestations and apply as soon as insects are found or when there are first signs of feeding. Water-based formula, stabilized with UV inhibitors with low resistance potential. Won't harm pollinators or beneficials. 4-hour REI. Compatible with many commonly used fertilizers, pesticides and adjuvants.



**SUGGESTED USE:** Apply when larvae are small, newly hatched and actively feeding. Do not apply through any irrigation system. Can be used diluted or un-diluted. Dilution with minimal amounts of water will improve coverage. The amount of water needed for a diluted application will depend on crop size, weather, spray equipment and local experience. Please see manufacturer's label for pest and crop specific application rates and guidelines.

1201220 BT NOW - Gallon Concentrate **\$79.99**  
1201222 BT NOW - 2.5 Gallon Conc **\$170.00**

Cannot be shipped to the following states: DC

### DiPel® Pro DF & DiPel® DF



OMRI listed & WSDA Approved *Bacillus thuringiensis v kurstaki (Btk)* To Control Most *Lepidoptera* Insects.

**TARGET:** Caterpillars, armyworms, bagworms, budworms, loopers, Gypsy Moth larvae, earworms and webworms.

**DESCRIPTION:** This dust-free, flowable powder bioinsecticide works quickly; pests will stop feeding within the hour and die in a few hours to 3 days. Use the smaller-sized DiPel PRO DF for ornamentals and small edibles. The larger-sized DiPel DF is meant for agriculture production. People, beneficials, birds, fish and wildlife are not affected by DiPel.

**SUGGESTED USE:** Can be used indoors and outdoors. Best if used while larvae are actively feeding but before plants are damaged. Small scale applications: Mix 1/2-4 tsps./gal. of water. Or use 1/4-2 lbs./acre. Repeat applications every 3-14 days. Add a spreader-sticker on hard-to-wet crops and to improve spray efficacy in poor weather conditions.



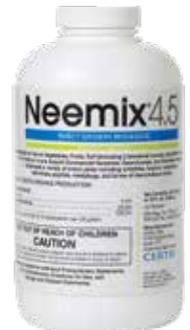
1207005 DiPel Pro DF - 1 lb. **\$22.95**  
1207006 DiPel DF - 1 lb. **\$24.75**  
1207004 DiPel DF - 5 lbs. **\$119.50**

### Neemix® 4.5

Repels And Kills Sucking & Chewing Insect Pests In Their Immature Life Stages.

**TARGET:** Aphids, caterpillars, leafminers, loopers, mealybugs, onion maggots, oriental fruit flies, psyllids, stinkbugs, thrips, the larvae of diamondback moths and many, many more.

**DESCRIPTION:** This is an organic broad-spectrum Insect Growth Regulator (IGR) botanical insecticide with an active ingredient of Azadirachtin. Once a targeted insect (in its larval or nymph form) comes into contact with or ingests this product it interferes with its ability to molt. Treated larvae may die as nymphs. Penetrates leaves via translaminar movement to affect pests on the underside but should still be applied in a manner to obtain complete coverage of plant parts. Minimal impact to beneficials. 0-day PHI and 4-hour REI.



**SUGGESTED USE:** Apply when pests first appear. Repeat applications every 7 days or as needed. Repeated applications will break the pest life cycle. Target 30 ppm spray solution by using 4-10 oz/100 gals of carrier. Spray solutions should maintain a pH of 4-7. Use an adjuvant with lower application rates. Apply soon after mixing and do not store for later use.

1457640 Neemix 4.5 - Quart Concentrate **\$270.00**

# CATERPILLAR CONTROL

## Moth Egg Parasites - *Trichogramma spp.*



### Prevent Caterpillar Damage On Crops!

**TARGET:** The egg stages of more than 200 *Lepidopteran* pests including: codling moths, borers, loopers, webworms, cutworms, bollworms, tomato hornworms and corn earworms.



**DESCRIPTION:** *Trichogramma spp.* lay their eggs in the pest eggs, killing them. Adults emerge 2-3 days after release. They live 7-75 days depending on temperature and moisture. *Trichogramma* are shipped in the parasitized host egg.

**Trichogramma Hanging Tabs/Cards:** Cards and tabs are the fastest way to introduce *Trichogramma* into the growing area. Eggs arrive on hanging cards for easy and targeted application in the plant canopy.

**Trichogramma Hanging Dispensers:** Dispensers are uniquely designed for early introduction and preventative use before high pest pressure. They are designed to have 4 waves of releases for longer control.

This format is more resistant to predator damage and is more weather resistant. **Trichogramma Capsules:** Capsules also provide 4 waves of *Trichogramma* releases and are best used preventatively. They are designed for use by automation (drone, tractor), but also great for hard-to-reach areas. These sturdy capsules have precision release holes for wasps to emerge while keeping other pests out.



**SUGGESTED USE** (Depending upon level of infestation): Use ≈1 tab/3,000 sq. ft. Release at first flight of moths and every 7-10 days thereafter until infestation subsides. **DISPENSERS/CAPSULES:** 50,000-200,000 parasites/acre. Use 3 dispensers/capsules to treat up to 3000 sq. ft. Use preventatively where historically pests have been seen, or as early in the pest lifecycle as possible (eggs must be present).

**Temperature:** Minimum 50°F      **Relative Humidity:** Moderate

### *Trichogramma pretiosum*

General predator.

#### BULK:

**1131055** ≈1,000,000      **\$225.00**

#### CONTROLLED RELEASE - DISPENSERS:

**1131062** ≈7,500 - 3 Dispensers      **\$18.50**

**1131062** ≈12,500 - 5 Dispensers      **\$25.00**

**1131062** ≈25,000 - 10 Dispensers      **\$37.50**

**1131062** ≈62,500 - 25 Dispensers      **\$43.75**

**1131065** ≈125,000 - 50 Dispensers      **\$75.00**

#### CONTROLLED RELEASE - CAPSULES:

**1131070** ≈5,000 - 5 Capsules      **\$17.50**

**1131070** ≈10,000 - 10 Capsules      **\$20.00**

**1131070** ≈30,000 - 30 Capsules      **\$37.50**

**1131071** ≈60,000 - 60 Capsules      **\$60.00**

**1131075** ≈90,000 - 90 Capsules      **\$67.50**

### *Trichogramma brassicae*

For low lying crops, cole crops; cabbage loopers and European Corn Borer.

#### CARDS:

**1131910** ≈10,000 (3 Tabs)      **\$18.50**

**1131903** ≈20,000 (6 Tabs)      **\$20.00**

**1131911** ≈100,000 - 1 Card (30 Tabs)      **\$40.00**

#### BULK EGGS:

**1131950** ≈100,000      **\$32.00**

**1131955** ≈1,000,000      **\$225.00**

#### CONTROLLED RELEASE - DISPENSERS:

**1131963** ≈7,500 - 25 Dispensers      **\$18.50**

**1131963** ≈10,000 - 5 Dispensers      **\$25.00**

**1131963** ≈25,000 - 10 Dispensers      **\$37.50**

**1131963** ≈62,500 - 25 Dispensers      **\$43.75**

**1131965** ≈125,000 - 50 Dispensers      **\$62.50**

#### CONTROLLED RELEASE - CAPSULES:

**1131971** ≈13,500 - 5 Capsules      **\$18.50**

**1131971** ≈27,000 - 10 Capsules      **\$22.50**

**1131971** ≈67,500 - 25 Capsules      **\$47.25**

**1131972** ≈135,000 - 50 Capsules      **\$67.50**

**1131975** ≈270,000 - 100 Capsules      **\$108.00**

### *Trichogramma minutum*

East of the Rockies; budworms, leafrollers and codling moths.

#### CARDS:

**1129001** ≈10,000 (3 Tabs)      **\$18.50**

**1129003** ≈20,000 (6 Tabs)      **\$20.00**

**1129010** ≈100,000 - 1 Card (30 Tabs)      **\$40.00**

#### BULK EGGS:

**1129050** ≈100,000      **\$32.00**

**1129051** ≈200,000 (2 x 100k)      **\$60.00**

**1129052** ≈500,000 (5 x 100k)      **\$150.00**

**1129055** ≈1,000,000      **\$225.00**

### *Trichogramma platneri*

West of the Rockies, orchards and tall crops.

#### CARDS:

**1130001** ≈10,000 (3 Tabs)      **\$18.50**

**1130003** ≈20,000 (6 Tabs)      **\$20.00**

**1130030** ≈100,000 - 1 Card (30 Tabs)      **\$40.00**

#### BULK EGGS:

**1130050** ≈100,000      **\$32.00**

**1130051** ≈200,000 (2 x 100k)      **\$60.00**

**1130052** ≈500,000 (5 x 100k)      **\$150.00**

**1130055** ≈1,000,000 (10 x 100k)      **\$225.00**

FREE SHIPPING in the contiguous 48 states. Ships Monday - Thursday via 2nd Day. Please allow for a minimum of 24 hours to process orders. Orders received after 8:00 AM on Thursday will ship the following Monday. Upgraded Overnight shipping will incur a \$20 upcharge. DISPENSERS/CAPSULES: May require 1 week lead time. See website for more information.

## ADULT MOTH CONTROL



### Large Plastic Delta Trap

This Work-Horse Of A Trap Will Last & Last!

1230435	Large Plastic Delta Trap - Pack of 5	\$78.00
1230436	Large Plastic Delta Trap - Pack of 10	\$150.00

### Wing Trap

You'll Get Options & Economy With This Trap!

1230440	Scentry Wing Trap - Pack of 5	\$20.00
1230441	Scentry Wing Trap - Pack of 10	\$35.00

### Delta Trap

Catch Those Pests With Ease!

1230426	Delta Trap - Pack of 10	\$21.50
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### Gypsy Moth Trap

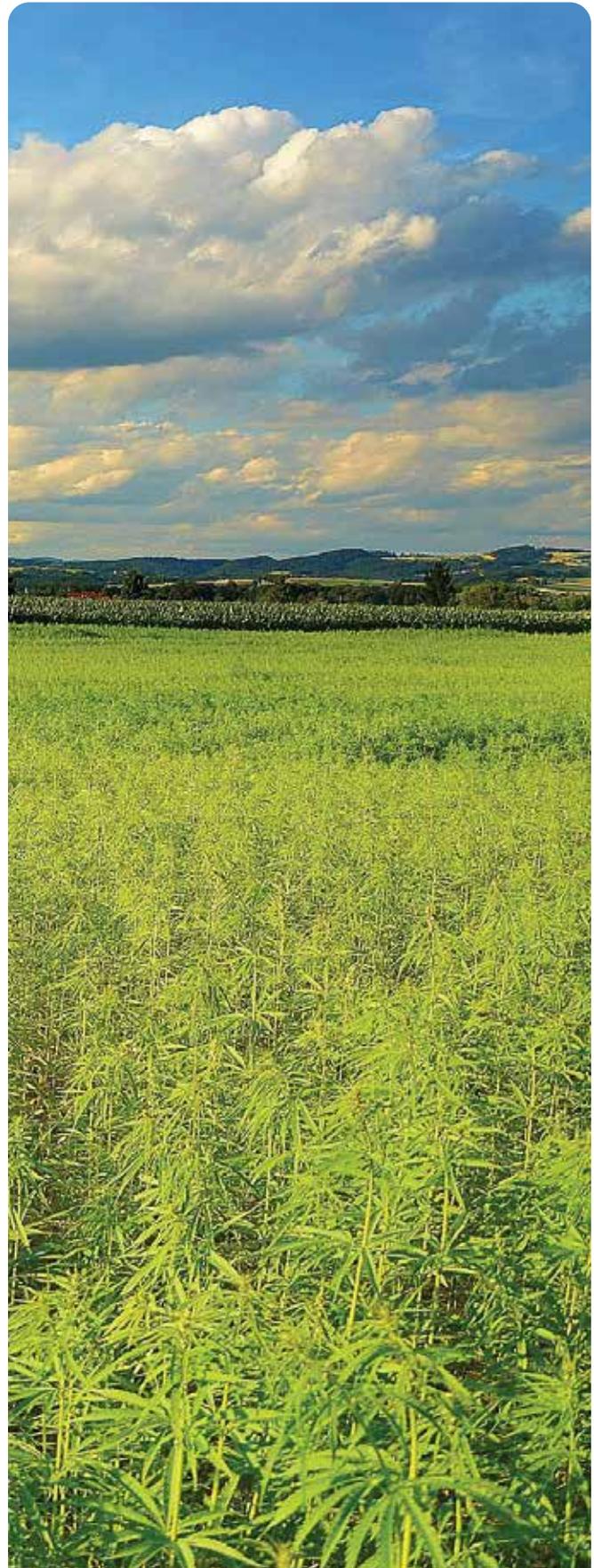
Moth Pests Disappear With This "Milk Carton" Trap!

1230430	Gypsy Moth Trap - Pack of 5	\$11.00
1230431	Gypsy Moth Trap - Pack of 10	\$20.00

### Lures By Pest

Common Name	Scientific Name	Wing/Delta/LPD/GM
Armyworm	<i>Pseudaletia unipuncta</i>	W, D, LPD
Cabbage Looper	<i>Trichoplusia ni</i>	W, LPD
Codling Moth - 10x	<i>Cydia pomonella</i>	W, LPD
European Corn Borers:		
Iowa Strain	<i>Ostrinia nubilalis</i>	W
New York Strain	<i>Ostrinia nubilalis</i>	W
Fall Armyworm	<i>Spodoptera frugiperda</i>	W
Gypsy Moth	<i>Lymantria dispar</i>	D, GM
Southern Armyworm	<i>Spodoptera eridania</i>	W, LPD

See full selection of pheromone lures online.



# GRUB & BEETLE CONTROL

## Grub Control



### DAMAGE

Yellowing and browning of leaves, rotting stems. Root destruction can lead to poor plant development.



### CONTROL

- Biological Controls: Hb or Sr Beneficial Nematodes applied to the soil during spring and fall.
- Insecticides: Drenching the soil using Azadiractin or *Beauveria bassiana*.

## Beetle Control



### DAMAGE

Foliage damage from beetle feeding.



### CONTROL

- Insecticides: Neem Oil, Azadiractin or Pyrethrin-based sprays.
- Trapping of adults using pest specific traps & lures



## GRUB CONTROL

### BioCeres® WP

This Versatile Biopesticide Can Be Used In A Tank Mix Or As A Stand-Alone.

1332890 BioCeres WP - 1 lb. Bag \$90.00  
See online for more information.

### Neemix

Organic IGR for Control of Sucking & Chewing Pest Insects

1457640 Quart Concentrate \$270.00  
See page 25 for more information.

### BotaniGard® MAXX

*Beauveria bassiana* & Pyrethrins Make A Powerful Team!

1341030 BotaniGard Maxx - Quart \$115.00  
See page 40 for more information.

## BIOLOGICAL GRUB CONTROL

### NemaSeek™ Beneficial Nematodes

Beneficial Nematodes are one of nature's most powerful weapons available for managing Japanese Beetle infestations.

Along with parasitizing the beetles in their larval, underground damaging stages, they also parasitize the larval states of other pest grubs, weevils, fleas, leafminers and more. Apply with a watering can, hose end sprayer or backpack sprayer. See pages 19-21 for more information.



## BEETLE CONTROL

### AzaGuard®

This Product Works On A Wide Range Of Ornamental, Forestry, Food & Non-Food Crops.

1222204 AzaGuard - 32 oz. \$275.00  
See page 39 for more information.

### PyGanic® Gardening

Rapid Knockdown & Kill For Outdoor Pests In Your Garden.

1288710 PyGanic Gardening - 8 oz. \$35.00  
See page 40 for more information.

### Molt-X®

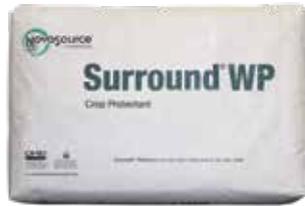
An Excellent Spray With Multiple Modes Of Insecticidal Action.

1332771 Molt-X - Quart \$350.00  
See page 39 for more information.

## Surround® WP



**An Effective Crop Protectant That Creates A Barrier Between The Crop & Pests.**



**TARGET:** Apple maggots, codling moths, glassy-winged sharpshooter, Japanese beetles, leafhoppers, lesser apple worms, oriental fruit moth, pear psylla, plum curculio, rose chafer, silverleaf whiteflies, stink bugs, thrips, tufted apple bud moths.

**DESCRIPTION:** Made from specially modified kaolin clay, Surround WP forms a barrier that protects from many pests when sprayed on fruits or vegetables. The white barrier repels pests, causes irritation, confusion, and is an obstacle for feeding and egg-laying. Kaolin clay is highly recommended for apples, wine grapes, citrus, pears, walnuts, cucumbers and tomatoes.

**SUGGESTED USE:** Surround WP can be applied with standard commercial sprayers, hand-held sprayers and backpack sprayers.

**1440065** Surround WP - 25 lb. Bag **\$56.25**  
Ships via Ground ONLY.

**Please note:** Growth enhancers are not registered in the state of California.

## PyGanic® Specialty



**New Label – Same Terrific Product As PyGanic 5.0!**

**TARGET:** Livestock and poultry pests as well as over 100 listed plant pests.

**DESCRIPTION:** With this OMRI listed, Pyrethrin-based insecticide you will be able to protect nearly everything you grow or raise from destructive and disease carrying insect pests. This includes the commercial production of livestock, poultry and crops.



These commercial enterprises require more frequent and higher volume application rates than smaller scale producers and this concentrated version is easily adapted to these specific needs. PyGanic Specialty works best if it is applied when pests first appear, before there is a heavy infestation. Thorough coverage is also key; direct contact needs to be made with the pest insects.

**SUGGESTED USE:** For use on production animals in barns, dairies, milking parlors, milking rooms and poultry houses. For use on horse flies, house flies, mosquitoes and gnats, dilute at the rate of 1.5-3 fl. oz. per 1 gallon of water and apply. Please see label for more detailed instructions on other livestock and crop pests.

**1288770** PyGanic Specialty - 32 oz. **\$179.20**  
**1288780** PyGanic Specialty - Gallon **\$650.00**

## JAPANESE BEETLE CONTROL



## Milky Spore Powder

**Specific, Long Lasting Larval Control.**

**TARGET:** Japanese beetle grubs.

**DESCRIPTION:** Contains *Bacillus popilliae* bacterium, lethal to soil-borne grub stages of Japanese beetles. Grubs that normally feed on roots of grass and vegetables will ingest the bacterium, which will cause death in about 1-3 weeks. As grubs decompose they re-release bacteria spores. The spores can remain in the soil for about ten years, and in some cases up to 20 years. In warmer climates, control can occur in 1-3 years (after one application) and in cooler climates, 3-5 years. Can apply with other fertilizers, will not harm animals and can be applied to food crops. For best results, apply with NemaSeek Hb Beneficial Nematodes (see pages 19-21), which will aid in spreading the bacterium to grubs. Store in a cool dry place to maintain shelf life.



**SUGGESTED USE:** Use All-Purpose Dispenser Tube for easy application (see online). White chalk carries the bacterium, and the resultant treated area should resemble a checkerboard. Water within about 48 hours for about 15-20 minutes to permeate into soil and do not mow or rake until thoroughly soaked. Apply about 1 tsp., every 4 ft., in rows 4 ft. apart. 10 oz. covers ≈2,500 sq. ft., 40 oz. covers ≈1/4 acre, 50 lbs. covers ≈4.5 acres.

**1216001** Milky Spore Powder - 10 oz. - Covers ≈2,500 sq. ft. **\$32.99**  
**1216040** Milky Spore Powder - 40 oz. - Covers ≈1/4 acre **\$85.99**  
**1216045** Milky Spore Powder - 25 lb. Drum - Covers ≈2.25 acres **\$879.00**  
**1216052** All-Purpose Dispenser Tube **\$14.50**

**Cannot be shipped to the following states:** CA, OR, WA

*If you are unsure if Japanese Beetles have invaded your county, please contact your County Extension Agent to find out.*

## BIOLOGICAL CONTROL

### Mosquito Bits®

**Harness The Power Of Bti For A Clean, Quick Kill.**

**TARGET:** Mosquito and fungus gnat larvae.

**DESCRIPTION:** Mosquito Bits uses the biological larvicide *Bacillus thuringiensis v. israelensis* (Bti) to quickly kill mosquito larvae in a wide range of habitats. When spread uniformly over the surface of water, the Bti will float down into the water where the larvae will consume it and die; usually within 24 hours. Bits are not harmful to people, animals or plants. Repeat after a 7-10 day interval. For Fungus Gnat control: Spread the granules over the soil until the area is covered. Moisture in the soil will dissolve the Bits. Re-apply every 3 weeks.

**SUGGESTED USE:** Sprinkle 1 teaspoon per 25 sq. ft. or 1 tablespoon per 75 sq. ft. (1/2 lb. per 2,178 sq. ft.) over the surface of containerized standing water. This includes bird baths, water troughs, unused swimming pools, old automobile tires, water gardens, rain barrels and more. DO NOT APPLY to finished human drinking water sources.

<b>1211108</b>	Mosquito Bits - 8 oz.	<b>\$10.95</b>
<b>1211136</b>	Mosquito Bits - 30 oz.	<b>\$17.80</b>
<b>1211130</b>	Mosquito Bits - 20 lbs.	<b>\$119.00</b>
<b>1211139</b>	Mosquito Bits & Dunks Combo Kit	<b>\$24.90</b>



### Mosquito Dunks® and Chunks®

**Kills Mosquitoes In Their Larval Stage Without Using Poison**

**TARGET:** Mosquito larvae.

**DESCRIPTION:** These popular products are designed to be placed in standing water, where they will slowly release the beneficial bacteria *Bacillus thuringiensis israelensis* (Bti). Mosquito larvae growing in the water will feed on the Bti and die within 24 hours of ingestion. Can alternate between wet and dry without losing efficacy. Species-specific control that will not harm people, pets, fish or plants. Effective for up to 30 days. Dunks can be anchored with a string to keep them in a specific place, while the smaller-sized Chunks are designed to be tossed into the water.

**SUGGESTED USE:** Use in any containerized standing water, except finished, treated drinking water for humans. Can be added to animal drinking water. **Dunks:** Use 1 Dunk per 100 sq ft. **Chunks:** Use 4 Chunks per 100 sq ft. Allow a minimum of 48 hours for control. Can also be used as a pre-treatment in areas prone to flooding.

<b>1211101</b>	Mosquito Dunks - 6 Pack	<b>\$13.95</b>
<b>1211103</b>	Mosquito Dunks - 20 Pack	<b>\$22.95</b>
<b>1211105</b>	Mosquito Dunks Chunks - 5 Pack	<b>\$4.79</b>



### AQUABAC® 200G Granular Bti Mosquito Control



**Use This Bti Larvicide Wherever You Have Mosquitoes Breeding**

**TARGET:** Larval stages of mosquitoes and black flies.

**DESCRIPTION:** AQUABAC 200G contains *Bacillus thuringiensis var. israelensis* (Bti), a bacteria that specifically targets mosquitoes and black flies in their larval stage, but is harmless to other living things. Once ingested, Bti will work quickly to damage cells and paralyze the larva. In addition, since AQUABAC 200G does not affect larva predators, they will continue their work alongside the Bti.

**SUGGESTED USE:** Can be applied to almost any habitat that supports mosquito or black fly larvae. Do not use directly in water sources for human consumption. Broadcast by hand or hand spreader in small areas or by standard ground or aerial dispersing methods for larger areas. If water is clear, broadcast at 2.4-10 lbs. per acre. If water is brackish, murky, polluted or full of algae, broadcast 10-12 lbs. per acre. Lasts for approximately 2 weeks.

**1211150** AQUABAC Granular Bti - 40 lb. - **Free Shipping\*** **\$187.00**

\*Free Shipping on 40 lb. bag only, in the contiguous 48 states.

Ships via Ground ONLY. Call for pallet pricing.



### AQUABAC® fg



**Biocontrol Designed for Fungus Gnat Control Through Chemigation.**

**TARGET:** Larval stages of fungus gnats.

**DESCRIPTION:** *Bacillus thuringiensis var. israelensis* (Bti) Strain BMP 144 is labeled for control of fungus gnat larvae in greenhouses or nurseries growing vegetables, herbs or ornamentals using sprinkler/chemigation systems. Similar to mosquitoes, once Bti is ingested, it works rapidly to damage cells and fatally paralyze the fungus gnat larva. AQUABAC fg will not harm any other form of aquatic life or beneficial insects.

**SUGGESTED USE:** Apply Aquabac fg directly to crops using a specified sprinkler chemigation methods. Additionally treat surrounding floors, tables, benches or other breeding areas. For light infestations, use 8-16 fl. oz. of Aquabac fg/100 gal. of water. For heavy infestations, increase to 32-64 fl. oz. and reapply weekly. Specific application restrictions can be found on the package label.

**1211180** AQUABAC fg - 2.5 Gallons\* **\$210.00**

**1211182** AQUABAC fg - 2.5 Gallons/Case of 2\* **\$400.00**

\*Free Shipping in the contiguous 48 states. Ships via ground ONLY. Call for pallet pricing.



## NemaSeek™ Sf Beneficial Nematodes

Sf Beneficial Nematodes interrupt fungus gnat reproduction and reduce local populations leading to fewer adults and less resulting damage. Use in conjunction with predatory insects as part of an integrated pest management program. Apply with a watering can, hose end sprayer or backpack sprayer. **See pages 19-21 for more information.**



## Mosquito Barrier®

For Yards, Parks & Grass Areas –  
Keeps Mosquitoes Away!

**TARGET:** Mosquitoes, gnats and fleas.

**DESCRIPTION:** Liquid garlic repellent dissipates within minutes of application. Kills adults on contact and suffocates larvae in standing water within approximately 24 hours. Saturate all plants including grass, vegetables and trees. Applications last up to 4 weeks.



**SUGGESTED USE: Residential** (1/2 acre): 4 oz. Mosquito Barrier & 2 gallons of water. **Medium Areas** (1.25 acres): 1 quart Mosquito Barrier & 20 gal. of water. **Large Areas** (5 acres): 1 gallon Mosquito Barrier & 98 gallons of water.

<b>1211001</b>	Mosquito Barrier - Quart	<b>\$22.50</b>
<b>1211002</b>	Mosquito Barrier - Gallon	<b>\$79.90</b>

**This product cannot be shipped to the following states:** ID, KS, WY

## SNS 203™ Soil Drench/ Foliar Spray



**First-Rate Control For Soil-Dwelling Pests That Feed  
On Roots & Stalks.**

**TARGET:** Kills and repels fungus gnats, root aphids, thrips, shore flies and whiteflies.

**DESCRIPTION:** Made of rosemary and clove botanical extracts that cause dehydration and death and will also attack fungus and algae. All botanical extracts are food-grade materials, highly water soluble & completely biodegradable. Created as a root drench, but equally effective as a foliar spray and in hydroponics. For use on a wide range of plants, fruits, and vegetables. 0-hr REI.

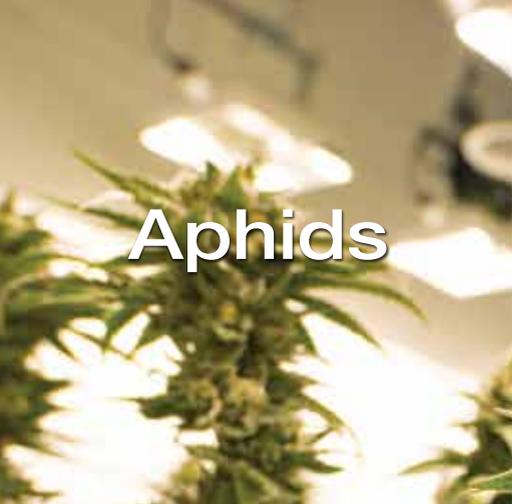
**SUGGESTED USE:** Soil drench: 1 gal mixed solution to 10 gal potted plants or 230 sq. ft. Mix 4-8 Tbsp. or 2-4 oz\*/1 gal water. Foliar Spray: 1 gal of mixed solution will cover approx. 550 sq. ft. Mix 4-12 Tbsp. or 2-6 oz\*/1 gal water. Spray to point of runoff and reapply 2-5 times every 2-3 days.\*Pouch: Mix contents with 32 oz of water and drench or spray area thoroughly. Hydroponic instructions available on label. \*Depending on severity of infestation.



<b>1459135</b>	SNS 203 Soil Drench Pouch Conc. - Makes 32 oz.	<b>\$7.99</b>
<b>1459130</b>	SNS 203 Soil Drench - 16 oz. Conc.	<b>\$24.00</b>
<b>1459131</b>	SNS 203 Soil Drench - Gallon Conc.	<b>\$110.00</b>
<b>1459132</b>	SNS 203 Soil Drench - 5 Gallons Conc.	<b>\$380.00</b>

**Cannot be shipped to the following states:** AL, AK, AR, CT, DC, DE, GA, IN, IA, KS, LA, MS, NH, NM, ND, SD, UT, WV, WY





## Aphids

### Azadirachtin

Azadirachtin, like Neem Oil, is derived from the seeds of the neem tree (*Azadirachta indica*), but lacks the fungicidal properties of neem oil. The primary mode of action is as an anti-feedant, but it also disrupts normal insect growth/molting, repels larvae and adults, sterilizes adults and deters egg laying.



## Whiteflies

### *Bacillus thuringiensis kurstaki* (Btk)

Btk is a naturally occurring bacterium that targets only the caterpillar phase of Lepidoptera. Once ingested, the caterpillar's digestive system triggers an endotoxin, which paralyzes their digestive tract. The caterpillars will stop feeding and die shortly after this occurs.



## Mites

### *Beauveria Bassiana*

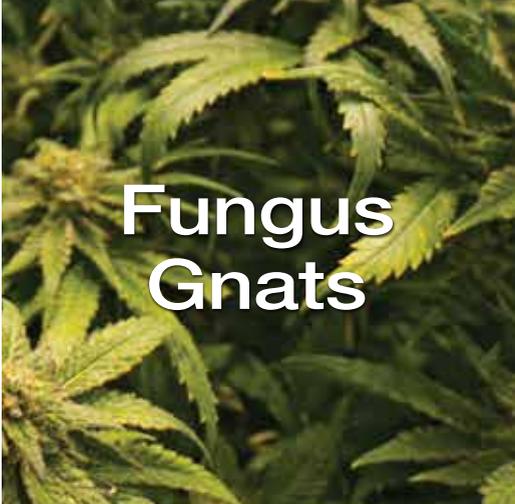
An entomopathogenic fungi that causes white muscadine disease in a range of insects. Once spores contact and infect the host, the fungus feeds and produces toxins in the insect. When the host dies, the *B. bassiana* covers the carcass and produces more infective spores.



## Thrips

### Botanical Oils

Plant based oils work not only as an insecticide, but can also control fungal diseases. Thorough contact and coverage is necessary for effectiveness. They work as repellents, smotherants and target insect nerve receptors. Common botanical oils include: Rosemary, Clove, Cinnamon, Thyme and Peppermint.



## Fungus Gnats

### Neem Oil

Neem oil kills small soft-bodied insects. It works as an anti-feedant when insects come in contact with or ingest it. It is also an hormone disruptor and growth regulator to affected insects. Neem oil also functions as a fungicide, a bactericide, and it kills Plant Parasitic Nematodes.



## Mealybugs

### Pyrethrins

Pyrethrins are derived from the Chrysanthemum and work as a broad-spectrum insecticide. They target the nervous system of the insect, producing excited behavior which results in exposure and eventual death. Use caution if pollinators are present.

## MULTI-PURPOSE

### Organic JMS Stylet-Oil®



**Smother Overwintering Insect Pests & Mites With This Food Grade Dormant Oil!**

**TARGET:** Powdery mildew, mites, whiteflies, leafminers and insect transmitted diseases.

**DESCRIPTION:** Use this multi-purpose, year-round fungicide, insecticide and antiviral spray oil in greenhouses, on field crops and on fruit trees. Kills powdery mildew on contact and prevents occurrence for up to 14 days and controls mites, whiteflies and leafminers. Made from paraffinic oil and is colorless, tasteless and odorless. 4-hour re-entry interval; no pre-harvest interval.

**SUGGESTED USE:** For gardens, apply approx. 3 Tbsp./gal. water with a sprayer. For larger areas, apply about 1-2 gal./100 gal. water and use 25-150 gal. of dilute/acre depending on crop, timing and desired treatment. Apply weekly or bi-weekly depending on severity of condition. Begin at the onset of plant growth, fungus emergence, disease and insect infestation. See label online for detailed rates and instructions.

<b>1274107</b>	Organic JMS Stylet-Oil - Gallon	<b>\$38.50</b>
<b>1274108</b>	Organic JMS Stylet-Oil - 2.5 Gallons	<b>\$60.00</b>

\*Call for freight quote. Larger sizes available.

**Cannot be shipped to the following states:** DC, IN, KS, KY, LA, MS, MT, PR, SD, TN, UT, WY



### M-Pede®



**A Highly Effective, Organic Version Of Insecticidal Soap.**

**TARGET:** Adelgids, aphids, caterpillars, earwigs, lace bugs, leafhoppers, leafminers, mealybugs, mole crickets, plant bugs, psyllids, sawfly larvae, scales, spider mites, tent caterpillars, thrips, whiteflies, spongy moths & chinch bugs. Curative control for powdery mildew.

**DESCRIPTION:** This organic foliar spray insecticide/miticide/fungicide is made from potassium salts of naturally derived fatty acids (aka insecticidal soap) and can be used on a wide range of crops grown organically or conventionally in fields, greenhouses, or interiorscapes. M-Pede works in all life stages of mites, aphids and whiteflies – with other listed insect pests, the effects are limited to early growth stages and eggs. 12-hr REI & 0-day PHI.

**SUGGESTED USE:** This product may be applied with most types of ground or aerial spray equipment, but **DO NOT** use with pulse/thermal fogger applicators or apply through any type of irrigation or hydroponic system. M-Pede rates as low as 0.25% v/v or as high as 4% v/v may be used. The 2% v/v rate is the most frequently used stand-alone rate. **Do not** mix with sulfur or use within 3 days of a sulfur application. To avoid any possible plant injury do not make repeat applications at less than 7-day intervals, or make more than 3 sequential applications at 7- to 14-day intervals

<b>1274650</b>	M-Pede - 2.5 Gallons	<b>\$153.00</b>
<b>1274652</b>	M-Pede - 2.5 Gallons - Case of 2	<b>\$275.40</b>



### PureCrop1

**Plant-Based Biostimulant, Insecticide & Fungicide.**

**TARGET:** All sap sucking insects (mites, thrips, aphids, whiteflies, leaf hoppers), mold, mildew and diseases (*Botrytis*, *Fusarium* wilt, powdery mildew and more).

**DESCRIPTION:** PureCrop1 uses advanced biochemistry to eliminate pests, mold and mildew, while increasing plant health. Although it's active ingredients are corn and soybean oil, it is in fact NOT an oil. Through the use of nanotechnology, the oil molecules are rearranged to create a colloidal micelle. Due to its small size and electrical properties, PureCrop1 is a natural surfactant, carrier of nutrients and increases sugar levels. When applied as a foliar spray or root drench, it leaves no residue behind and tests clean parts per billion. This product can be used on all stages of growth even up to day of harvest.

**SUGGESTED USE:** As a preventative foliar spray, 1 oz. per gal. every 7-10 days. For knock down foliar spray, 2 oz. per gal. every 2-3 days until desired results. To maintain long term biostimulant benefits spray, 2 oz. per gal. once a week. As a root drench or general surfactant spray, 1.24 oz. per gallon of water.

<b>1274200</b>	PureCrop1 - 16 oz.	<b>\$35.00</b>
<b>1274201</b>	PureCrop1 - 1/2 Gallon	<b>\$78.00</b>
<b>1274202</b>	PureCrop1 - Gallon	<b>\$155.00</b>
<b>1274203</b>	PureCrop1 - 2.5 Gallons	<b>\$350.00</b>

Larger sizes available.

**Shipping Restrictions:** CT, DC, IN, KS, ME, MD, MT, NE, NM, PR, SD, WI



### SuffOil-X®



**OMRI Listed Pre-Emulsified Mineral Oil Suffocates Many Soft-Bodied Insects & Controls Certain Fungal Diseases.**

**TARGET:** Aphids, cankerworms, leafhoppers, leafrollers, mealybugs, mites, plant bugs, psyllids, soft scales, webworms, whiteflies, rust and powdery mildew.

**DESCRIPTION:** Made with refined pre-emulsified mineral oil, this suffocant creates the best coverage with limited risk of plant damage. Using a pre-emulsified creates a lighter oil that dries faster, will not cause phytotoxicity, burn or undue stress, leaves no toxic residue on plants and dilutes easily with water.

**SUGGESTED USE:** Can be used with a wide variety of crops indoors or outdoors. Apply when oil will dry and evaporate in 1-2 hours and when relative humidity is less than 90%. Application rates are generally 1-2 gallons of SuffOil-X per 100 gallons of water or 20-500 gallons of spray solution per acre.

<b>1332805</b>	SuffOil-X - 2.5 Gallons	<b>\$90.00</b>
<b>1332806</b>	SuffOil-X - Case of 2 ct./2.5 Gals.	<b>\$162.00</b>

Larger sizes available.

**Shipping Restrictions:** AK, DC



## NEEM OIL & BOTANICAL OILS

### Agro Pest™

**Strong Doses Of Two Potent Oils Makes For One Powerhouse Of An Insecticide.**

**TARGET:** Aphids, whiteflies, thrips, psyllids, fruit flies and other soft-bodied, sucking insects.

**DESCRIPTION:** Agro Pest contains two of the most acclaimed pest control oils available anywhere, and at much higher concentrations than other similar products. The Thyme Oil (13%) in this product is an excellent endocrine disruptor, suffocant and repellent, while the Rosemary Oil (10%) destroys eggs and insect tracheas and interferes with neuron transmitters. The combination of these two oils means that it is effective against every stage of an insect's life. Can be used on all food and feed crops. Not harmful to beneficials and pollinators, but it's best to avoid application when bees are foraging or when beneficials have been recently released.

**SUGGESTED USE:** Can be tank mixed, always perform compatibility jar test before applying or mixing with other chemicals. Conduct small test prior to application to avoid any possible phytotoxicity. Dilute rate of 0.25%-0.50% with water. Dosage should not exceed 0.50% of the total solution.

<b>1458310</b>	Agro Pest - Quart Concentrate	<b>\$38.35</b>
<b>1458311</b>	Agro Pest - Gallon Concentrate	<b>\$150.00</b>

**Cannot be shipped to the following states:** AL, AR, CT, ID, IN, IA, KY, MD, MA, MT, NM, NC, ND, SC, SD, VT, VA, WI, WY



### Eco-1® 40

**Strong Control That's Gentle Enough To Use On Edible And Medicinal Plants.**

**TARGET:** Aphids, whiteflies, two-spotted spider mites and fungal diseases like Powdery Mildew.

**DESCRIPTION:** Eco-1 40 contains food-grade 31% Linseed Oil with 8% Rosemary and 1% Thyme Oils. This potent OMRI listed mixture will control, via suffocation, a wide range soft-bodied insects and mites in all their life stages. Also a powerful tool against fungal diseases. Can be used on plants grown for feed, fuels, fiber or medicinal purposes. No REI or PHI. No adjuvants, surfactants or penetrants needed. FIFRA 25(b) exempt from EPA registration.

**SUGGESTED USE:** For best results, do not mix with cold water (less than 45°F). Aphids: Apply every 7-12 days. 1 1/2-3 fl oz/gal water (1-2 gals/100 gals water) for dormant applications. 3-6 fl oz/gal water (2 1/2-5 gals/100 gals water) for active. Whiteflies: 3-6 fl oz/gal water every 7-12. 2 1/2-5 gals/100 gals water every 7-14 days. Mites: 1-1 1/2 fl oz/gal water every 5-7 days. 3/4-1 gal/100 gals water every 7-14 days. Powdery Mildew: 3-6 fl oz/gal water every 3-14 days. 2 1/2-5 gals/100 gals water every 7-14 days.

<b>1458140</b>	Eco-1 40 - Concentrate - Gallon	<b>\$269.99</b>
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**Cannot be shipped to the following states:** AR, CT, DC, ID, IA, KS, KY, LA, ME, MI, MS, NE, NV, NH, ND, OR, RI, UT, VT, VA, WI



### Grower's Ally® Crop Defender 3



**OMRI Listed. 4 Botanical Oils Plus A Surfactant Make A Killer Combo.**

**TARGET:** Aphids, russet mites, spider mites, thrips and other soft-bodied insects. Also kills powdery mildew.

**DESCRIPTION:** This organic product is a synergistic blend of botanical oils and a surfactant that works as an insecticide, fungicide and miticide. It is suitable for use wherever you are growing-indoors, outdoors, greenhouses or hydroponics. When used as directed, safe for use in veg and flower. Leaves no pollutants on plants or in the soil and there's no reported phytotoxicity. Use weekly-there's no limit to the number of applications per growing cycle. 0-day PHI & O-hr. REI.

**SUGGESTED USE:** Thoroughly spray the leaves and stems of the plant until there is runoff. Outdoor applications: Spray early morning or evening to avoid the hottest part of the day. Don't spray at temps over 90°F. Indoor applications: Keep lights and fans off for 2-3 hours after spraying. Preventative: Mix at 0.25% or 10 mL/gal water. Repeat weekly. Curative: Mix qt 1.0% or 40 mL/gal water. Repeat every 3-5 days or as needed. RTU: Wait at least 3 days before reapplying.

<b>1459315</b>	Grower's Ally Crop Defender 3 – 24 oz. RTU	<b>\$12.99</b>
<b>1459201</b>	Grower's Ally Crop Defender 3 – 8 oz. Conc	<b>\$49.99</b>
<b>1459202</b>	Grower's Ally Crop Defender 3 – 32 oz. Conc	<b>\$139.99</b>



### MiteXstream

**A Quick & Easy Plant-Based Solution For Mites, Molds & Mildews.**

**TARGET:** Spider mites, two-spotted mites, pacific mites, Willamette mites, citrus rust mites, broad mites, European red mites and downy mildew, powdery mildew and gray mold

**DESCRIPTION:** This exceptional biochemical product uses food-grade ingredients derived from botanical oils. It kills the adults and eggs of common mite species and eliminates mold and mildews on plants. Lab and field tested and poses no threat to honeybees. Use alone or in rotation with other miticides. Approved for use on cannabis in Colorado. Ideal for IPM programs. Can be used on coffee, cucurbits, hemp, hops, ornamentals and nursery stock, pome fruit, soybeans, stone fruit and strawberries.

**SUGGESTED USE:** For best results, use on low to moderate infestations or when conditions favor mite outbreaks and mold/mildew development. Do not apply with surfactants or through any irrigation system. Effective above freezing (32°F, 0°C) and on low to moderate infestations. Dilute 1 fl oz/gal water. Spray volume rate is 0.5-2 gal conc/acre at proper dilution rate. Stir/agitate thoroughly.

<b>1458180</b>	MiteXstream – 8 oz	<b>\$19.00</b>
<b>1458181</b>	MiteXstream – Gallon	<b>\$120.00</b>
<b>1458182</b>	MiteXstream – 5 Gallon jug	<b>\$384.75</b>

**Cannot be shipped to the following states:** CA, FL



## Rango™



**Three Types Of Control Delivered Through Superior Suspension.**

**TARGET:** Soft-bodied insects, beetles, borers, caterpillars/moths, leafhoppers, maggots/grubs, leafminers, psyllids, True Plant Bugs, weevils, wireworms & more. Diseases: *Alternaria*, anthracnose, blights, *Botrytis*, mildews, *Fusarium*, molds, *Pythium*, *Rhizoctonia*, rust, scab, sour rot and more. Nematodes: Dagger, Lance, Lesion, Reniform, Root Knot, Soybean Cyst and Sting.

**DESCRIPTION:** OMRI listed Rango is an emulsifiable concentrate made of 70% cold pressed Neem Oil and works as an insecticide, fungicide and miticide. It works as a suffocant on contact, is toxic if ingested, it repels, is an anti-feedant and interferes with the molting process. For disease control, it works by inhibiting mycelial growth. It can be applied in a foliar spray or soil application on a wide range of crops. Do not apply to sensitive plant species like certain ornamentals and flowers.

**SUGGESTED USE:** No additional surfactant is needed. Insecticide/miticide foliar application: Use a concentration of 0.625 - 1.25% v/v for normal pest and crop conditions. Use a concentration 1.8% v/v for heavier infestations. Use no more than 3 qts/acre. Fungicide foliar application: Use a concentration of 1.25 - 1.8% v/v every 10-14 days. Up no more than 6 qts/acre. Soil application: Use a concentration of 1.25 - 2.4% v/v. Use no more than 7.25 qts/acre.

<b>1450570</b>	Rango - Concentrate - 32 oz.	<b>\$34.95</b>
<b>1450572</b>	Rango - Concentrate - Gallon	<b>\$89.95</b>
<b>1450573</b>	Rango - Concentrate - 2.5 Gallons	<b>\$219.99</b>

Case sizes available.



## SNS 209 Systemic Pest Control



**This NOP Compliant Insecticide Works From The Inside Out To Provide Long-Lasting Control.**

**TARGET:** For use against spider mites, whiteflies, fungus gnats, thrips, root aphids, scales and more.

**DESCRIPTION:** This unique product formula contains rosemeric acid, a derivative of the rosemary plant, that the plant will uptake and spread throughout its structure. The presence of this acid in the plant cells forms a barrier that insects find distasteful. Once a feeding insect comes in contact with the rosemeric acid, they retreat and look for a more suitable food source. Contact with rosemeric acid can be fatal depending on the size of the pest affected and that pest's maturity. SNS 209 stays in the plant's leaves, stems and roots and can't be diluted by the elements. This provides complete protection for all parts of the plant.

**SUGGESTED USE:** This product may be used as a foliar spray or as a root drench. Use daily or every few days until it begins working in 1-2 weeks. It will be effective for up to 3 weeks. Discontinue use once it starts working and then reapply every 14-28 days as needed. Do not overuse.

<b>1459100</b>	SNS 209 Systemic Concentrate - Pint	<b>\$24.00</b>
<b>1459102</b>	SNS 209 Systemic Concentrate - Gallon	<b>\$110.00</b>

**Cannot be shipped to the following states:** AL, AK, CT, DE, GA, ID, IN, IA, KS, LA, ME, MS, MT, NM, ND, PA, RI, SC, SD, UT, WV, WY



## SNS 217™ Spider Mite Control



**These Botanical Extracts Will Not Harm Plants But Are Fatal To Spider Mites.**

**TARGET:** Use to kill and repel adult spider mites and to prevent hatching of their eggs.

**DESCRIPTION:** Using food grade rosemary extracts and oils, these products will kill adult spider mites and prevent their eggs from hatching. The natural salts and fatty acids derived from the rosemary disrupt the insect cell structure and the permeability of its membranes; this will quickly cause the insect to dehydrate and die. Additionally, once eggs are coated with the oily liquid, their respiration will be blocked and they will perish without hatching. The plant will absorb some of the components of these products, which will then form a barrier to any additional mites that may try to feed on it.

**SUGGESTED USE:** RTU - 4 quarts or 1 gallon solution will cover approximately 550 sq. feet. Concentrate - Mix 21 oz. (approx. 2 3/4 cups) to 26 oz. (3 1/4 cups) of concentrate per gallon of water. For best results use warm (70°F) distilled or chlorine-free water. Mixed solution may be used immediately or stored for up to 2 weeks.

<b>1459120</b>	SNS-217 RTU - Quart	<b>\$17.99</b>
<b>1459121</b>	SNS-217 RTU - Gallon	<b>\$90.00</b>
<b>1459126</b>	SNS-217 RTU - 5 Gallons	<b>\$380.00</b>
<b>1459125</b>	SNS-217 Pouch Conc. - Makes 32 oz.	<b>\$7.99</b>
<b>1459122</b>	SNS-217 Conc. - Pint	<b>\$68.10</b>
<b>1459123</b>	SNS-217 Conc. - Gallon	<b>\$294.64</b>

**Cannot be shipped to the following states:** RTU: AR, DE, GA, IN, IA, KS, LA, MS, NH, NM, ND, SD, UT, WY Concentrate: AL, AR, CT, DE, GA, IN, IA, KS, LA, ME, NH, NM, ND, SD, UT, WY



## Trifecta Crop Control

**Nano Technology & Time-Proven Ingredients In A Multi-Purpose Product.**

**TARGET:** Aphids, thrips, whiteflies, gnats and other soft-bodied insects as well as fungal/mildew issues.

**DESCRIPTION:** Trifecta miticide, fungicide and pesticide begins with food-grade essential oils that are put through a high sheet milling process that reduces the oil droplets into nano-sized particles. These particles are then blended with a nano-saponified emulsifier (soap). The end result is a product with tiny droplets that spread better, biodegrade faster and allow for extraordinary penetration into plant cells. Contains thyme, clove, garlic, peppermint and corn oils and citric acid. Can be used in all stages of growth.

**SUGGESTED USE:** For use as a foliar spray. Can be used with an atomizer, misting system or a spraying apparatus. For preventative maintenance use 1/2 oz./gal. water. Apply once a week on the same day and time. For infestations use 2 oz./gal. water. Apply every other day (up to 3x weekly) until infestation is controlled. Apply at the end of a light cycle or at dusk.

<b>1273060</b>	Trifecta Crop Control Conc. - 4 oz.	<b>\$29.95</b>
<b>1273061</b>	Trifecta Crop Control Conc. - 16 oz.	<b>\$84.95</b>
<b>1273062</b>	Trifecta Crop Control Conc. - 32 oz.	<b>\$131.95</b>

**Cannot be shipped to the following states:** AK, AR, IN, NE, NM



## The Amazing Doctor Zymes Eliminator



Use This Year Round For Pest & Mildew Free Plants.

**TARGET:** Aphids, thrips, fungus gnats, mites, root aphids and whiteflies. Also eliminates fungus, molds and mildew.

**DESCRIPTION:** This OMRI listed product is made with naturally occurring organic materials and citric acid to produce a multiple action fungicide/miticide. As a miticide, it works by interfering with the pest's ability to breath, fatally breaking down protein and organic materials in eggs and acting as a deterrent. As a fungicide, the citric acid destroys the biomass of the spores and alters the pH to create an environment hostile to growth. Best when used preventatively.

**SUGGESTED USE:** Dilute with warm water. Larger volume applications: 1/2 cup/gal water. For severe infestations: 1/2 cup/gal water every 3rd day. Powdery Mildew/weak solution: .5 oz/31.5 oz water. Soft bodied insects/medium solution: 1-1.5 oz/31 oz water. Infestations/strong solution: 2-2.5 oz/30 oz water. Preventative: seeds/transplants: .5-1 oz/qt water; soil amendment: 1 cup/5 gals water; foliar spray: 1/2 cup/1 gal water.

<b>1459200</b>	The Amazing Dr. Zymes Eliminator - Quart RTU	<b>\$15.82</b>
<b>1459201</b>	The Amazing Dr. Zymes Eliminator - Quart Conc.	<b>\$39.69</b>
<b>1459202</b>	The Amazing Dr. Zymes Eliminator - Gallon Conc.	<b>\$142.32</b>

Larger sizes available.

Cannot be shipped to the following states: CT, DC, ID, IN, KS, LA, ME, MS, NE, NJ, NM, ND, PR, SD



## Green Cleaner

An Industry Favorite Because It Works So Well!

**TARGET:** Soft-bodied insects including spider mites, aphids, whiteflies, broad mites & russet mites. Also effective against powdery mildew.

**DESCRIPTION:** The mixture of Soybean oil, Sodium Lauryl Sulfate, alcohol and Citric acid in Green Cleaner creates a killer combination for insect pests. The oils coat the insects to suffocate or limit spore reproduction and the alcohol and citric acid dehydrates and kills insects. This process affects the mature bugs and their eggs, so the potential for insecticide resistance in future generations is effectively eliminated. You can use Green Cleaner in every stage of plants' lives: as a dip for new cuttings, as a foliar spray during all stages of growth and to prevent cross-contamination when outsourcing plant starts.

**SUGGESTED USE:** As an insecticide, fungicide or miticide. For use on horticultural plants; not for use on feed or feed crops. Apply with any sprayer (high pressure preferred). Initial drench-2 oz. per gal.; secondary application-1 oz. per gal. (apply every 1-2 days) and weekly maintenance-1/2 oz. per gal. Apply at a rate of -1/2 oz. per gal.

<b>1458050</b>	2 oz. - Makes up to 4 Gallons	<b>\$11.99</b>
<b>1458052</b>	8 oz. - Makes up to 16 Gallons	<b>\$40.00</b>

Larger sizes available.

Cannot be shipped to the following states: IN, KS, MS, NM, SD



## EpiShield



Delivers a Powerful Punch of Essential Oils with Lower Application Rates!

**TARGET:** Aphids, Mealybugs, Mites, Spider Mites, Thrips and Whiteflies

**DESCRIPTION:** EpiShield, an advanced miticide and insecticide, offers growers unparalleled convenience. Its concentrated blend of peppermint (15%) and clove (10%) oils ensures high pest mortality rates with minimal application. Versatile for use indoors and outdoors, it effectively suppresses mites, aphids, whiteflies, mealybugs, and thrips across a variety of crops. Lower application rates allows flexibility in timing and is perfect for spot sprays. With no known risks of resistance or residue tolerance, it's an efficient solution in agriculture and commercial settings.

**SUGGESTED USES:** Dilute 9-12 fl oz per 100 gallons per acre for foliar applications. Use immediately and agitate the solution regularly. Spray top and bottom of leaf canopy until wet but without runoff. Repeat applications at 5-7 day intervals as needed. See label for dip application instructions.

<b>1332775</b>	EpiShield – 36 oz.	<b>\$288.00</b>
<b>1332778</b>	EpiShield – 2.5 Gal	<b>\$2,304.00</b>



## Sil-Matrix® LC



OMRI Listed & NOP Approved Silicon-Based Fungicide/Miticide/Insecticide.

**TARGET:** Aphids, mites and whiteflies and protection from fungal diseases like powdery mildew and *Botrytis*.

**DESCRIPTION:** This organic product uses potassium silicate (silica) as its active ingredient. It serves as a desiccant and creates a protective barrier on/around the leaf surface. These actions prevent the penetration of fungi and make the surface less palatable to insects. Additionally, silica helps strengthen cell walls and improves photosynthesis, quality and yields. 4-hr REI and O-day PHI.

**SUGGESTED USE:** Preventative application is recommended. For best results, spray on a regular schedule no sooner than every 7 days. Foliar applications: 20-250 gal/acre in a 0.25%-1% solution (1-4 qt product/100 gal) at a minimum rate of 20 gal/finished spray/acre. Compatible with most fungicides and insecticides, but sensitive to low pH materials (combine at lowest possible concentration). Use with a nonionic surfactant for maximum efficacy.

<b>1247670</b>	Sil-Matrix LC - 2.5 Gallons	<b>\$99.00</b>
<b>1247672</b>	Sil-Matrix LC - 2.5 Gallons - Case of 2	<b>\$178.50</b>



## BioCeres EC



**An Effective *Beauveria bassiana* Mycoinsecticide - Now Available as a Liquid Concentrate!**

**TARGET:** Various soil-based and foliar feeding plant pests including Aphids, Beetles, Borers, Grasshoppers/Mormon Crickets, Grubs, Leafhoppers, Mealybugs, Plant Bugs, Psyllids, Thrips, Weevils and Whiteflies.



**DESCRIPTION:** BioCeres EC is an emulsifiable liquid mycoinsecticide formulated with *Beauveria bassiana*. This entomopathogenic fungus' spores eliminate pests by adhering to the pest, causing infection, then penetrating the protective barrier of the insect's cuticle where they reproduce inside the host pest and ultimately cause death in 5-7 days. BioCeres EC can be used on pests in all life stages. It has no current known insect resistance, is tank mixable with pesticides, fertilizers and adjuvants (do not mix with fungicides) and has a 4-hour REI and Zero-Day PHI. Effective on a wide-variety of environments and crops; it is labeled for indoor and outdoor food crops, orchard crops, greenhouses, nurseries, commercial landscapes and range land, interiorscapes and turf.

**SUGGESTED USE:** Most effective when used at first sign of pest infestation. Thorough coverage and repeated application are suggested every 3-7 days for effective control. For outdoor ground applications: Apply 16-48 ounces per acre in sufficient volume of water (at least 50 gallons total volume) in a mix tank with agitation going and use a spreader/sticker adjuvant for increased adhesion. For soil applications: Apply 1-4 oz per 1,000 sq. ft in enough water for ensure good coverage (at least one gallon per 1,000 sq. ft.) and irrigate after application. For greenhouse applications: Mix 16-48 ounces per 100 gallons of water. Use at least 50 gallons per acre, spray to cover plant foliage but avoid runoff and repeat at 5-7 day intervals as needed. For turfgrasses and landscapes: Use 48-96 oz per acre.

**1332885** Gallon Conc **\$450.00**  
 Cannot be shipped to the following states: HI, PR



## *Beauveria bassiana*

*Beauveria bassiana* is an entomopathogenic fungi that causes white muscadine disease in a range of insects including whiteflies, aphids, thrips, grasshoppers and certain types of beetles. *B. bassiana* spores simply need to come in contact with a host. Once the host insect is infected, the fungus rapidly grows inside of the insect, feeding on the nutrients present in the host's body and producing toxins in the process. When the host dies, the *B. bassiana* covers the carcass in a layer of white mold that produces more infective spores.

## BotaniGard® ES & 22WP *Beauveria bassiana* Strain GHA

**Controls A Wide Variety Of Soft-Bodied Insects In Greenhouse, Field & Nursery.**



**TARGET:** A wide variety of soft-bodied insects such as whiteflies, thrips, aphids, psyllids, mealybugs, scarab beetles, plant bugs and weevils.

**DESCRIPTION:** BotaniGard is a natural contact insecticide that contains the mycoinsecticide – *Beauveria bassiana* Strain GHA, which controls many varieties of soft-bodied insects in greenhouse, field and nursery crops.

**SUGGESTED USE:** Thorough coverage is required to achieve control. Apply in 7 day intervals. However, if pest population is high, it can be applied in 3-5 day intervals totaling 3 applications.

### Application Rates of BotaniGard ES

- For whiteflies and aphids, use about .5-1 quart per 100 gallons of water.
- For thrips, use about 1-2 quarts per 100 gallons of water.
- For other insects, use about .5-2 quarts per 100 gallons of water.
- If applying as a high or low volume spray, use up to 3 quarts per 100 gallons of water to cover an area of 5,000-20,000 sq. ft.

### Application Rates of BotaniGard 22WP

- For whiteflies and aphids, use .5-1 lb. of BotaniGard 22WP per 100 gallons of water.
- For thrips, use 1-2 lbs. of BotaniGard 22WP per 100 gallons of water.
- For other labeled insects, use .5 to 2 lbs. of BotaniGard 22WP per 100 gallons of water.
- Rate depends upon infestation level, consult package instructions before application.

### BotaniGard ES

**1341010** BotaniGard ES - Quart **\$110.00**  
**1341020** BotaniGard ES - Gallon **\$360.00**

### BotaniGard 22WP

**1341000** BotaniGard 22WP - 1 lb. Powder **\$95.00**

Case sizes available.

**Shipping Restrictions:** Cannot ship via US Mail.

## BIORATIONAL

### Grandevo® CG & Grandevo® WDG



Get Widespread Control With This Multi-Action Microbial-Based Insecticide/Miticide.

**TARGET:** Aphids, whiteflies, thrips, mealybugs, mites, armyworm, Asian Citrus Psyllids, leafhoppers, *Lygus*, cutworms, beetles, *Drosophila*, loopers, moths, sharpshooters, earworms, caterpillars and more.

**DESCRIPTION:** Grandevo uses the bacterium *Chromobacterium subsugae* strain PRAA4-1<sup>T</sup> to provide long-lasting, reliable broad spectrum control of a long list of labeled pests. Its mode of action is multi-faceted; it is toxic when ingested, it repels and it reduces insect reproduction. This OMRI listed and NOP compliant organic pesticide/miticide can be a valuable part of any IPM program. Can be used on a wide range of edible crops in field and greenhouse applications.

**SUGGESTED USE:** In greenhouses: Use 1-3 lbs./100 gals. of water sprayed until just before point of runoff. Ground & aerial application: Use sufficient water to provide thorough coverage plant parts. For tank mix programs: Apply 1-2 lbs./acre For rotational programs: Apply 2-3 lbs./acre when alternating.

1332953	Grandevo CG - 1 lb.	\$40.00
1332954	Grandevo CG - 4 lbs.	\$140.00
1332952	Grandevo WDG - 6 lbs.	\$170.00



### PFR-97™ 20% WDG



Directed Fungal Growth Is The Key To This Remarkable Insecticide.

**TARGET:** Aphids, black vine & root weevils, broad, russet & spider mites, leafminers, *Coleoptera* grubs & larvae, *Lepidoptera* caterpillars & larvae, mealybugs, plant bugs, phorid & sciarid flies, thrips, whiteflies, root & wireworms.

**DESCRIPTION:** PFR-97 uses an entomopathogenic fungus, *Isaria fumosorosea* Apopka Strain 97, as its active ingredient. This is a naturally occurring, soil-borne fungus that infects and kills many insect pests. Infection, however, is not limited to soil-dwelling pests; it is spread above ground by sick and dying insects. This product has successfully harvested this fungus to control targeted insects. Germination & growth occurs over several days, so application should begin at the first sign of pests, before infestation. Can be mixed with most other products, but the only fungicide it can be mixed with are copper-based ones. 4 hour REI, OMRI listed, NOP approved.

**SUGGESTED USE:** Standard application rate: Apply PFR-97 to moist or pre-irrigated soil at 1-2 lbs. per acre of soil. Spray volume depends on crop size/type: 20-50 GPA on small or young crops; 80-100 GPA or more on full grown crops.

1332870	PFR-97 20% WDG - 5 lbs.	\$280.00
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Cannot be shipped to the following states: AK, AL, AR, IA, UT



### NoFly™ WP

This Aggressive Fungus Controls Soft-Bodied Insects & Hard-To-Kill Livestock Pests.

**TARGET:** Aphids, Bagrada bugs, beetles (including darkling, litter, carrion & hide), fungus gnats, gnats, grasshoppers, leaf hoppers, locust, lygus bugs, mealybugs, mites (including russet, spider & chicken), Mormon crickets, northern fowl mites, plant bugs, psyllids, red poultry mites, thrips, weevils, and whiteflies.

**DESCRIPTION:** This organic wettable powder mycoinsecticide contains spores of the entomopathogenic fungus *Isaria fumosoroseus* strain FE 9901. This naturally occurring fungus is a common and aggressive predator of insect pests but is not a plant pathogenic organism and will not adversely affect beneficials (including bees). When the spores come into contact with the insect pest, they will immediately attach themselves to the body. As they grow, they will penetrate the host insect's body and disrupt the normal functions of the insect's internal organs and tissues. It will stop feeding within 24 hours and die in 3-7 days. Effective against all life stages of insect pest.

**SUGGESTED USE:** Can be used as a foliar, soil or hydroponic application. Rates for crops: Foliar: 1/2-2 lb/ acre or 2-8 oz/ 11,000 sq. ft. at a minimum of 0.1% solution. Soil: 14-28 oz/100 gals water at a rate of 1 gal of solution per cu ft of growing media or 6-12 oz/5-10 gals water/yard of soil. Hydroponics: 6-16 oz/100 gals water. Rates for turf: 1/2- 2 lb/ acre or 2-8 oz/11,000 sq. ft. applied at a minimum of 0.1% solution. Rates for poultry houses & livestock barns: 1-3 oz/12 gals water.

1332875	NoFly WP - 8 oz.	\$67.78
1332876	NoFly WP - 2 lbs.	\$225.99
1332877	NoFly WP - 20 lbs.	\$1,100.00

Cannot be shipped to the following states: AK, DC



### Venerate® CG & Venerate® XC



This Unique Bioinsecticide Fits In Any IPM & Resistance Management Program (RMP).

**TARGET:** Caterpillars, foliage feeding *Coleoptera*, aphids, whiteflies, Asian Citrus Psyllids (ACP), leafhoppers, stink bugs, mites, *Lygus* and more.

**DESCRIPTION:** Venerate uses killed cells of the *Burkholderia spp.* strain A396 and spent fermentation media to kill insects in fields and greenhouses. It's toxic when ingested and works on contact to cause enzymatic degradation of exoskeletal structures and fatal interference with the molting process. Not harmful to fish, birds, most beneficials and honey bees.

**SUGGESTED USE:** Mix with water and apply as a foliar spray. Apply 1-4 qts./ acre on a 7-day interval. Smaller scale applications: 2-4 Tbsp./gal. Can alternate with another product on a 7-day interval. No limit on number of applications per season. No spray buffer needed.

1332957	Venerate CG - Quart	\$58.00
1332956	Venerate CG - Gallon	\$150.00
1332960	Venerate XC - 2.5 Gallons	\$260.00



## AZADIRACTIN

### AzaSol™



**This Non-Oil Based & Water Soluble Powder Controls A Myriad Of Insect Pests.**

**TARGET:** Whiteflies, aphids, caterpillars, mushroom flies, phorid flies, leafminers, mealybugs, psyllids, weevils and many more.

**DESCRIPTION:** Azasol contains Azadiractin, a product of the Neem tree. In production, the Neem oil from the seeds of the trees is transformed into a yellowish-white, water-soluble amorphous powder suitable for spraying. When used as directed it is effective on adult insects, larvae and pupae. It will vigorously repel insects, kill them when they come in contact with the spray or feed on sprayed plants and interrupt their life cycles. This powder quickly dissolves in water and won't clog equipment or leave an oily residue or discoloration on plants. Won't burn leaves or block photosynthesis. Can be injected in trees for quick results..

**SUGGESTED USE:** Apply as a foliar spray or soil drench to soil or soil-less media. A wetting agent may be used. To repel adult flies, use fogging equipment. Use from 1-4 tsp./1000 sq. ft. depending on pest infestation levels, application method and growing environment. For optimum results, 2-3 applications made at 7-10 day intervals is recommended.



1457620	AzaSol - .25 oz.	<b>\$19.99</b>
1457621	AzaSol - .75 oz.	<b>\$46.99</b>
1457622	AzaSol - 6 oz. (8 x 0.75 oz.)	<b>\$329.99</b>
1457624	AzaSol - 1 lb. Bottle	<b>\$599.00</b>
1457625	AzaSol - 2 lb. Jug	<b>\$1,297.00</b>

### Molt-X™



**An Excellent Knockdown Spray With Multiple Modes Of Insecticidal Action!**

**TARGET:** Aphids, whiteflies, thrips, fungus gnats, leafhoppers, leafminers, leafrollers, sawflies, webworms, mealybugs, scale, root knot nematodes and cutworms.

**DESCRIPTION:** An emulsifiable concentrate containing **3% Azadirachtin**. While it is derived from neem seed, it is not a neem oil. Works primarily as an Insect Growth Regulator that disrupts the molting process of the insect. Acts as an insect repellent, anti-feedant and deters egg-laying.

**SUGGESTED USE:** Rates: For outdoor crops, vegetables and ornamentals use Molt-X at a rate of 8 to 10 ounces/acre and 15 ounces/acre for nematode control. The rate may be increased up to 22.5 oz/acre if pest pressure is extremely high or if plant canopies are very dense. For greenhouse, shadehouse, interiorscape and nursery crops use Molt-X at a rate of 8 to 10 ounces/100 gallons.



1332771	Molt-X - Quart	<b>\$350.00</b>
1332772	Molt-X - Gallon	<b>\$975.00</b>

**Shipping Restrictions:** Cannot ship via US Mail.

**Cannot be shipped to the following states:** AK, DC

### AzaGuard®



**This OMRI Listed Product Works On A Wide Range Of Ornamental, Forestry, Food & Non-Food Crops.**

**TARGET:** For controlling and repelling over 300 listed insect species, including aphids, beetles, armyworms, fungus gnats, leafhoppers, caterpillars, mealybugs, webworms, plant parasitic nematodes and root knot nematodes.

**DESCRIPTION:** Azadirachtin, extracted from the neem tree, is the active ingredient here. Insects are repelled by the taste and smell of neem, but azadirachtin also works as a molting/growth disruptor. This Insect Growth Regulator (IGR) disrupts the life cycle between larval, pupal and nymphal stages by impeding the metabolism of ecdysone. Ecdysone is necessary for molting, without which the insect cannot mature into its next growth stage and will, ultimately, die. NOP Compliant.

**SUGGESTED USE:** Apply using a power or pump sprayer or a hand-held trigger type sprayer. Spray when pests first appear and repeat at 5-7 day interval as required. A sticker agent may be added to product for more complete coverage on waxy or pubescent plant surfaces. Do not exceed the rate of 22.5 fl. oz. (20 g.) per acre per application.



1222204	AzaGuard - 32 oz.	<b>\$275.00</b>
1222206	AzaGuard - Gallon	<b>\$1,000.00</b>
1222208	AzaGuard - 2.5 Gallon	<b>\$2,495.00</b>

### DeBug® Turbo



**Controls Over 200 Pest Insects, Plant Parasitic Nematodes & Other Plant Pathogens.**

**TARGET:** Red ants, cutworms, grubs, chinch bugs, crickets, aphids, whiteflies, thrips, beetles, leafhoppers, spider mites, caterpillars, cabbage loopers, armyworms, grasshoppers, maggots, weevils, chafers, spider mites, spittlebugs, webworms, *Rhizoctonia solani*, *Sclerotium rolfsii*, *Sclerotinia sclerotiorum*, *Fusarium oxysporum*, rust and powdery mildew.

**DESCRIPTION:** OMRI listed DeBug Turbo is an insecticide, fungicide, miticide, and nematicide. Use to control insects in various stages of development, repel insects from entering treated areas and to deter insects from feeding on treated surfaces. It also acts as a growth regulator when ingested by young insects. Contains a high concentration of azadirachtin, tri-terpenoids and neem oil. It has a low REI and PHI and can be used without harm to beneficial insects.

**SUGGESTED USE:** Mix 2 Tbsp (1 oz.)/32 oz. of water in spray container. Spray on foliage, making sure to completely saturate all surfaces. Apply in early morning or late evening with temperatures less than 95°F. For best results apply weekly; do not water leaves for 24 hours after application.



1450500	DeBug Turbo - Quart	<b>\$80.00</b>
1450502	DeBug Turbo - Gallon	<b>\$285.00</b>

Case sizes available.

**Cannot be shipped to the following states:** HI, PR, VI

## PyGanic® Gardening



### Rapid Knockdown & Kill For Outdoor Pests In Your Garden.

**TARGET:** Over 100 listed pests, including aphids, beetles, caterpillars, crickets, fruit flies, fungus gnats, mites and thrips.

**DESCRIPTION:** This updated version of PyGanic offers the same ingredients and results as the former PyGanic 1.4. Pyrethrins, the active ingredient here, is made from a daisy extract and has been used effectively for a millennia. This formulation can be applied in a variety of ways, making it easy to use no matter the size of your garden. Spraying should begin when the insects first appear, not when they are already heavily infested. Thoroughly cover all plant surfaces. This OMRI listed, NOP compliant insecticide can be used throughout your growing season and up to the day of harvest.

**SUGGESTED USE:** For use on outdoor gardens and growing areas. Not for use indoors. Not for use on plants grown for sale. Do not exceed the maximum application rates of 1.4 fl. oz. per 1,000 sq. ft. or 59 fl. oz. per acre.

<b>1288710</b>	PyGanic Gardening - 8 oz.	<b>\$35.00</b>
<b>1288730</b>	PyGanic Gardening - Gallon	<b>\$285.00</b>



## BotaniGard® MAXX

### Beauveria bassiana & Pyrethrins Make A Powerful Team!

**TARGET:** Whiteflies, aphids, thrips, psyllids, spider mites, mealybugs, leafhoppers, weevils, borers and other leaf-feeding insects.

**DESCRIPTION:** This potent biorational formulation provides a quick knock-down of insect and mite pests. The two active ingredients, *Beauveria bassiana* and Pyrethrins, work independently, yet in harmony, to provide multiple mechanisms to kill harmful insects. The pyrethrins will attack the nerve cells of the insect and the *Beauveria bassiana* strain GHA fungal spores penetrate an insect's protective cuticle and destroy it from within.

**SUGGESTED USE:** Can be applied at a rate of up to 2 quarts per 100 gallons of water, however most target insects can be controlled at a rate of 1 quart per 100 gallons of water, 1/2 quart per 50 gallons of water or 1 pint per 25 gallons of water. For best results, use as soon as insect pests are spotted, before their population becomes too large. Results can generally be seen within 2-5 days after the first spraying. Do not reapply within 3 days, unless the infestation is extreme. If this is the case, wait 24 hours for reapplication.

<b>1341030</b>	BotaniGard Maxx - Quart	<b>\$115.00</b>
<b>1341040</b>	BotaniGard Maxx - Gallon	<b>\$365.00</b>
<b>1341050</b>	BotaniGard Maxx - 2.5 Gallons	<b>\$710.00</b>

Case sizes available.



## PyGanic® Specialty



### New Label – Same Terrific Product As PyGanic 5.0!

**TARGET:** Livestock and poultry pests as well as over 100 listed plant pests.

**DESCRIPTION:** With this OMRI listed, Pyrethrin-based insecticide you will be able to protect nearly everything you grow or raise from destructive and disease carrying insect pests. This includes the commercial production of livestock, poultry and crops. These commercial enterprises require more frequent and higher volume application rates than smaller scale producers and this concentrated version is easily adapted to these specific needs. PyGanic Specialty works best if it is applied when pests first appear, before there is a heavy infestation. Thorough coverage is also key; direct contact needs to be made with the pest insects.

**SUGGESTED USE:** For use on production animals in barns, dairies, milking parlors, milking rooms and poultry houses. For use on horse flies, house flies, mosquitoes and gnats, dilute at the rate of 1.5-3 fl. oz. per 1 gallon of water and apply. Please see label for more detailed instructions on other livestock and crop pests.

<b>1288770</b>	PyGanic Specialty - 32 oz.	<b>\$179.20</b>
<b>1288780</b>	PyGanic Specialty - Gallon	<b>\$650.00</b>



Be aware of state restrictions and regulations as well as end-product testing prior to selecting or applying sprays. ARBICO Organics is not liable for testing failure.

## OrganiShield™



### Fast Acting Contact Insecticide.

**TARGET:** Adelgids, aphids, armyworms, caterpillars, glassy-winged sharpshooter, lace bugs, leafhoppers, mealybugs, mites, plant bugs, psyllids, soft scales, tent caterpillars, thrips and whiteflies.

**DESCRIPTION:** This is a biochemical insecticide/miticide that offers fast-acting control for a long list of targeted insect pests. The active ingredient in this certified organic product is a molecule called a Sucrose Octanoate Ester (SOE), a natural insect control. Effective within minutes to hours. Primarily a contact insecticide with limited residual activity. Can be used on indoor & outdoor plants. Contains no oils. 0-day PHI and 48-hr REI.

**SUGGESTED USE:** Do not use in any type of irrigation system. Apply as soon as infestation begins and use in sufficient water to achieve adequate coverage of all parts of foliage. Repeat applications as necessary at intervals of 7-10 days. Use a 0.8% to 1.0% v/v solution of this product, depending on the severity of infestation. Use between 25 and 400 gallons of total mix volume per acre.

<b>1332736</b>	Organishield - Pint	<b>\$45.00</b>
<b>1332736</b>	Organishield - Quart	<b>\$80.00</b>
<b>1332737</b>	Organishield - Gallon	<b>\$280.00</b>

Larger sizes available.

**Cannot be shipped to the following states:** AL, AK, AR, CT, DE, DC, GA, ID, IL, IN, IA, KS, KY, LA, ME, MN, MS, MO, MT, NE, NH, NM, NY, ND, OH, PR, RI, SD, TN, TX, UT, VT, WV, WI, WY



## LALGUARD M52 GR



### A Convenient Granule Bioinsecticide Effective against Black Vine Weevil Larvae, Thrips Pupae, & More!

**TARGET:** Black Vine Weevil larvae, whiteflies, thrips (including pupae), aphids and ticks in turf.

**DESCRIPTION:** Grown on grains of rice, the fungus *Metarhizium brunneum* strain F52 (formerly known as *Metarhizium anisopliae*) releases spores that effectively control pests with minimal impact on applicators and the environment. These spores will adhere to pests' bodies where they germinate and access the main body cavity through the insect's cuticle. Then they colonize the pest host and cause death in about 3-7 days. This bioinsecticide can be used with beneficials, has no known resistance risks, has a 0-day PHI and is tolerance exempt.

**SUGGESTED USE:** For best results, apply at the early stages of pest development and reapply every 4-6 weeks. Apply prior to planting or mix thoroughly into the top portion of soil where pests will be present before they emerge. Mix thoroughly into the soil or growing media at rate of 1.5-3 lbs./cu. yd. depending on pest and environment. For turf, apply 1-3 lbs./1,000sq. ft. and follow recommendations on the label for suggested layout based on pest type.

**1332999** 22 lbs **\$540.00**

**Cannot be shipped to the following states:** DC, HI



## LALGUARD M52 OD



### A Broad-Spectrum Bioinsecticide That Delivers Comprehensive Control

**TARGET:** Whiteflies, thrips, mites, aphids and various other greenhouse pests.

**DESCRIPTION:** Formulated with spores derived from the fungus *Metarhizium brunneum* strain F52 (formerly known as *Metarhizium anisopliae*), this bioinsecticide promotes eradication of both foliar and soil pests while minimizing adverse effects on applicators, non-target organisms, and the environment. Upon application, the spores of the active ingredient will adhere to the targeted pest's bodies. These spores will then germinate, penetrate the insect's cuticle, colonize it and ultimately lead to the pest's termination within 3-7 days after application. It can be used with IPM strategies including beneficial insects, has no known resistance risks, is tolerance exempt, has a 0-day PHI, 0-day REI when soil incorporated, and a 4-hour REI when used as a drench, dip or foliar application.

**SUGGESTED USE:** For best results, apply at the early stages of pest development and adjust application frequency dependent on pests' life cycle and application environment. Persistence of the fungal spores will generally be higher when incorporated into soil and with foliar applications in greenhouses versus foliar applications outdoors. Repeat applications at 5-10 day intervals or 2-5 day intervals for high populations of whiteflies. Rates will vary, for most pests and environments use 40-80 fl. oz. / 100 gal as a drench or 8-64 fl. oz. (0.5 pt.-2 qt.) / acre for foliar applications. Apply using a hand-held, ground and/or aerial spray equipment. Contains emulsifiers and mixes readily with water.

**1332998** Liter **\$194.17**

**Cannot be shipped to the following states:** DC, HI, GU



# Building Blocks for Optimal Growth

## Your Seed to Harvest Solutions for Healthy, Productive Plants



### Microbial Inoculants & Mycorrhizae

Working symbiotically with your plants, beneficial microbes and fungi improve nutrient availability and uptake, increase water efficiency and out-compete soil-borne diseases in the rhizosphere. See pages 46-48.



### Soil Enhancers

Soil health is more than just NPK! Amend soil in targeted or general applications to create the foundation for healthy plant growth. Improve texture and consistency for deep roots and balanced moisture retention. Mix compost and/or worm castings into the top 2" to 4" of soil and plant as usual. See pages 44-45.



### Biostimulants & Nutrients

The keys to unlocking your crop potential lie in correcting deficiencies in soil nutrients. A simple soil test can assist in identifying which areas need to be adjusted based on your individual plant needs. Augmenting with a biostimulant supports stress tolerance and further aids nutrient efficiency to maximize yields. See pages 49-51.



### Disease Control

Fungal, viral and bacterial pathogens can damage, compromise or kill plants. A comprehensive strategy should include: Preventative treatments of beneficial fungi and bacteria to get ahead of and out-compete pathogens in the soil, supporting healthy plant immunity through nutrition, control of vectoring pests (aphids, whiteflies, etc.) and vigilant monitoring for signs of disease throughout the growing season. See pages 52-55.



## Fertilpots



**OMRI Listed. Eliminates Circling Roots.**

**DESCRIPTION:** These sturdy and super easy-to-use pots allow your plants to grow their best possible roots in the most natural way. As the roots grow out of these porous pots and hit the air, they will stop growing forward and branch out laterally along the root shaft. This air pruning causes the plant to produce more root tips, which are the all-important part of the plant that uptakes water and nutrients. Fertilpots break down as the plant grows in and through



it. Once the roots pass through the pot walls, the pot and plant will meld together as one root ball. These pots can be used in automated systems, don't require drainage holes, eliminate transplant shock and can be used in hydroponics and aquaponics.

**SUGGESTED USE:** Spacing should make an allowance for greater plant growth compared to a plastic pot of similar dimensions. Fertilpots are designed to retain their strength during the growth



cycle but degrade quickly after planting into the next container or landscape. Handle with care. They are organic and suitable for composting.

### Round Fertilpots

<b>3000802</b>	Round Fertilpot 5 x 9 cm (501 size) - 2,170 ct.	<b>\$142.99</b>
<b>3000803</b>	Round Fertilpot 6 x 6 cm (504 size) - 3,000 ct.	<b>\$154.29</b>
<b>3000804</b>	Round Fertilpot 7 x 9 cm (509 size) - 1,280 ct.	<b>\$118.29</b>
<b>3000805</b>	Round Fertilpot 8 x 8 cm (510 size) - 1,370 ct.	<b>\$122.29</b>
<b>3000806</b>	Round Fertilpot 10 x 10 cm (513 size) - 810 ct.	<b>\$163.29</b>
<b>3000807</b>	Round Fertilpot 10 x 18 cm (510 size) - 480 ct.	<b>\$168.99</b>
<b>3000808</b>	Round Fertilpot 11 x 11 cm (519 size) - 480 ct.	<b>\$121.29</b>
<b>3000809</b>	Round Fertilpot 17 x 16 cm (580 size) - 84 ct.	<b>\$116.99</b>
<b>3000810</b>	Round Fertilpot 12 x 9 cm (592 size) - 616 ct.	<b>\$274.49</b>
<b>3000811</b>	Round Fertilpot 14 x 10 cm (593 size) - 484 ct.	<b>\$251.29</b>

### Square Fertilpots

<b>3000830</b>	Square Fertilpot 4 x 5 cm (36 cells) - 5,184 ct.	<b>\$144.29</b>
<b>3000831</b>	Square Fertilpot 5 x 5 cm (20 cells) - 1,740 ct.	<b>\$102.49</b>
<b>3000832</b>	Square Fertilpot 6 x 6 cm (16 cells) - 2,544 ct.	<b>\$148.99</b>
<b>3000833</b>	Square Fertilpot 6 x 6 cm (18 cells) - 1,998 ct.	<b>\$126.79</b>
<b>3000834</b>	Square Fertilpot 8 x 8 cm (12 cells) - 768 ct.	<b>\$95.79</b>
<b>3000820</b>	Square Fertilpot 9 x 9 cm (512 size) - 740 ct.	<b>\$166.49</b>
<b>3000821</b>	Square Fertilpot 10 x 18 cm (570 size) - 180 ct.	<b>\$172.49</b>

### Fertilpot Trays

<b>3000842</b>	28-cell trays that fit the 504 size pots - 50 ct.	<b>\$119.99</b>
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## Olivia's Cloning Gel®

**Seal The Deal On Healthy Plants With This First-Rate Cloning Gel.**



**TARGET:** Use to stimulate root development and prevent transplant shock on all cuttings.

**DESCRIPTION:** This product is a combination of a root-stimulating plant hormone (Indole-3 butyric acid) from the White Willow (*Salix alba*) tree and NPK nutrients formulated into a gel. This viscous gel adheres to cuttings quickly and completely to create a seal that provides direct root stimulation and nutrition to the plant and eliminates transplant shock. Just cut, dip and grow. For hydroponics or soil. Can be used on all plants.

**SUGGESTED USE:** No mixing required. Ready to use. Dip your cuttings in the Gel to the desired rooting depth. Coat entire stem area that is going to be below the soil or medium line. Place in our soil or any growing medium to root.

<b>2000800</b>	Olivia's Cloning Gel - 2 oz.	<b>\$11.96</b>
<b>2000801</b>	Olivia's Cloning Gel - 4 oz.	<b>\$17.56</b>
<b>2000802</b>	Olivia's Cloning Gel - 8 oz.	<b>\$29.56</b>

Case sizes available.

**Cannot be shipped to the following states:** OR

## Prococo Coco Coir

**This Compressed Coconut Coir Can Be Used in Hundreds Of Ways!**

**TARGET:** For use in greenhouses, container plants, nurseries, gardens and landscaping as a replacement for soil and peat moss or as a soil amendment. Can also be used for animal and reptile bedding, playground mulch, in composting, liquid containment and much more.



**DESCRIPTION:** Made from the natural byproducts of coconut cultivation (crushed coconut husks), this premium coco coir product is renewable and sustainable. In addition to being earth-friendly, coco coir offers many advantages: it is free of bacteria and fungal spores, improves soil by slowly adding organic matter, has a low salt content and contains very little dust. It is also easy to hydrate and is resistant to mold and mildew.

Prococo is available in 3 different variations depending on your needs. Prococo Compressed **CocoPeat Block** is finely-ground coir and an excellent moisture-holder. Prococo Compressed **Chips-N-Fiber Block** contains a mixture of rolled and finely chopped husks. Prococo Compressed **CocoChip Block** is made from coarsely chopped husks allowing for excellent drainage.

<b>1305580</b>	Prococo Compressed CocoPeat Block - 10 lbs.	<b>\$16.95</b>
<b>1305582</b>	Prococo Compressed Chips-N-Fiber Block - 10 lbs.	<b>\$16.95</b>
<b>1305581</b>	Prococo Compressed CocoChip Block - 10 lbs.	<b>\$16.95</b>

## ARBICO Organics® Earthworm Castings

So Good For Your Garden It's Almost Magical!

**TARGET:** Soils that need nutrients and microbial life.

**DESCRIPTION:** A sustainable byproduct of vermiculture, these castings have a bounty of benefits for your soil. They provide a slow release of micronutrients and trace minerals, add microbial life, reduce transplant shock, aerate and condition the soil and add chitinase (which helps in disease suppression and root knot nematode control). Can be used indoors and outdoors on anything you grow and can be used with other fertilizers and amendments.



**SUGGESTED USE:** Mix into potting soil at the rate of 3%-5% by volume. Top dress around pots beds, shrubs, trees or rows at a rate of 1/4"-1/2" every 2-4 mos. Incorporate into the top several inches of pots or beds prior to planting or mulching. Repeat when transplanting to reduce shock. Apply onto turf and rake in for lush, green grass.

<b>1308200</b>	Earthworm Castings - 1 lb. Bag	<b>\$4.95</b>
<b>1308201</b>	Earthworm Castings - 5 lb. Bag	<b>\$15.20</b>
<b>1308202</b>	Earthworm Castings - 10 lb. Bag	<b>\$25.00</b>
<b>1308203</b>	Earthworm Castings - 25 lb. Bag	<b>\$47.95</b>

## ARBICO Organics® Red Composting Worm Mix - *Eisenia fetida*, *Eisenia hortensis*, *Perionyx excavatus*

A Natural Way To Aerate Your Soil & Fertilize Your Garden.

**DESCRIPTION:** These worms are nature's decomposers and soil aerators. They consume organic matter and turn it into castings full of nitrogen, phosphorus, potash, magnesium and calcium. As they move through the soil, they break it up and introduce beneficial bacteria and oxygen. This stimulates fungal activity and more rapid breakdown of organic matter. Plants love soil that these worms have been in!



**SUGGESTED USE:** Use 2-3 worms/sq. ft. 1,000 worms cover approximately 400 sq. ft.

<b>1308003</b>	ARBICO Organics Earthworms (≈1,000)	<b>\$45.00</b>
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Cannot be shipped to the following states: HI, PR, VI, GU, AS, PW

Subject to seasonal availability.

## MPP: Mineralized Phosphate Powder™, 0-9-0



CDFA Registered. Gives Your Plants Phosphorus and Calcium Derived From Rock Phosphate.

**DESCRIPTION:** Mineralized Phosphate Powder (MPP) is a high phosphorus fertilizer with a substantial amount of calcium. This organic product is respectfully and sustainably managed and harvested from caves in Indonesia. Once collected, it is sifted through a 200-mesh screen. The resultant smooth powder makes for easy mixing and application. Can be applied to soil (or other growing mediums) or made into a tea and is commonly used in gardens, raised beds, landscapes, houseplants and containers when growing vegetables, shrubs, flowers, herbs and vines. It is also excellent for fruit-bearing and other types of trees.



**SUGGESTED USE:** Gently work into soil surface once per month or as desired in the following applications. Gardens & Landscapes: Use up to 5lbs/200 sq. ft. or 25 lbs/ 1,000 sq. ft. Transplanting & Premixing Soil: Mix 1 tsp/gal soil or growing medium. Top Dressing: Mix 1 tsp/gal soil or growing medium. For Tea: Mix 2 Tbsp/gal into a mesh bag. Do not add product loose into a solution.

<b>1323005</b>	Mineralized Phosphate Powder - 5 lbs.	<b>\$16.95</b>
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Cannot be shipped to the following states: ID, WA

## VRD: Volcanic Rock Dust™

This Easy-to-Use Amendment Unleashes Mineral Power From Deep In The Earth.

**DESCRIPTION:** VRD is sourced from Indonesia, where it is mechanically extracted in an ecologically sound manner without using chemicals. Then it is meticulously sifted through a 200 mesh screen until it turns into a smooth dust that will slowly release in the soil. VRD contains calcium, magnesium, iron, sodium and naturally occurring hydrophobic fulvic acid. It can be applied to soil (or a growing medium), used as a top dressing, made into a tea, used as a compost invigorator, and in vermicomposting. Excellent for all types of plants.



**SUGGESTED USE:** Gently dig into soil surface once per month or as desired. For gardens, landscapes, transplanting & premixing soil for potted plants and planter boxes: Use up to 5 lbs/200 sq. ft. or 25 lbs/ 1,000 sq. ft. As a top dressing: Mix 1 Tbsp/gal of soil or growing medium.

<b>1308325</b>	Volcanic Rock Dust - 5 lbs.	<b>\$18.95</b>
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Cannot be shipped to the following states: ID

## NutriRoot®, 2-2-3

**A Fertilizer & Water Management Product In One Brilliant Formulation.**

**DESCRIPTION:** This ingenious blend of seaweed extract, nutrients, humic acid, humectants and surfactants provides valuable nutrition and microbial life to the root zone to encourage robust root development through its humectants. It will also enable the soil to extract water from the air and deliver it right to the root zone. Mitigates sand and/or dry soil. Reduces seasonal pressure and hinders water run-off.



**SUGGESTED USE:** Make applications at transplant, in fall after leaf senescence, in early spring before bud break or in the growing season after leaves on plants have matured. Dilute 1 1/4-1 1/2 fl oz/gal water or 1 gal/ 70-100 gals water. The rate of 1 gal/70-100 gals water will treat up to 3,000 sq ft of landscapes. Use higher rate for newly transplanted trees or for trees with root loss. Use lower rate for routine maintenance and to alleviate drought stress.

<b>1300350</b>	NutriRoot - Conc. - 8 fl. oz.	<b>\$12.99</b>
<b>1300351</b>	NutriRoot - Conc. - 32 fl. oz.	<b>\$29.99</b>
<b>1300354</b>	NutriRoot - Conc. - Gallon	<b>\$99.99</b>

Cannot be shipped to the following states: AK, CA, DC, IL, NM, OK, OR

## DOWN TO EARTH



### DTE Azomite Powder, 0-0-0.2



The A To Z Of Minerals Including Trace Elements.

<b>1309300</b>	Down To Earth Azomite Powder - 1 lb.	<b>\$4.79</b>
<b>1309301</b>	Down To Earth Azomite Powder - 5 lbs.	<b>\$13.99</b>

### DTE Dolomite Lime



A Simple Way to Sweeten Your Soil.

<b>1300245</b>	Down To Earth Dolomite Lime - 5 lbs.	<b>\$11.49</b>
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### DTE Garden Gypsum



Improves the Condition of Your Soil While Adding Essential Nutrients.

<b>1300249</b>	Down To Earth Garden Gypsum - 5 lbs.	<b>\$12.49</b>
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### DTE Langbeinite, 0-0-22



Get 3 Crucial Plant Nutrients In One Mineral Application.

<b>1300263</b>	Down To Earth Langbeinite - 5 lbs.	<b>\$17.49</b>
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### DTE Rock Phosphate, 0-3-0



Dose Your Soil With This Before Planting – Your Plants Will Love You For It.

<b>1300269</b>	Down To Earth Rock Phosphate - 5 lbs.	<b>\$15.49</b>
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See online for shipping restrictions and larger sizes.

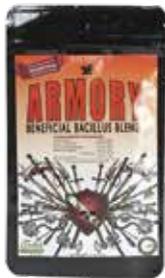
**Need to Know More About Your Soil? Understand Over a Dozen Factors With a Complete Soil Analysis. Visit [www.arbico-organics.com](http://www.arbico-organics.com)**

## Armory® SP



**A Blend Of Beneficial Bacteria That Provides Multiple Plant Promoting Benefits.**

**DESCRIPTION:** Each of the four *Bacillus* and *Streptomyces* species in this 100% water soluble organic powder bring their own assets to the table, and in combination with the others they work synergistically to achieve maximum performance in promoting plant health. Also provides a steady food source for the microbes so they can continue to flourish in your soil (or soilless media) throughout the life of your plants. Solubilizes phosphorus and makes iron and manganese more available. Breaks down cellulose and lignin and enhances nutrient cycling. Leaves no residue and is not phytotoxic. Compatible with fungicides, insecticides, fertilizers and biological stimulants **but avoid mixing with** copper sulfate pentahydrate, sulfur and hydrogen peroxide type products.



**SUGGESTED USE:** Residential Use or Reservoir Application: 0.25-1 tsp/gal water. Greenhouse/Nursery: 1-8 oz/100 gals water. Soil Incorporation: 1-2 oz/cu yd soil/media. Outdoor Soil or Foliar: 1-6 oz/acre. In-furrow: 0.5-6 oz/acre. Hydroponics: 1-6 oz/100 gals tank water. Bed, Field or Row Prep: 1-4 oz/acre. Post Fumigation Soil Application: 4-16 oz/acre through irrigation directly to the area fumigated.

1202165	Armory SP - 2 oz.	\$34.99
1202166	Armory SP - 1 lb.	\$165.45

## Earth Alive™ Soil Activator™



**Bring Your Soil To Life With This Powerful Organic Soil Inoculant!**

**DESCRIPTION:** This OMRI listed soil inoculant is a patent-pending mix of three naturally occurring soil microorganisms and an all-natural wood extract (a forestry by-product). The beneficial bacteria in Soil Activator solubilize phosphorus and fix atmospheric nitrogen for improved nutrient availability to plants and increased yields. They also encourage active root growth for robust plants from the root up. Can be used as a dry mix soil or as a soil drench.



**SUGGESTED USE:** Use at the beginning of each growth cycle or season. Option 1: 3.5 oz. of treats up to 21 gallons of soil. Mix with soil at seeding or transplant. Option 2: 3.5 oz. treats up to 1,080 sq. ft. of garden. Mix with at least 2 gallons of water and apply at the base of plants.

1202170	Earth Alive Soil Activator - 1.76 oz.	\$4.29
1202171	Earth Alive Soil Activator - 15 oz.	\$19.99
1202172	Earth Alive Soil Activator - 2.2 lbs.	\$36.99

**Cannot be shipped to the following states:** AL, AR, CT, HI, KS, LA, MD, SD, UT, WV

## Mikro-Root

**This Trichoderma-Based Product Functions As A Bio-Fertilizer.**

**DESCRIPTION:** The two carefully chosen species of Trichoderma in this dry powder work symbiotically to provide substantial growth-promoting benefits. Unlike mycorrhizal fungi, which spread out their hyphae to fill in gaps in the root zone, Trichoderma stimulates the plant's roots themselves to grow wide and strong. Mikro-Root is not only effective on roots, when applied to seeds the Trichoderma spurs higher germination rates. Also provides phytohormones that stimulate roots and spur overall growth, contains trace elements (including phosphorus) that are solubilized and made readily available to the plant, encourages enzyme, phytoalexins and phenol production, and suppresses pathogens with vigorous and healthy root growth. With regular use of Mikro-Root, you can expect a vital and disease-free root system with lots of root hair and lateral growth, strong plant development, improved drought resistance, and increased yields.



**SUGGESTED USE:** Water Suspension: 1 tsp/gal of distilled or tap water and drench the root area. Repeat every 7-10 days. Dry Application: 1 tsp-1 Tbsp to and around root system while planting/transplanting. Water after applying. Follow with 1-2 applications of the water suspension at 7-10-day intervals.

1202520	Mikro-Root - 2 oz. Pouch	\$15.90
1202521	Mikro-Root - 4 oz. Pouch	\$25.90
1202522	Miko-Root - 5 lb. Pail	\$259.00
1202523	Miko-Root - 30 lb. Pail	\$899.00

**Cannot be shipped to the following states:** AL, CA, CO, ID, IA, KS, LA, MD, ME, MN, MO, NE, ND, OH, OR, SC, SD, WY

## SCD ProBio Balance Original™



**Promotes & Restores A Healthy Microbial Balance.**

**DESCRIPTION:** This is a blend of probiotic cultures that have been produced through a natural fermentation process that uses proprietary probiotic technology. When introduced into any living system, these cultures promote the growth of naturally occurring beneficial microorganisms. Contains enhanced levels of phototropic Purple Non-Sulfur Bacteria (PNSB). These bacterial can live in both aerobic and anaerobic environments, which allows this highly concentrated product to work in many different applications. All-natural, environmentally safe and biodegradable.



**SUGGESTED USE:** Large scale food composting: Spray on compost at a rate of 1-3 liters/ton of compost material. Dilute with water as needed. Indoor composting: Dilute at a ratio of 1:10 with water and apply every 2 weeks. Commercial/residential odor control: Spray on the affected areas at a rate of 1:10-1:100.

1202120	SCD ProBio Balance Original - Liter	\$28.82
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## ROOT™

**Stronger, Healthier, Happier Plants Start At The Root!**

**DESCRIPTION:** With eight different beneficial microbes, fully soluble ROOT is the ideal biological inoculant and soil amendment wherever you are growing. ROOT introduces naturally occurring beneficial microbes that boost bacterial colonization at the roots. With increased microbial activity at the roots, the plant is more efficient at absorbing the nitrogen and breaking it down into ammonia and nitrate. Likewise, normally insoluble phosphorous is made more soluble. The Myconate (Formononetin) in the formulation is a naturally occurring, signaling molecule, that spurs bacterial colonization and the growth of mycorrhizal fungi. This improved mycorrhizal network serves the plant by providing an increased surface area of the root that allows the plant to absorb more nutrients and water.



**SUGGESTED USE:** Not recommended for use in Recirculating or Deep Water Culture Systems. Use ROOT as a separate feeding from regular nutrient feedings. Use within 6 hours of mixing ROOT into water. **Transplanting:** Mix 1 tsp. of ROOT per gallon of water. Transplant and apply ROOT solution as a root drench. **Vegetative and Flowering Plants:** Mix 1 tsp. of ROOT per gallon of water. Apply ROOT solution as a root drench to the growing medium every 2 weeks.

**3000508** ROOT - 5 lbs. **\$299.99**

**Cannot be shipped to the following states:** AL, GA, HI, ID, IN, IA, KS, KY, NE, NC, OR, SC, TN, TX, UT, VA, WI, WY

## Inocucor™ Garden Solution

**Stimulate Root Growth And Boost Yields With This Special Blend Of Microbes & Enzymes.**

**TARGET:** High value crops in farms, fields, greenhouses, hydroponic and aquaponics systems.

**DESCRIPTION:** This OMRI listed biological soil inoculant serves as a catalyst to stimulate root growth and microbial activity to boost harvest yield and quality. Proven effective, this blend is designed to benefit a wide-selection of high-value crops. It reduces the effects of abiotic stress factors like transplanting, drought and soil salt content. In addition to the beneficial microbes, Inocucor Garden Solution contains an optimal blend of enzymes to stimulate microbial colonization in the soil. This ensures development of a healthy and bioactive root zone and boosts plant vigor.



**SUGGESTED USE:** Dilute 100x in water (or 3 tsp. per gal.). Apply throughout growing season or every 30 days. For stressed plants, add 6 tbsp. per gal. and apply weekly.

**1202150** Inocucor Garden Solution - 1 Liter **\$18.15**

**1202152** Inocucor Garden Solution - 2.5 Gallons **\$90.00**



## EM•1® Microbial Inoculant

**Faster Breakdown Of Organic Matter.**

**DESCRIPTION:** EM-1 is a versatile microbial product that converts organic matter into humus and improves soil structure; it can be used in garden, agricultural, hydroponic and houseplant applications. It works by producing high levels of polysaccharides, beneficial enzymes and organic acids. The resultant amended soil is better able to absorb and retain moisture, as well as cycle nutrients. As it rapidly breaks down organic matter around animals and in compost piles, it lessens odors and will leave fewer breeding areas for flies and other insects.



**SUGGESTED USE:** Can be applied via a hose-end sprayer or other watering device. General application rate is 1 oz (2 Tbsp.) per gal./water. Hydroponics: Add EM-1 as a 3% solution several times a week.

<b>1202098</b>	EM•1 Microbial Inoculant - 16 oz.	<b>\$29.70</b>
<b>1202101</b>	EM•1 Microbial Inoculant - Quart	<b>\$45.00</b>
<b>1202102</b>	EM•1 Microbial Inoculant - Gallon	<b>\$79.70</b>
<b>1202103</b>	EM•1 Microbial Inoculant - 5 Gallons	<b>\$398.50</b>

Call for larger sizes.

**Cannot be shipped to the following states:** HI, PR, VI

## Mikrobs

**Self-Propagating Microbes & Supplemental Nutrition For Long-Term Benefits.**

**DESCRIPTION:** This finely powdered, organic soil amendment/bioinoculant contains three microbes (Rhizobacteria, Trichoderma fungi and Mycorrhizal fungi) and supplemental nutrients. This blend of microbes works synergistically together to maximize their effect and the nutrients (humic/fulvic acid, amino acid, kelp, molasses) provide ongoing nutritional support for the microbes as they stimulate root growth and work their way into the soil. Once the microbes are established, they will out compete fungal pathogens, insects, and/or parasitic bacteria. Ultimately, Mikrobs will create a self-sustaining ecosystem with active propagation.



**SUGGESTED USE:** 1 tsp/ 1 gal of distilled or tap water every 7-10 days. Can increase to 1 tbsp for better output. Application interval by growth stage-vegetative development: 7-10 days, fruiting: 2 wks and to maintain general plant health against biotic/abiotic stresses: 2-3 weeks

<b>1202500</b>	Mikrobs - 8 oz. Pouch	<b>\$22.90</b>
<b>1202501</b>	Mikrobs - 1 lb. Pouch	<b>\$43.50</b>
<b>1202502</b>	Mikrobs - 5 lb. Pail	<b>\$169.00</b>
<b>1202503</b>	Mikrobs - 35 lb. Pail	<b>\$940.00</b>

**Cannot be shipped to the following states:** AL, CA, CO, ID, IA, KS, LA, MD, ME, MN, MO, NE, ND, OH, OR, SC, SD, WY



## ARBICO Organics® Root Build 240™ Mycorrhizal Fungi



This Potent Mycorrhizal Fungi Has An Incredible 240 Spores/gr To Maximize Root Colonization.

**DESCRIPTION:** New Root Build 240 contains both micronized Endo and Ecto mycorrhiza for a wide range of plant applications. This greater diversity in beneficial fungi meets the needs of a greater variety of plants. When introduced early in the life of a plant, the endo and ecto will increase the roots' ability to absorb water and nutrients. Endomycorrhizae work within and around the roots of most vegetables, grasses, flowers and ornamentals while ectomycorrhizae live only on the outside of roots and focus on conifers. The high spore count in Root Build 240 means there will be maximum colonization of your plants' roots. Endo Spores: 240 spores/gr. Ecto Spores: 1 x 10<sup>6</sup> spores/gr.



**SUGGESTED USE:** Inoculate roots with mycorrhizal spores (1 oz. is ≈3 Tbsp.) For vegetables, grasses, flowers, shrubs, fruit trees and ornamentals.

<b>1135001</b>	ARBICO Organics Root Build 240 - 1 oz.	<b>\$9.00</b>
<b>1135002</b>	ARBICO Organics Root Build 240 - 2 oz.	<b>\$12.50</b>
<b>1135003</b>	ARBICO Organics Root Build 240 - 8 oz.	<b>\$31.50</b>
<b>1135004</b>	ARBICO Organics Root Build 240 - 1 lb.	<b>\$45.00</b>
<b>1135005</b>	ARBICO Organics Root Build 240 - 10 lbs.	<b>\$329.00</b>

\*Free shipping in the contiguous 48 United States via USPS mail.

## Great White® Premium Mycorrhizae

Promote Strong Root Systems, While Reducing Water & Fertilizer Needs!

**DESCRIPTION:** Great White Premium Mycorrhizae is a concentrated formula that boosts nutrient and water absorption generating root development, plant growth and yield. Water soluble, this product is easy to apply and will quickly begin interacting with plants. It features:



- 15 different species of various endo and ectomycorrhizal
- 14 different species of beneficial bacillus bacteria
- 2 species of trichoderma (commonly found to help fight against fungal diseases, i.e., *Sclerotinia sclerotiorum*, *Botrytis*, *Fusarium*, and *Penicillium*)
- Plant vitamins

**SUGGESTED USE:** For hydroponic, drenching or injection applications, mix at a ratio of about 1 tsp. /2 gal. of water or ≈ 1 part/2 parts water.

<b>2000064</b>	Great White Mycorrhizae - 1 oz.	<b>\$14.95</b>
<b>2000065</b>	Great White Mycorrhizae - 4 oz.	<b>\$34.95</b>
<b>2000066</b>	Great White Mycorrhizae - 8 oz.	<b>\$64.95</b>
<b>2000067</b>	Great White Mycorrhizae - 32 oz.	<b>\$219.95</b>
<b>2000072</b>	Great White Mycorrhizae - 5 lbs.	<b>\$395.95</b>

Cannot be shipped to the following states: GU, HI, PR

## Mikro-Myco

A Heady Combination Of Mycorrhizae, Rhizobacteria & Beneficial Fungi.

**DESCRIPTION:** Mikro-Myco contains a combination of endo and ectomycorrhiza, phosphate solubilizing fungi (PSF) and plant growth promoting bacteria (PGPB). Together, the mycorrhizae and supplemental microbes work to develop the ultimate interchange between roots, soil, and plants. It will encourage root growth, but also provide fungal hyphae in the root zone to help move nutrients up into the soil. The beneficial fungi in this blend are able to release fixed phosphorus and provide support for the plant to fight off pathogens and overcome stressors, allowing the plant to put its energy into maximizing growth and fruit/flower output.



**SUGGESTED USE:** Water Suspension: 1 tsp/1 gal distilled or tap water and drench the root area. Dry Application: 1 tsp-1 Tbsp to root system while planting/transplanting. Powder must come in direct contact with the roots.

<b>1202510</b>	Mikro-Myco - 2 oz. Pouch	<b>\$10.99</b>
<b>1202511</b>	Mikro-Myco - 4 oz. Pouch	<b>\$19.99</b>
<b>1202512</b>	Miko-Myco - 5 lb. Pail	<b>\$279.00</b>
<b>1202513</b>	Miko-Myco - 30 lb. Pail	<b>\$1,399.00</b>

Cannot be shipped to the following states: AL, CA, CO, ID, IA, KS, LA, ME, MD, MN, MO, NE, ND, OH, OR, SC, SD, WY

## E-Z Root®

At Last! An Organic Rooting Compound Without Hormones.

**DESCRIPTION:** This microbial-based product triggers root growth and sustains healthy roots in cuttings and transplants. Contains multiple strains of active beneficial bacteria, and a 0-0.5-0.5 fertilizer to gently provide power to drive energetic root activity. Contains living bacteria and the use of pesticides, nematicides, fungicides, herbicides, insecticides or fumigants can damage the integrity of, or outright kill, the bacteria. If you must use these products, never apply E-Z Root directly before an application. Instead, apply E-Z Root in a rotation that allows 5-7 days between the applications of E-Z Root and other agents. Can be used as a dip, drench in soils, in greenhouse applications, in soil and soil-less media, as an additive in hydroponics, and in deep root feed in injections.



**SUGGESTED USE:** On unrooted cuttings, coat the entire cut in a small amount of powder and plant the cutting in soil or soil-less media. When planting, apply directly to the soil. For plants up to 8", use 1/2 scoop per planting hole. When transplanting, use 1/2 to 3 scoops depending on pot size. Soil-less media, use 1-2 scoops/16-32 oz. water. Hydroponics, use 1 scoop/5 gal. water per nutrient change. Drench, use biweekly - 1/2 scoop/gal. water & 5 gal. pot/1 qt. solution.

<b>1202210</b>	E-Z Root - 2 oz.	<b>\$7.99</b>
<b>1202211</b>	E-Z Root - 8 oz.	<b>\$25.99</b>



## AXIOM

### Harness The Power Of Harpin Protein!

**DESCRIPTION:** Axiom works as a plant health promoter and growth stimulator by signaling defense systems in the plant with the introduction of the naturally occurring Harpin Protein (an endophytic bacteria). In order to fight off the perceived threat of this specific bacteria, the plant will amp up its growth and disease fighting ability. Many years of university and field testing has developed this process into an easy-to-use commercial product. This translates to healthier plants as well as increased production and growth within your crop.

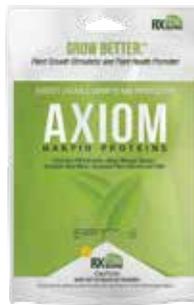
#### SUGGESTED USE:

**General Application:** Apply mixed product to plant foliage with a pump sprayer, mister, or other suitable applicator. Apply product the same day as it is mixed. Apply as a fine mist for efficient coverage. Do not over apply. Reseal opened packets to minimize exposure to air and moisture. Opened packets should be used within 3 weeks of when they are opened.

**Application rate for 2 oz. packets:** One packet mixed with 50 gallons of water covers 50,000 sq. ft.

**3000607** Axiom - 2 oz. **\$108.99**

**Cannot be shipped to the following states:** AL, CA, GA, ID, IN, IA, KS, NE, NC, ND, SC, SD, TX, UT, VA, WI, WY



## BIO520

### An Exceptional Blend Of Nutrients That Could Be Your Only Additive.

**DESCRIPTION:** This all-natural liquid nutrient product promotes overall growth enhancement and supports optimal plant cultivation. It has over 100 veganic compounds, humic and amino acids, microorganisms, diatomaceous material, vitamins, plant enzymes, marine extracts and more. Boosts plant health, improves nutrient uptake, increases yield, produces high-quality fruit and flowers and blocks the uptake of heavy metals and toxins. Contains no animal products or manure. Use on its own or as a part of a feeding regime.

**SUGGESTED USE:** For all kinds of growing media. For best results, remove all animal-derived fertilizers from your irrigation solution and replace with BIO520. Seed germination: 1 part conc/500 parts irrigation water. Irrigation: 1 part conc/1,000 parts irrigation water. Irrigate at normal volumes and frequency.

**1320120** BIO520 – Pint **\$47.50**

**1320121** BIO520 – Gallon **\$266.00**



## MegaPhos™ SP

### OMRI Listed & CDFA Registered. Helps Cure Phosphorus Deficiency While Encouraging Strong & Healthy Growth.

**DESCRIPTION:** This organic, water-soluble powder uses the unique beneficial bacteria *Bacillus megaterium* HM87 to solubilize phosphorus bound up in the soil and make it available to plants. All natural and non-GMO MegaPhos offers a safe and eco-friendly alternative to phosphate fertilizers by utilizing an endospore-forming beneficial bacterium that colonizes the root zone and produces enzymes that naturally solubilize phosphorus. Additionally, this bacillus will produce metabolites that spur root production, plant growth and yield. Works even in high calcium soils.

**SUGGESTED USE:** Can be tank mixed chemicals, fertilizers and other biologicals. Can be applied as a foliar spray, soil drench, row/ in-furrow applications, soil/soil-less incorporation, seed treatments and in hydroponics. Foliar Spray & Soil: Approx. 1-2 tsp/gal water or 1-6 oz/gal water/acre. Row/ In-Furrow: Approx. 1/2-6 oz of per acre. Incorporation: Approx. 1/2-1 oz/ cubic yard of soil or growing media. Seed: Use 10-100 gr/100 lbs of seed. Hydroponics: 1-6 oz/100 gal of tank water

**1202145** MegaPhos SP - 2 oz. **\$42.51**  
**1202146** MegaPhos SP - 1 lb. **\$167.35**



## BIO520

### An Exceptional Blend Of Nutrients That Could Be Your Only Additive.

**DESCRIPTION:** This all-natural liquid nutrient product promotes overall growth enhancement and supports optimal plant cultivation. It has over 100 veganic compounds, humic and amino acids, microorganisms, diatomaceous material, vitamins, plant enzymes, marine extracts and more. Boosts plant health, improves nutrient uptake, increases yield, produces high-quality fruit and flowers and blocks the uptake of heavy metals and toxins. Contains no animal products or manure. Use on its own or as a part of a feeding regime.

**SUGGESTED USE:** For all kinds of growing media. For best results, remove all animal-derived fertilizers from your irrigation solution and replace with BIO520. Seed germination: 1 part conc/500 parts irrigation water. Irrigation: 1 part conc/1,000 parts irrigation water. Irrigate at normal volumes and frequency.

**1320120** BIO520 – Pint **\$47.50**

**1320121** BIO520 – Gallon **\$266.00**



## BSFL Nutrient +

### Food Waste Turned Into Plant Strength

**DESCRIPTION:** Made by Arizona Worm Farm, makers of Black Soldier Fly Frass, this groundbreaking liquid plant nutrient is produced by emulsifying Black Soldier Fly Larvae and frass. The Black Soldier Fly Larvae emulsion (3-3-5) is combined with Black Soldier Fly Frass (3-2-1), pure well water and phosphoric acid (for stabilization) to create a hydrolysate that contains plant nutrients, beneficial microorganisms, chitin, glutamate and enzymes. This product has an added element of sustainability as the Black Soldier Flies are excellent decomposers and are raised on food waste promoting Arizona Worm Farm's circular zero-waste process!

**SUGGESTED USE:** Shake well before using. For gardens: Dilute at a ratio of 4:1 with water and apply to soil. For starts: Dilute at a ratio of 8:1 with water and apply to soil. Trees: Add one cup (undiluted) for each three feet of tree height and water well. Not recommended for use on seeds.

**1300425** BSFL Nutrient + - Gallon **\$20.00**

**Cannot be shipped to the following states:** State(s)





The improved Rx Green Solutions 2.0 line of products are dye-free, have increased magnesium, added fulvic acid and improved line flow.

## Grow 2.0 A & B (3-0-2)

These Two Awesome Parts Combine For A Powerful Blast Of Nutrients.

**DESCRIPTION:** The high-quality ingredients in this two-part nutrient product provide the foundation for strong, healthy vegetative growth and overall exceptional plant performance. Enables phosphorus availability, serves as a metabolic enhancer, provides better nitrogen usage and offers direct support for chlorophyll production, enzymatic activity and carbohydrate metabolism. With a full range of nutrients at balanced ratios, you will see an improvement in both quality (terpenes, cannabinoid profiles and potency) and yield.

**SUGGESTED USE:** Standard application rate: 4-8 ml/gal. This product works best when pH is unadjusted before application. A pH range of 3.0-6.0 with these products is safe for plants. Adjust as needed. Apply as a drench in any type of growing media or hydroponic system. Add desired amount of GROW A to water and mix well, then add equal parts of GROW B to water and mix well. If using additives, mix them in after you've mixed together the A & B.

- 3000620 Grow 2.0 A - Quart Conc.
- 3000621 Grow 2.0 A - Gallon Conc.
- 3000625 Grow 2.0 B - Quart Conc.
- 3000626 Grow 2.0 B - Gallon Conc.

Cannot be shipped to the following states: See online for current data.



## Bloom 2.0 A & B

Build Your Best Buds With This Nutrient Duo.

**DESCRIPTION:** This two-part nutrient product has been developed with top-shelf ingredients to provide your flowering plants with high performance inputs in their reproductive stage for exceptional bud development and structure. With a full range of nutrients at balanced ratios, you will see an improvement in both quality (terpenes, cannabinoid profiles and potency) and yield with these easy-to-use liquids. Stabilizes phosphorus and enhances its availability and absorbency. Strengthens amino acid output and availability and supports the shikimic pathway. Allows for improved uptake and use of nitrogen.

**SUGGESTED USE:** Apply as a drench in any type of growing media or hydroponic system. Works best when pH is unadjusted before application. A pH range of 3.0-6.0 with these products is safe for plants. If using additives, mix them in after you've mixed together the A & B. Standard application rate: 8-12 ml/gal. Add desired amount of BLOOM A to water and mix well, then add equal parts of BLOOM B to water and mix well.

- 3000630 Bloom 2.0 A - Quart Conc.
- 3000631 Bloom 2.0 B - Gallon Conc.
- 3000634 Bloom 2.0 B - Quart Conc.
- 3000635 Bloom 2.0 B - Gallon Conc.

Cannot be shipped to the following states: See online for current data.



## Bulk 2.0 PK Booster, 2-12-3

Give Your Plants A PK Boost & Stand Back & Watch Them Bloom!

**DESCRIPTION:** This PK booster contains high-quality phosphorus, potassium and calcium to boost flower production. While these minerals are essential to healthy growth at any stage, this formula has been specially developed for use in the flowering stage of cannabis production. This powerful blend will give plants that extra push to maximize flower yields. Use Week Three of Flower through Week Six of Flower.

**SUGGESTED USE:** Standard dilution rate: 2-6 ml/gal. This product works best when pH is unadjusted before application. A pH range of 3.0-6.0 with these products is safe for plants. Apply as a root drench in any type of growing media. Add desired amount to solution after mixing in base nutrients. Use as an additive to base nutrients or use it on its own.

- 3000556 BULK 2.0 PK Booster - Quart
- 3000557 BULK 2.0 PK Booster - Gallon

Cannot be shipped to the following states: See online for current data.



## E-Plus 2.0

Traditional Ingredients For Modern Growers.

**DESCRIPTION:** Well-known and time-proven ingredients for strong plant growth and overall exceptional plant health: calcium for strong, thick cell walls; humic acid as a chelating agent to micronutrients; help for its naturally occurring growth hormones and yucca to keep water and nutrients moving in the soil. Use as an additive to base nutrients or use it on its own.

**SUGGESTED USE:** Use as a root drench in any type of growing media. Works best when pH is unadjusted before application; range should be 3.0-6.0. Standard dilution rate: 2-4 ml/gal. In cannabis production, use Week One of Veg through Week Six of Flower.

- 3000545 E-Plus 2.0 - Gallon
- 3000546 E-Plus 2.0 - Gallon

Cannot be shipped to the following states: See online for current data.



## Geoflora VEG & BLOOM Combo Pack

**A Two-Part Solution To Maximize Your Plants' Production Potential**

**DESCRIPTION:** These organic fertilizers are packed with high quality ingredients, including beneficial bacteria, to take your plants smoothly through the growth stage and into the phase of bountiful blooms. Geoflora VEG helps establish strong microbial activity in your soil, which aids in nutrient availability and uptake for healthy, fertile plants. Geoflora BLOOM eases up on the nitrogen (N) while providing strong phosphorus (P) and potassium (K) levels. These macro and micro-nutrients are aided in their task by the beneficial bacteria. The granular form of these products makes for easy, dust-less application with no pre-mixing needed. Geoflora VEG & BLOOM can each be used individually, or as a stand-alone system.



**SUGGESTED USE: Amending** - Mix 8 oz. per cubic foot of growing medium prior to transplant. For small applications, use 1 oz. per 1 gallon prior to transplant and for soil amending purposes, apply 1 oz. per sq. ft. **Top Dress** - Apply 8 oz. per cubic foot of growing medium every 14 days. Water in thoroughly.

**1305691** Geoflora VEG & BLOOM - 8 lbs. of Each **\$79.99**

**Both products are available individually and larger sizes are available individually and in the combo packs.**

**Cannot be shipped to the following states:** AL, AK, DC, FL, GA, HI, ID, IA, KS, KY, LA, MS, MO, NE, NC, ND, SC, SD, TN, UT, VA, WI, WY

## High Phos Bat Guano, 3-6-1

**Provides A Healthy Dose of Both Phosphate & Calcium.**

**DESCRIPTION:** This high-quality guano is produced by insect and fruit eating bats in the jungle of Indonesia (where it's sustainably managed and harvested). It's 42% organic material and contains a significant amount of both phosphate and calcium. Phosphates spur root growth, smooth the way for optimal nutrient uptake and help create plentiful, high-quality blooms and foliage. Calcium is essential for strong plant tissues, vigorous growth and healthy cell activity.



**SUGGESTED USE:** Gardens & landscapes: Up to 22 lbs/ 1000 sq. ft. Gently dig into the soil surface once per month or as desired. Transplanting & premixing soil and top dressing: 1 tsp/gal soil or growing medium. Tea mixes: 2 Tbsp/gal into a mesh bag, never loose in solution.

**1300130** High Phos Bat Guano - 5 lbs. **\$16.95**

**Cannot be shipped to the following states:** CA, ID, WA

## Fish Sh!t

**Provides A Robust & Diverse Microbe Profile For Multiple Plant Benefits.**

**DESCRIPTION:** This OMRI listed soil conditioner is a byproduct of a Tilapia farm where the fish are fed a propriety mix of organic feed. At the proper time, the digested feed is carefully harvested and bottled under strictly managed conditions. The result is a product with a complex microbial profile of thousands of different species of bacteria, fungi and protozoa. These microbes are essential to maintaining a living soil and to growing top quality plants. Fish Sh!t will increase yield and nutrient uptake, release essential oils and terpenes for aromatic and flavorful plants and fruits, and promote overall health to keep your plants growing and producing at their highest level.



**SUGGESTED USE: Soil:** Can be used in conjunction with any nutrient line and in all phases of the plant's lifecycle. 3-6 mL per gallon. **Hydro/Coco:** 2-4 mL per gallon.

<b>1315100</b>	Fish Sh!t - 120 mL (4 oz.)	<b>\$19.88</b>
<b>1315101</b>	Fish Sh!t - 250 mL (8.5 oz.)	<b>\$33.75</b>
<b>1315102</b>	Fish Sh!t - 500 mL (17 oz.)	<b>\$56.25</b>
<b>1315103</b>	Fish Sh!t - Liter (34 oz.)	<b>\$101.25</b>



## Asperello T34 Biocontrol



**Multiple Applications & Modes of Action Makes This Fungicide/Bactericide Especially Effective.**

**TARGET:** *Botrytis*, black stem, blights, *Fusarium*, leaf blotch, root rots, *Phytophthora*, *Pythium*, *Rhizoctonia*, *Sclerotinia* and more.

**DESCRIPTION:** This biological fungicide/bactericide uses the dried spores of the beneficial fungus *Trichoderma asperellum* strain T34 to provide plant protection, boost overall plant growth, and improve plant defenses against plant diseases and abiotic stresses. Meant to be used preventatively. Optimal soil temperature for use is 68-86°F. High spore count for rapid root colonization and faster protection.

**SUGGESTED USE:** Apply at plant propagation and continue to use throughout crop cycle. DO NOT apply to mushrooms. Seeds: 0.1-3.2 oz/cwt seed. Dips: 0.35-0.7 oz/12 gal water. In soil: 0.17-0.35 oz/2-10 gal water and apply to 1 cu. yd. substrate. Drench at propagation (seed trays, multi-pots): 1.8 oz/1,000 sq. ft. Drench at or after transplanting: 0.7 oz/100 gal water. Foliar application: 0.5-2.5 oz/10,000 sq. ft. in 12-25 gal water (ensure full coverage but avoid run off).

<b>1332924</b>	Asperello T34 Biocontrol - 250g	<b>\$144.99</b>
<b>1332925</b>	Asperello T34 Biocontrol - 500g	<b>\$264.99</b>
<b>1332928</b>	Asperello T34 Biocontrol - 250g - CA Label	<b>\$144.99</b>

**Cannot be shipped to the following states:** 1332924 & 1332925: CA, DC, DE, HI, ID, LA, MS, MT, NE, ND, OR, WV, WY 1332928: All states but CA.



## BotryStop™ WP Biofungicide



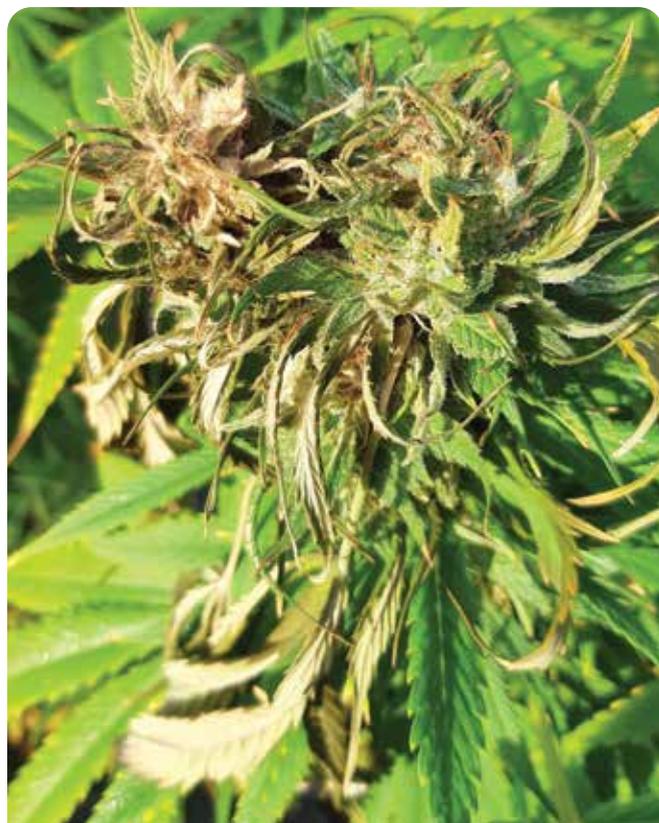
**These Fungal Spores Will Fight To Replace Pathogens On Plants.**

**TARGET:** *Botrytis cinerea*, *Sclerotinia sclerotiorum* and *Monilinia* spp.

**DESCRIPTION:** This OMRI-listed biofungicide uses the non-pathogenic saprophytic fungus *Ulocladium oudemansii* strain U3 as its active ingredient. It will out-compete the pathogens for space and nutrients on plant surfaces and in dead and deteriorating plant tissue without harming healthy tissue. Can be used on a wide range of crops grown indoors and outdoors. Excellent for resistance management and IPM programs. WP formula stable at room temp for 12 months. 4-hr REI/0-day PHI.

**SUGGESTED USE:** Apply when conditions are conducive to disease development, but before pathogens appear. Do not apply through any irrigation system. A non-ionic surfactant or spreader/sticker is recommended. Rate range is 2-4 lb/acre (most commonly 3 lb/acre) Complete coverage of plant surfaces is required. Don't let spray mixture stand overnight or for prolonged periods.

<b>1332845</b>	BotryStop WP Biofungicide - 12 lbs.	<b>\$350.00</b>
<b>1332847</b>	BotryStop WP Biofungicide - 30 lbs.	<b>\$765.00</b>



## Mycostop®



**A Versatile & Highly Effective Stand-Alone Biofungicide.**

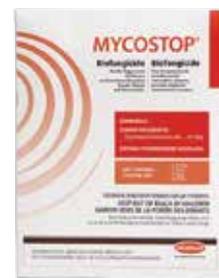
**TARGET:** *Fusarium*, seed or soil-borne damping off, *Alternaria*, *Phomopsis*, *Botrytis*, *Pythium*, *Phytophthora* and *Rhizoctonia*.

**DESCRIPTION:** This classic biofungicide contains mycelium and spores of *Streptomyces* Strain K61, a naturally occurring bacterium derived from *Sphagnum* peat. This strain controls some of the most destructive of plant pathogens by rapidly colonizing plant roots, displacing the pathogenic fungi there and robbing it of nutrients; disrupting and ultimately breaking down the cell wall of the pathogens and producing metabolites that constrain the pathogens while encouraging plant defense mechanisms and healthy growth. For best results, use preventatively.

**SUGGESTED USE:** Can be applied as a seed treatment, in potting media, as a transplant or cutting dip, soil spray or drench applications or in an irrigation system. In most applications, use in the form of an aqueous solution. A suspension of 0.01% to 0.1% by weight is a basic rate for soil applications. Repeat every 2-6 weeks as needed for diseases control. Use the higher rate and more frequent application for high disease pressure and for larger plants.

<b>1332981</b>	Mycostop - 5 grams	<b>\$50.00</b>
<b>1332982</b>	Mycostop - 25 grams	<b>\$150.00</b>

**Cannot be shipped to the following states:** AL, AK, DC, HI, GA, ID, IA, LA, NE, ND, SC, SD, TN, VA, WV, WY



## RootShield® Plus Granules & RootShield® Plus WP



Use This Biological Fungicide To Eliminate Hard To Control Diseases!

**TARGET:** Plant pathogens and resulting diseases such as *Phytophthora*, *Rhizoctonia*, *Pythium*, *Fusarium*, *Thielaviopsis*, and *Cylindrocladium*.

**DESCRIPTION:** OMRI listed and EPA registered, this product will help eliminate damaging fungal pathogens by colonizing plant root systems and by boosting biological diversity of the rhizosphere. This unique product is comprised of live microbial beneficial fungi *Trichoderma harzianum* strain T-22 and the newly developed *Trichoderma virens* strain G-41, delivering an extended array of pathogen control.



**SUGGESTED USE:** For control and prevention of major fungal pathogens and resultant diseases on greenhouse and nursery vegetables, herbs, ornamentals, fruits, conifer tree seedlings, various trees, legumes, oil seeds and peanuts. One application will last for approximately 12 weeks, and can be used with a 0-hr REI. This product can be used in conjunction with certain other fungicides, see label and other online resources for details.

For granular usage, mix about 1.5-3 lbs. to 1 cu. yd. of mix or about four 40 lb. bags to 100 cu. yds. of soil mix. For WP, use about 6 oz. of powder to 100 gal. of water. For plug trays, flats and small pot with 1-3 in. of soil, use about 100 gal. mix/800 sq. ft. For beds and pots 4-5 in. deep, use about 100 gal. mix/400 sq. ft. For azalea pots 6 in. deep, use about 100 gal. mix/1600 pots.

- |                |                                       |                 |
|----------------|---------------------------------------|-----------------|
| <b>1332756</b> | RootShield Plus WP - 1 lb. Bag        | <b>\$150.00</b> |
| <b>1332757</b> | RootShield Plus WP - 3 lb. Box        | <b>\$310.00</b> |
| <b>1332755</b> | RootShield Plus Granules - 40 lb. Bag | <b>\$485.00</b> |

Larger sizes available.

**Granular cannot be shipped to: AK • WP cannot be shipped to: AK**

## LALSTOP® G46 WG



A New Branding For An Old Favorite – Prestop WG.

**TARGET:** Use to control seed-borne and soil borne plant diseases such as damping-off, root and stem rot, charcoal rot and wilt. Also, certain storage diseases caused by *Helminthosporium* and *Rhizoctonia*; and foliar diseases like grapevine trunk diseases (several pathogens).



**DESCRIPTION:** This organic granular fungicide contains the naturally occurring fungus *Gliocladium catenulatum* Strain J1446. The mycelia and spores from this strain move into and take over the rhizosphere and aerial parts of the plant. Once there, they fight disease-causing fungal pathogens with hyperparasitism, by competing for resources, and by inhibiting pathogen growth. 4-hr REI & 0-day PHI. 1 yr shelf life.

**SUGGESTED USE:** For use on plants grown in soil or soil-less media indoors, outdoors, in greenhouses & in hydroponics. General use rate: 0.05% (10 grams/5 gals of water). Apply every 3-6 weeks depending on disease pressure.

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|----------------|-------------------------------|-----------------|
| <b>1332987</b> | LALSTOP G46 WG - 100 g packet | <b>\$145.00</b> |
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**Cannot be shipped to the following states:** HI, DC

## CEASE® Biological Fungicide



For Control Of Soil Pathogens That Cause Fungal & Bacterial Plant Diseases.

**TARGET:** *Alternaria*, Anthracnose, *Botrytis*, *Didymella bryoniae* (gummy stem blight), *Entomosporium*, *Erwinia*, *Fusarium*, powdery mildew, *Pseudomonas*, *Xanthomonas*, *Rhizoctonia*, *Pythium*, *Phytophthora* and more.



**DESCRIPTION:** Cease is an organic contact fungicide/bactericide containing a patented strain of *Bacillus subtilis*. It works by occupying space that the invading pathogens would use and then it disrupts the germination and growth of those pathogens. OMRI listed and NOP compliant. Can be used in combination and/or rotation with other products. 0-day PHI interval and 4-hours REI. No phytotoxicity or residues on flowers or foliage.

**SUGGESTED USE:** Use 2-8 qts/100 gals water about once a week. See label for crop and disease-specific directions. Suitable for wet applications, but use of a spreader/sticker is recommended under those conditions.

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|----------------|--------------------------------|-----------------|
| <b>1332724</b> | Cease - Gallon                 | <b>\$115.00</b> |
| <b>1332727</b> | Cease - 2.5 Gallons            | <b>\$235.00</b> |
| <b>1332725</b> | Cease - Gallon, Case of 4      | <b>\$414.00</b> |
| <b>1332728</b> | Cease - 2.5 Gallons, Case of 2 | <b>\$440.00</b> |

## Earth's Ally® Disease Control



OMRI Listed. Disease Control That You Can Feel Good Using.

**TARGET:** Powdery mildew, downy mildew, blight, canker, black spot and leaf spot.

**DESCRIPTION:** This broad-spectrum organic fungicide uses citric acid to provide a high level of efficacy without leaving any harmful residue on your plants or in the environment. Can be used on all plants and trees, grown indoors or outdoors. Cures and prevents the most common plant disease that growers and gardeners struggle with. Tested and proven safe for bees. 0-day PHI. Minimum risk pesticide exempt from EPA registration under FIFRA 25(b).



**SUGGESTED USE:** For best results, apply at the first sign of disease. Thoroughly cover all plant parts. Reapply every 7 days. For heavy disease, apply and wait 4 hrs, then repeat application a second time. Repeat this process every 5 days, as necessary. For concentrate use: 1 qt makes up to 10 gals. Mix 3 oz. (or 6 Tbsp) of concentrate with 1 gal of water.

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|----------------|--|----------------|
| <b>1459300</b> | Earth's Ally Disease Control - 24 oz. RTU  | <b>\$12.99</b> |
| <b>1459301</b> | Earth's Ally Disease Control - Quart Conc. | <b>\$23.99</b> |



## Actinovate® AG

Developed For Commercial Ag – Now Available To All Growers.

**TARGET:** Use to control damping-off, root and stem rot, charcoal rot and wilt caused by many different pathogens. Also controls Downy Mildews and Powdery Mildews.

**DESCRIPTION:** This organic biological fungicide/bactericide uses a microbe (*Streptomyces lydicus* WYEC 108) for the suppression and control of a wide swath of soil-borne and foliar diseases. This *Streptomyces* strain will colonize the root system and foliage of plants, which will not only displace pathogenic fungi present there, it will protect it from further fungal development. Water-soluble, will not clog machinery and doesn't require constant agitation when applying. 4-hr REI.

**SUGGESTED USE:** Use in foliar applications, as a soil drench, in irrigation, chemigation, as a dip, and more. Do not use at temperatures below 45°F. Foliar Spray: Mix with 10-150 gals water/acre (in CA, mix with 20-150 gals water/acre). Apply initial application prior to disease onset or in the early stages of disease development. Crop-specific instructions on label.

**1420012** Actinovate AG - 18 oz. Bag **\$145.00**  
 Cannot be shipped to the following states: DC, HI, MD, MN, MS, OK, VA, VT



## Cueva® Fungicide Concentrate

Kills Fungal & Bacterial Plant Diseases With Good Ole' Copper Soap.

**TARGET:** *Alternaria*, anthracnose, spots, bacterial blast, bacterial cankers, specks, rots, black pod, blotch, molds, *Botrytis*, downy mildew, fireblight, fly speck, leaf smut, knots, powdery mildew, *Rhizoctonia*, rusts, scab & more.

**DESCRIPTION:** Organic Cueva combines a soluble copper fertilizer with a fatty acid to create a true soap in a patented flowable liquid formulation. This formula lets the product spread easily across plant surfaces and helps the copper get into fungal or bacterial cells and destroy them. As it moves across the plants and into the cells, it forms a protective layer that creates a hostile environment for pathogens.

**SUGGESTED USE:** On vegetables, field-grown herbs and crops, nuts, fruits, citrus and berries: Mix 0.5-2.0 gals/30-100 gals of water and apply to one acre. Begin treatment when disease first appears and reapply at 7-10 day intervals. This schedule may vary somewhat according to crop specific application needs. Use the higher rate following heavy rain or when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application. Use the higher rate to control diseases that may go dormant and overwinter.

**1332920** Cueva Fungicide Concentrate - 2.5 Gallons **\$143.50**



## Regalia® CG & Regalia®

OMRI Listed Control For Both Bacterial & Fungal Diseases.

**TARGET:** Powdery mildew, downy mildew, white mold, early blight, shot hole, *Fusarium*, bacterial spots and specks, brown rot, *Rhizoctonia* and more.

**DESCRIPTION:** This biofungicide uses a plant (*Reynoutria sachalinensis*) extract to protect crops from certain soil-borne or foliar diseases and to boost production by improving overall plant health. Regalia can be used in multiple application methods on field and edible crops in conventional, sustainable and organic production. Unique FRAC P<sub>5</sub> classification. 4-hour REI.

**SUGGESTED USE:** Use early for disease prevention and overall plant health and through the season for continued disease control. Small Scale Applications: 2 Tbsp./gal. of water. Foliar Applications: Downy Mildew and White Mold: 2-4 qts/acre. Soil Applications: *Fusarium*: 3-4 qts/acre.

**1332968** Regalia CG - Quart **\$51.00**  
**1332969** Regalia CG - Gallon **\$120.00**  
**1332970** Regalia - 2.5 Gallons **\$240.00**



## MilStop SP Foliar Fungicide

Excellent For Controlling Powdery Mildew & Other Fungal Diseases!

**TARGET:** Powdery mildew, *Alternaria* blight, anthracnose, black spot, *Botrytis* blight, *Cercospora* leaf spot, downy mildew, *Phomopsis* blight, and *Septoria* leaf spot.

**DESCRIPTION:** MilStop SP is an OMRI listed foliar fungicide. Potassium bicarbonate-based fungicide that kills powdery mildew on contact by pulling water from spores and their growing strands. It also inhibits enzymes involved in fungal cell wall formation by altering the pH on the leaf surface. Foliar applications provide 1-2 weeks of residual protection.

**SUGGESTED USE:** Generally 2.5 lbs./100 gal. of water. (See label online for specific crops, diseases and application systems.)

**1332766** MilStop SP Foliar Fungicide - 5 lbs. **\$82.00**  
**1332767** MilStop SP Foliar Fungicide - 25 lbs. **\$300.00**



## Procidic<sup>2</sup>



**This Organic Fungicide/Bactericide Works Two Ways: On Contact & Systemically.**

**TARGET:** *Agrobacterium*, *Alternaria*, anthracnose, bacterial complex, black chaff, black sigatoka, *Botrytis*, cankers, citrus greening, damping off, dirty grain, downy mildew, *Fusarium*, gummosis, leaf streak, leaf stripe, lettuce drop, mummy berry, root tumor, rust, spots, specks, wilts and more.

**DESCRIPTION:** This WSDA certified foliar spray uses citric acid to eliminate pathogenic fungi and bacteria. This exceptional product will work on contact, but is also absorbed rapidly into the plant. Once inside, it will work its way towards the apex of plant. This action allows new tissue to grow infection-free. Additionally, as it moves through the plant, it stimulates the production of phytoalexins (a plant's natural defense against microbial attacks), which inhibits the future growth of fungi and bacteria. May be applied in regular foliar spray applications or in tank mixes and there is no maximum number of applications per season. 0-hour REI and 0-day PHI.

**SUGGESTED USE:** Best when applied preventatively. Procidic<sup>2</sup> has disease-specific application rates that can be found on the manufacturer's label.

<b>1458230</b>	Procidic <sup>2</sup> - 32 oz. Concentrate	<b>\$80.00</b>
<b>1458231</b>	Procidic <sup>2</sup> - Gallon Concentrate	<b>\$280.00</b>

**Cannot be shipped to the following states:** AL, AK, GA, HI, ID, IN, KY, MS, MT, NC, SC, SD, TN, UT, WV, WI, WY



## Serenade ASO



**Contains A Powerful Soil Bacterium That Controls Many Common Diseases.**

**TARGET:** *Alternaria*, Anthracnose, Blights, *Botrytis*, Damping-Off, Downy Mildew, *Erwinia*, *Fusarium*, Leaf Spots, *Monilinia*, Phomopsis, Powdery Mildew, *Pseudomonas*, *Pythium*, *Rhizoctonia*, *Sclerotinia*, Sooty Blotch, Sour Rot, *Xanthomonas* and more.

**DESCRIPTION:** Designed to be applied preventatively, this OMRI-listed biofungicide uses *Bacillus subtilis* QST 713 to control soil and foliar bacterial and fungal diseases. It forms a biofilm around seeds, roots and transplants; kills outright; promotes enhanced photosynthesis and healthy growth that can ward off disease. Can be applied to most common crops. Non-toxic to beneficials. 0-day PHI & 4-hr REI. No resistance risk.

**SUGGESTED USE:** Apply with spray equipment for ground and aerial applications and irrigation systems used for chemigation. Most effective when used preventatively. May be used with other fungicides and pesticides (with restrictions). Rate: 2-6 qts/acre or 1.28-3.8 oz/gal of water. Re-treat in 2-10 day intervals. A surfactant may improve efficacy.

<b>1332910</b>	Serenade ASO – 2.5 gallons	<b>\$140.00</b>
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## Stargus<sup>TM</sup>



**From A Leader in Bio-Innovations Comes This Triple-Action Biofungicide.**

**TARGET:** Foliar and soil-borne plant diseases like downy mildew, *Botrytis*, *Fusarium*, white mold and many more.

**DESCRIPTION:** This organic biological fungicide uses *Bacillus amyloliquefaciens* strain F727 to deliver several modes of action against fungal and bacterial pathogens. Stargus uses the *Bacillus* rhizobacterium to colonize root and plant surfaces, which prohibits the pathogens from accessing the plant. It also has a protective effect by inducing a systemic resistance and acquired resistance response within the plant and a curative effect by inhibiting mycelial growth and sporulation of the fungus on the leaf surface. MRL exempt. 0-day PHI and 4-hr REI.

**SUGGESTED USE:** Can be used alone or in rotation. Labeled rates of 2 quarts to 4 quarts/acre. Usual recommendation of 2 qts/acre. Apply 2-4 times at 7-10 day intervals.

<b>1332975</b>	Stargus - 2.5 Gallons	<b>\$205.00</b>
<b>1332976</b>	Stargus - 2.5 Gallons - Case of 2	<b>\$369.00</b>



## Thyme Guard<sup>®</sup>



**The Highest Percentage Of Thyme Oil Readily Available On The Market Today.**

**TARGET:** Diseases: *Botrytis*, blights, *Phytophthora*, powdery & downy mildew, citrus canker & Citrus Greening (HLB). Insects: thrips, aphids, psyllids, scale, whiteflies & mites.

**DESCRIPTION:** This unique product contains a strong dose thyme oil. This essential oil is well known to be highly effective against bacterium, fungi and viruses and sucking insects. With plant pathogens, it attacks and breaches the cellular membranes of pathogens, causing their death. As an insecticide, it works as an endocrine disruptor, suffocant and repellent. 100% biodegradable, will not generate resistance and can be used at any time in the growing cycle. Effective against the Asian citrus psyllid.

**SUGGESTED USE:** Tank mixable with most other chemicals, but it is best to use other products in rotation with this one. Do not mix with peroxides and/or sulfonated fungicides (which may cause phytotoxicity). Always test for compatibility. For established crops: Dilute at a rate of 0.5% (2 qts./100 gals. water or 1:200). For new crops & prevention: Dilute at a rate of 0.25% (1 qt./100 gals. water or 1:400).

<b>1458300</b>	Thyme Guard Concentrate - 32 oz.	<b>\$32.97</b>
<b>1458301</b>	Thyme Guard Concentrate - Gallon	<b>\$118.33</b>

**Cannot be shipped to the following states:** CT, IN, KY, MD, MA, MT, NV, NM, NY, PA, SD, VT, VA, WY





## The Power of Peroxyacetic Acid

Similar in chemical makeup, SaniDate 5.0 and OxiDate 2.0 are two very different products with very different uses.

**SaniDate 5.0** is a no rinse required sanitizer for greenhouse use. Using a peroxy compound, SaniDate can quickly and effectively reduce harmful pathogens. Not only can this product be used on hard surfaces in the greenhouse, it can be used for equipment sanitation, food prep surfaces and also irrigation lines. It can also be used as a post-harvest sanitizer. Mix SaniDate in your dip tank or spray directly onto harvested fruits and vegetables to prevent the pathogens that cause spoilage. SaniDate is a great, environmentally responsible alternative to chlorine.

**OxiDate 2.0** is a pre-harvest bactericide and fungicide. OxiDate can be used in certified organic and conventional agriculture. Not only does OxiDate help prevent plant pathogens, it works as a curative product by killing fungal spores and bacterial inoculum. OxiDate does not have a REI and can be used until harvest. This product can be tank mixed with fungicides and insecticides for extra protection and because of the active ingredient is peroxygen, there is not concern of resistance.

## ZeroTol® HC



Clean Up & Protect Your Plants With One Powerful Product.

**TARGET:** *Alternaria*, Anthracnose, *Aphanomyces*, molds & mildews, bacteria, spots & rots, *Erwinia*, *Phytophthora* (blights, rots), *Plasmopara*, *Pseudomonas*, *Pythium*, *Rhizoctonia*, rust, scab, smut, *Thielaviopsis*, *Xanthomonas*, wilts & blights, fungi, algae and Tobacco Mosaic virus.

**DESCRIPTION:** ZeroTol HC has been designed for use in hemp and cannabis production and for homeowners and hobby growers. Use this OMRI listed product on hard, non-porous surfaces to eliminate pathogens that linger there. It can also be applied to soil and directly to all kinds of plants to prevent/treat/control many common plant diseases and algae growth. Made from Hydrogen Peroxide and Peroxyacetic Acid. No strong odor or toxic residue.

**SUGGESTED USE:** Do not combine or mix with any other pesticide concentrates. Do not reuse solution; make fresh daily. Surfaces/equipment: Dilute at 1:150 or .85 fl oz/gal water. Foliar: Dilute at 1:150 or .85 fl oz/gal water for initial treatment. Apply as needed for control. For prevention: Apply every 5-7 days at 1:200 or 0.64 fl oz/gal water. If disease reappears, apply every 3 days. Turf: Dilute 1.3 fl oz/gal water. 3-10 gals treats approximately 1,000 sq. ft.

- 1222410 ZeroTol HC - Gallon Concentrate **\$42.99**
- 1222412 ZeroTol HC - Gallon Concentrate - Case of 4 **\$154.76**

Cannot be shipped to the following states: DC



## OxiDate® 2.0



Bactericide & Fungicide For Wide Use

**TARGET:** Preventative and curative treatment against plant pathogens and diseases such as *Alternaria*, anthracnose, *Aphanomyces*, bacterial spot, bacterial speck, black spot, *Botrytis* (grey mold), brown spot, downy mildew, *Erwinia*, *Fusarium* (root rot), leaf spot, *Phytophthora*, *Plasmopara*, powdery mildew, *Pseudomonas*, *Pythium*, *Rhizoctonia*, rust, scab, smut and *Thielaviopsis*.

**DESCRIPTION:** OxiDate uses the rapid oxidative property of peroxygen to eliminate bacteria and fungi on contact. Use repeatedly on a variety of crops without cultivating resistance or leaving behind any visible residues or odor. OxiDate may also be used for cleaning surfaces, tools, water filters and equipment. Excellent for use in cleaning greenhouses.

**SUGGESTED USE:** Ensure that a minimum ratio of 1:100 is used.

- 1222501 OxiDate 2.0 - 2.5 Gallons **\$230.00**
- 1222502 OxiDate 2.0 - 5 Gallons **\$340.00**

Larger sizes available. All sales are final. No returns or refunds allowed.

\*Free Shipping in the contiguous 48 states. Ships via Ground ONLY.

Cannot be shipped to the following states: DC



## SaniDate® 5.0



An OMRI Listed Sanitizer/Disinfectant.

**TARGET:** Bacteria including *Salmonella*, *Streptococcus*, *E. coli*, *Pseudomonas*, *Staphylococcus aureus*, *Listeria* and molds, including mildew.

**DESCRIPTION:** Contains hydrogen peroxide and peroxyacetic acid as an alternative to chlorine to sanitize and disinfect post harvest equipment, fruit and vegetables and various hard surfaces. Usage industries include farms, dairies, beverage plants, food processing plants, greenhouses, etc. No dumping or run-off restrictions.

**SUGGESTED USE:** For general disinfection, sanitation of surfaces, food safety programs, irrigation systems and greenhouse use mix about 0.5 fl. oz./1 gal. of water. Solution can be applied various ways depending on desired usage. Applications can be made with mops, sponges, spraying devices, etc.

- 1222515 SaniDate 5.0 - 2.5 Gallons **\$230.00**
- 1222517 SaniDate 5.0 - 5 Gallons **\$300.00**

Larger sizes available. All sales are final. No returns or refunds allowed.

\*Free Shipping in the contiguous 48 states. Ships via Ground ONLY.

Cannot be shipped to the following states: AK, HI, PR

**WARNING Corrosive:** Causes irreversible eye damage and skin burns. May be fatal if inhaled or absorbed through skin. Harmful if swallowed. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Wear goggles, face shield, and rubber gloves when handling. Do not enter an enclosed area without proper respiratory protection. Wash thoroughly with soap and water after handling and before eating, drinking, using tobacco or using the toilet. Remove contaminated clothing and wash before reuse. Strong oxidizing agent. Do not use in concentrated form. Mix only with water in accordance with label instructions. Never bring concentrate in contact with other pesticides, cleaners or oxidative agents.



## TweetMint™ Plant Wash

**Keeps Plants Healthy & Your Area Smelling Great.**

**TARGET:** Plants grown indoors or outdoors.

**DESCRIPTION:** The enzymatic action of this all-purpose, highly-concentrated and biodegradable product will get to work on plant surfaces to clean them and create an environment that less conducive to pest infestations. It also serves as an exceptional deodorizer. With regular use, you'll have healthy plants that can better fight off pests as well as a sweet-smelling growing area. Will not harm people, pets or the environment. Can be used on indoor and outdoor plants.

Contains no parabens, dyes, phthalates, fragrances, formaldehyde, MEA, DEA, TEA, most common allergens, or synthetic and/or volatile compounds.

**SUGGESTED USE:** Use 1/2-1 oz of concentrate/gallon of water for low dose and 1-2 oz/gallon of water for high dose. Spray the dilution on the entire plant, both the top and bottom of the leaves. Do not apply (or store) in direct sunlight or in temperatures above 90°F degrees.

<b>1202620</b>	Tweetmint Plant Wash - 16 oz.	<b>\$35.00</b>
<b>1202621</b>	Tweetmint Plant Wash - 32 oz.	<b>\$50.00</b>
<b>1202622</b>	Tweetmint Plant Wash - 64 oz.	<b>\$87.50</b>
<b>1202623</b>	Tweetmint Plant Wash - 128 oz.	<b>\$150.00</b>



## Biofilm Buster Pro



**Clear Your Lines Without Harsh Chemicals Using The Power of Enzymes.**

**TARGET:** Irrigation and hydroponic lines clogged with biofilm.

**DESCRIPTION:** When you use organic fertilizers, nutrients and other inputs, biofilm can develop along your irrigation and hydroponic lines. Up until now, the methods to treat biofilm have all had harsh side effects, but this product uses bio-enzymes (not acids) to actively digest all the layers of biofilm. It can be used without the need to flush your system and will restore your system to 100% capacity. In addition, because extended exposure is harmless to plants and equipment, it can be used regularly in preventative maintenance applications. Also effective against non-biofilm deposits like scale. For use in hydroponics and in all irrigation systems, including drip lines, tape and pipes.

**SUGGESTED USE:** Only use with non-chlorinated water. For serious clogs, set the injector ratio to 1:100. For maintenance and preventative treatments, set the ratio to 1:500. Run system until product is injected throughout the lines. Turn system off and allow product to sit in the lines for at least 8 hours. Turn system on and water plants as normal. Irrigation. Can also be applied directly through a reservoir rather than an injector. For preventative maintenance: Use every 4-8 weeks (See above for ratio to be used).

<b>1202201</b>	Biofilm Buster Pro - Gallon	<b>\$320.00</b>
<b>1202202</b>	Biofilm Buster Pro - 2.5 Gallons	<b>\$775.00</b>



## OxiPhos®



**Two Modes Of Action For Twice The Disease Fighting Power.**

**TARGET:** Use to control and prevent diseases caused by the oomycete group of pathogens.

**DESCRIPTION:** Made with a combination of hydrogen peroxide and phosphorus acid, this product works both systemically and on contact. The phosphorus acid works inside the targeted pathogens to inhibit certain essential metabolic actions and to block enzymes vital to their growth.

It can also spur a plant's natural defense mechanisms. The hydrogen peroxide works on contact to oxidize components of the pathogen's cell membranes, which causes cell breakdown and death. Can be used on all crops, turf and ornamentals in fields, greenhouses and storage areas. Can be applied throughout the growing system.

**SUGGESTED USE:** The following are representative dilution and application rates. See label for more specific information: Foliar spray for downy mildew-1:300 dilution-use 42.3 fl. oz./100 gals. water; apply 30-100 gals. of spray solution/treated acre. Soil drench for *Phytophthora* -1:3,000 – 4.3 fl. oz./100 gals. water. Foliar Spray for *Pythium* on turf-1:300 dilution.

<b>1222570</b>	OxiPhos - 2.5 Gallons Conc.	<b>\$260.00</b>
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All sales are final. No returns or refunds allowed.

\*Free Shipping in the contiguous 48 states. Ships via Ground ONLY.

**Cannot be shipped to the following states:** AK, DC, HI, PR



## WEED BARRIERS

### WeedGuardPlus® - Heavy Weight Rolls

This Tough Weed Block Will Hold Up Under The Elements!

**TARGET:** Use for weed suppression.

**DESCRIPTION:** This paper weed block is adaptable to nearly any size growing operation in nearly any environment. 100% biodegradable; no need to remove it. Saves time; just lay it down before planting and save yourself countless hours of weeding, spraying or disposing of materials. Or apply it on top of existing weeds and/or invasive plant roots and smother them out. Saves money; no need to buy expensive herbicides. Improves yields; your plants will have a chance to establish themselves without competing with weeds. Porous yet strong; so plants can be watered by natural rainfall or by other means. Allows air flow. Maintains this porosity through all but the most severe of weather. Can be applied by machine or by hand. These rolls are excellent for textured soils and/or those projects that are meant to be long-term. 54% heavier than the standard rolls and offers 12+ months of weed control.

**SUGGESTED USE:** Put in place before you install transplants or seedlings, or before you sow seeds. Simply prepare the ground, place over the soil, and cover the edges with dirt. Product may be affected by variances in weather or soil conditions.

<b>1453851</b>	Heavy Weight - Smooth Finish - 36" x 100'	<b>\$37.99</b>
<b>1453852</b>	Heavy Weight - Smooth Finish - 48" x 100'	<b>\$54.99</b>



### EcoMulch Rolls

Season-Long Weed Protection With No Clean Up

**TARGET:** Home gardening, commercial growers, organic growers, nurseries, seasonal landscaping, habitat restoration and more.

**DESCRIPTION:** This is an OMRI listed seasonal-use weed barrier paper that offers superior weed prevention from planting through harvest. Made from 100% natural, biodegradable fibers sourced from corrugated box clippings, this product will decompose slowly over the growing season. At the end of the season till any remaining paper into the soil. Adds texture and organic matter to soil. Porous to allow air, water and nutrients to pass through. Opaque to keep weeds from developing past germination. Creped finish makes it more flexible for easy application and dark color keeps soil warm.

**SUGGESTED USE:** Can be applied by hand, by tractor or by a mechanical mulch layer. Suitable for overhead or drip tape irrigation methods. Do not attempt application on a windy day. Put in place before you sow seeds or install transplants and seedlings. Product may be affected by variances in weather or soil conditions.

<b>1453858</b>	EcoMulch - 24" x 50' rolls - 2 pk - Creped	<b>\$20.99</b>
<b>1453859</b>	EcoMulch - 36" x 50' rolls - 2 pk - Creped	<b>\$28.99</b>



## BROAD SPECTRUM

### Avenger® AG Optima Burndown Herbicide

A Versatile D-Limonene Herbicide That Works Quickly & Thoroughly.

**TARGET:** Grasses and broadleaf weeds (both annual and perennial).

**DESCRIPTION:** This non-selective weed killer uses d-limonene (a natural citrus oil) as its active ingredient and has been developed for agricultural and non-agricultural uses. This clean-smelling citrusy spray will not translocate or stain brick, concrete or pavement. NOP compliant.

**SUGGESTED USE:** Mix in water and apply to all sides of foliage until weeds are thoroughly wet. Spray when temps are above 50°F. Fill spray tank 1/2 full with clean water, add product while agitating. Apply at a 7-10% mixture, depending on the size of the weeds. Use lower rate for smaller weeds and higher rate for larger, hard-to-kill weeds. Use lower rate whenever possible. Do not exceed 5 gals product/acre per application or a total of 16 gals/acre/year. Be careful to avoid spray drift.

<b>1453740</b>	AG Optima - 32 oz. Concentrate	<b>\$35.00</b>
<b>1453741</b>	AG Optima - Gallon Concentrate	<b>\$110.00</b>
<b>1453743</b>	AG Optima - 5 Gallons (Case of 2 x 2.5 Gal.)	<b>\$425.00</b>

Cannot be shipped to the following states: CA

\*Call for freight quote.



### Homeplate®

A Fast-Acting Non-Selective Herbicide That's A Total Vegetation Killer.

**TARGET:** Common annual, biennial and perennial broadleaf weeds as well as algae and moss.

**DESCRIPTION:** This OMRI listed organic spray is a blend of caprylic acid and capric acid that spreads easily for thorough coverage and causes rapid weed burndown. Total kill is generally within 12-72 hours. If rain falls within 3 hrs of treatment, an additional spray may be required. For best results, use during sunny or warm conditions. Optimize your spray coverage and target small weeds. For use in and around all food and non-food crops. 24-hr REI & 0-day PHI.

**SUGGESTED USE:** Can be used in pre/post-planting applications, sucker control, trimming and pruning, as a harvest aid and as a desiccant. Not for use in any kind of irrigation system. Use 3% solution for weeds under 5" tall and for moss and algae. Use 3-6% solution for larger perennial weeds and grasses. Use 5-9% solution for tough to kill weeds, vines, brush and sucker control. Apply the mixed solution at 0.69-9.2 gallons/1,000 sq. ft. (35-400 gallons/acre). In situations where weed pressure is high and/or weeds are larger than 5 inches, higher volumes are advised for acceptable control. Repeat treatment as needed to control new weeds.

<b>1453895</b>	Homeplate - 2.5 Gallons	<b>\$195.00</b>
<b>1453896</b>	Homeplate - 2.5 Gallons (Case of 2)	<b>\$351.00</b>



## AXXE Broad Spectrum Herbicide



**OMRI Listed. Kill Your Weeds & Plant Within Hours!**

**TARGET:** Contact spray control or burn down of weeds and grasses.

**DESCRIPTION:** Controls grasses, broadleaf weeds and most mosses and lichens. Works within hours of application, leaves no residue, does not migrate through soil; allowing for immediate replant after use. This spray is intended to be applied to places with undesirable plant growth. Caution should be taken when using close to desired plants.



**SUGGESTED USE:** Apply as contact spray control or burn down of weeds and grasses for field crops, food crops, pastures, turf, landscapes, greenhouses and around buildings and industrial sites. Repeat spray applications as necessary. Suggested percent volume/volume solutions of AXXE Broad Spectrum Herbicide to use for application:

- Use a 6-8 %: Weeds of 1-inch height or less (and control of liverworts and mosses).
- Use an 8-10%: Weeds between 1-4 inches in height.
- Use a 10-13%: Weeds over 4 inches in height (and hard to control weeds).
- A 15%: Maximum labeled rate for use and can be used to control perennial weeds or extremely dense weed growth.

<b>1222600</b>	AXXE Broad Spectrum Herbicide - 2.5 Gallons	<b>\$135.00</b>
<b>1222601</b>	AXXE Broad Spectrum Herbicide - 5 Gal (2x2.5)	<b>\$260.00</b>
<b>1222602</b>	AXXE Broad Spectrum Herbicide - 30 Gallons	<b>\$1,800.00</b>

Cannot be shipped to the following states: HI  
Larger sizes available.

## Earth's Ally® Weed & Grass Killer

**Simple Ingredients Create Superb Results.**

**TARGET:** Kills all common weeds, including broadleaf, crabgrass, dandelion, clover, ivy, chickweed and more.

**DESCRIPTION:** This non-selective herbicide uses sea salt (sodium chloride) to quickly and thoroughly eliminate unwanted weeds. You'll get the results you want, without the harsh chemicals and harmful side-effects found in glyphosate herbicides. Kills all the way down to the roots with visible results in 3 hrs. Contains no pre-emergent qualities and will not inhibit future plant growth, so you can replant or sod once the area is dry.



**SUGGESTED USE:** Use on a bright, sunny day and be careful to avoid overspray on desirable plants. Do not dilute. Thoroughly wet the weed you want to eliminate. Do not use during rainfall or when the weeds are wet. Multiple applications may be needed for certain tough and dense weeds. Avoid use when pollinators are active, otherwise this product is bee safe.

<b>1459340</b>	Earth's Ally Weed & Grass Killer RTU - 24 oz.	<b>\$12.99</b>
<b>1459341</b>	Earth's Ally Weed & Grass Killer RTU - Gallon	<b>\$29.99</b>

## Torched Weed Killer



**This Non-Selective Oil-Based Herbicide Digs Deep To Kill The Root.**

**TARGET:** Unwanted grasses and weeds.

**DESCRIPTION:** The combination of Clove Oil, Cornmint Oils and soaps offers effective control of unwanted weeds and grasses. When used as directed, Torched is safe for use our people and pets. This non-selective, post emergent herbicide works best at temperatures over 60°F and generally only takes one application (except for those especially tough weeds). It begins working on contact and does not stop until it has killed down to, and including, the root.



**SUGGESTED USE:** Mix 8-10 oz per gal/water. Apply when weeds are actively growing. Re-treat if it rains within 25 hours of spraying. If needed, reapply to hard-to-kill weeds after 5 days. Protect desirable plants during application by shielding them with cardboard or plastic. If accidentally sprayed, immediately rinse the plants and surrounding area with large amounts of water.

<b>1453890</b>	Torched Weed Killer - Gallon	<b>\$74.00</b>
<b>1453891</b>	Torched Weed Killer - 2.5 Gallons	<b>\$149.00</b>

## Organocide Weed Taliator™ Weed & Grass Killer



**A Powerful Surfactant Creates Systemic Action to Kill to the Root**

**TARGET:** Dandelion, crabgrass, ragweed, purslane, chickweed and more

**DESCRIPTION:** Weed Taliator is a non-selective herbicide that uses the power of essential oils delivered with a unique surfactant to tackle weeds and grasses down to the root. Use Weed Taliator on unwanted weeds or grasses around driveways, walkways, gravel beds, fence lines and more. OMRI Listed and safe to use around homes and gardens when used as directed. Available in Ready to Use and Concentrate sizes.



**SUGGESTED USE:** Apply only to unwanted weeds or grasses and protect any desirable plants. For best results apply after morning dew, in full sun, and when temperatures are above 60°F. Spray Ready to Use product on plants until wet. Mix Concentrate product with 6-20 oz per gallon of water. Shake well before and during application.

<b>1453730</b>	Weed Taliator – 24 oz. RTU	<b>\$13.05</b>
<b>1453731</b>	Weed Taliator – Gallon RTU	<b>\$65.23</b>
<b>1453732</b>	Weed Taliator – 16 oz. Conc	<b>\$15.60</b>
<b>1453733</b>	Weed Taliator – 32 oz. Conc	<b>\$24.67</b>
<b>1453734</b>	Weed Taliator – Gallon Conc	<b>\$87.82</b>

Cannot be shipped to the following states: ID, IA, IN, MT, NM

## Tiger 90CR® Organic Sulphur, 0-0-0-90



**Ideal For Acidifying Soil That Is Too Alkaline.**

**TARGET:** Alkaline soils with a pH above 7.0 and plants that love sulphur.

**DESCRIPTION:** When your test results show a pH above 7.0, it is difficult for plants to get the nutrients they need. This OMRI-listed product will lower your soil pH and provide a source of the plant nutrient sulphur for high sulphur-using crops like oil seeds and legumes. This controlled release formulation will give you a steady supply of sulphur throughout the growing season. Application recommendations should be based on soil tests and crop removal rates of sulphur.



**SUGGESTED USE:** 15 lbs./1,000 sq. ft. or 250 lbs./acre and monitor pH level.

**1440077** Tiger 90CR Organic Sulphur - 50 lb. Bag **\$36.50**

\*Pallet quantities available.

## SaferGro pH Down®



**This Gentle Acidifier Lowers The pH In Water To Benefit Your Plants In Many Ways.**

**TARGET:** Water that needs to be adjusted to a lower pH level.

**DESCRIPTION:** This product is made with organic acids to safely lower water pH to a more acidic range. This lower pH breaks down deposits, improves nutrition availability/uptake and provides water at the best pH level for optimum insecticide applications. It is also an excellent overall cleaning solution for equipment, including hydroponic/irrigation lines and nozzles. As an antioxidant, it can be applied to fresh cut fruit and vegetables to extend their shelf life. **Not compatible with calcium thiosulfate.**



**SUGGESTED USE:** Can be used in hydroponic, organic and conventional growing. You will need 2-18 fl oz of product in 10 gals of water, depending upon your desired pH level (4.5-7) and the original pH level (7-9) of your water. The large amounts of product will be for water that has an original high (9) pH that needs to be reduced to a low level (4.5) and vice versa.

**1810981** SaferGro pH Down - Pint Concentrate **\$9.79**

**1810982** SaferGro pH Down - Quart Concentrate **\$13.99**

**1810983** SaferGro pH Down - Gallon Concentrate **\$37.99**

**Cannot be shipped to the following states:** AR, IL, KS, MD, OK, WI

## ThermX™ -70 Natural Wetting Agent



**Overcome Adverse Water Conditions!**

**TARGET:** Increases water & fertilizer uptake.

**DESCRIPTION:** This natural wetting agent is derived from yucca and contains 20% saponin extracted from *Yucca schidigera*. Saponin helps plants overcome adverse water conditions and is a great sticker for other sprays. Use ThermX-70 to increase crop's ability to establish in stressed conditions and increase water and fertilizer uptake. Increases permeability in heavy clay soil and reduces salt and alkali problems by improving drainage. Stimulates root growth, extending the area irrigation reaches.



**SUGGESTED USE: Wetting Agent:** ≈1/4 tsp./gal. water, ≈2-3 oz./acre. **Soil:** ≈1-2 tsp./gal. water, ≈16 oz./acre

**1402403** ThermX-70 Natural Wetting Agent - Quart **\$27.50**

**1402404** ThermX-70 Natural Wetting Agent - Gallon **\$94.50**

**1402405** ThermX-70 Natural Wetting Agent - 5 Gallons **\$350.00**

**1402406** ThermX-70 Natural Wetting Agent - 55 Gallon Drum\* **CALL**

\*Call for freight quote. Call for larger sizes.

## RAW Yucca Flow

**Add Just A Pinch Of This And Watch Your Plants Take Off.**

**TARGET:** Improves nutrient delivery and water retention, prevents nutrient lock-up and removes excess salts.

**DESCRIPTION:** Made from 100% natural yucca extract, this is the perfect addition to any nutrient or foliar spray program. It will keep minerals and nutrients in suspension during delivery and prevent nutrient lock-up. When used in a soil drench or flush, it helps distribute water and nutrients deeper and more thoroughly while pushing out excess salts from the root zone. Fully water soluble and very concentrated. Can be used in all stages of growth and flower. Increases water retention and helps plants recover from drought stress.

**SUGGESTED USE:** Works in conjunction with all nutrient and feeding programs. Add 1/16 to 1/8 tsp./5 gal. water in reservoir for irrigation or final spray solution. Apply directly to soil or foliage as needed. Do not exceed recommended dilution amounts.

**1308420** RAW Yucca Flow - 2 oz. **\$28.85**

**1308421** RAW Yucca Flow - 8 oz. **\$88.85**

**Cannot be shipped to the following states:** AK, MA, ME, MT, NC, NH, PA, RI, SC, TN, UT, VA, WI



## Bug Blaster™

This Magic Wand Will Blast Away Destructive Bugs.

**TARGET:** Aphids, whiteflies, mealybugs, spider mites and other soft bodied insects.

**DESCRIPTION:** With this sprayer, you can quickly and effectively wipe out soft bodied insects and/or rid your plants of detritus. It can also impede mildew growth by keeping plant and other surfaces clean. All without using anything but water. The Bug Blaster nozzle creates a forceful 360° flat spray of water while the slender wand lets you insert it into, under and around the center of the plants to hit every plant surface. The spray will be strong enough to fatally traumatize soft bodied insects from eggs to adults, but will not harm the plants. Uses 60% less water than a standard spray gun.



**SUGGESTED USE:** Absolutely **DO NOT** use with any type of pesticide or fertilizer. Simply screw the Bug Blaster nozzle onto watering wand and connect to your garden hose and you are ready to go. Spray infested plants every 3-5 days for 2-3 weeks. Spray plants that are susceptible to powdery mildew, black spot or rust in the morning to give plants a chance to dry out during the day.

<b>1452530</b>	30" Anodized Blaster	<b>\$24.95</b>
<b>1452535</b>	Replacement Nozzle	<b>\$12.99</b>

## Dustin-Mizer

Apply Dusts Wherever You Need Them.

**DESCRIPTION:** This ingenious applicator is a lightweight tool for applying insecticidal and fungicidal dusts to your garden, but it is equally useful when applying Diatomaceous Earth and other dusts to your barn, chicken coops, kennels and elsewhere. The Dustin-Mizer is built to last with a cleverly-designed extension deflector that allows you to dispense dust up under leaves, underneath boards/structures, and in hard-to-reach places like crawl spaces and attics.



**SUGGESTED USE:** Assemble product before using. Wear a mask and follow any additional dust product safety instructions. Fill hopper with dust product. Point at desired area while turning the handle at a constant speed.

<b>1407001</b>	Dustin-Mizer	<b>\$49.95</b>
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**NEW**

## Boogie Blue Water Filters

A Great Grow Deserves Great Water.

**TARGET:** Chlorine, chloramine, pesticide residue, mercury, heavy metals, dissolved solids, fluoride and other chemicals



**DESCRIPTION:** Whether you are dealing with additives in municipal water, or worry about what-all is in your well water, Boogie Blue filters can help. They attach quickly and easily to your hose and use catalytic carbon and/or KDF membranes to greatly reduce chemical compounds and organic matter in your water (up to 99% of the chlorine and 87% of the chloramine in municipal waters). Available as Boogie Blue Basic, which will last for 10,000-50,000 gallons of spray volume and Boogie Blue Plus, which will last for 40,000-50,000 gallons.

**SUGGESTED USE:** Attach filter to any standard 3/4" hose. Before initial use, flush filter by running water through it for 1 minute or until water runs clear. When not in use, keep attached to hose or remove and keep closed at both ends. Do not leave filter under constant water pressure. When storing, do not allow filter to dry out; storing in a zip-lock type bag works well.

<b>2000600</b>	Boogie Blue Basic	<b>\$29.90</b>
<b>2000605</b>	Boogie Blue Plus	<b>\$59.00</b>

## Exhale CO<sub>2</sub> Bags

A Continuous Shower Of CO<sub>2</sub> Directly Onto Your Plants.

**TARGET:** Plants grown under artificial light.

**DESCRIPTION:** Because plants grown indoor struggle to get enough carbon dioxide to photosynthesize effectively, Exhale CO<sub>2</sub> Bags have been developed to provide the supplemental carbon dioxide they need. The innovative, maintenance-free design of these bags utilizes natural processes of beneficial fungal mycelia to cultivate carbon dioxide 24 hours a day for months without refilling or installing additional equipment. Use in vegetative and flowering stages for increased canopy size, faster growth and prolonged production during budding. Increasing CO<sub>2</sub> levels can also help plants tolerate higher temperatures in grow rooms using bright lighting.



**SUGGESTED USE:** Place bags slightly above the plants in grow room to allow CO<sub>2</sub> to precipitate down onto the cultivated plants. These bags come ready to use and should be placed as soon as possible after delivery. ExHale Micro: Clone domes and seeds trays (3.5 cu ft); produces CO<sub>2</sub> for 3 mos. Exhale Original: Small-med spaces (128 cu ft); produces CO<sub>2</sub> for 6 mos. ExHale XL: Med-large spaces (288 cu ft); produces CO<sub>2</sub> for 6 mos. ExHale 365: Area needing prolonged CO<sub>2</sub> production; produces CO<sub>2</sub> for 9 mos (3 wks to build up to peak output).

<b>2000502</b>	Exhale CO <sub>2</sub> Micro	<b>\$20.95</b>
<b>2000500</b>	Exhale Original Bag	<b>\$27.00</b>
<b>2000503</b>	Exhale CO <sub>2</sub> 365	<b>\$31.50</b>
<b>2000501</b>	Exhale CO <sub>2</sub> XL	<b>\$42.20</b>
<b>2000504</b>	Replacement CO <sub>2</sub> Bag Hanger	<b>\$9.80</b>

Cannot be shipped to the following states: HI, PR, VI

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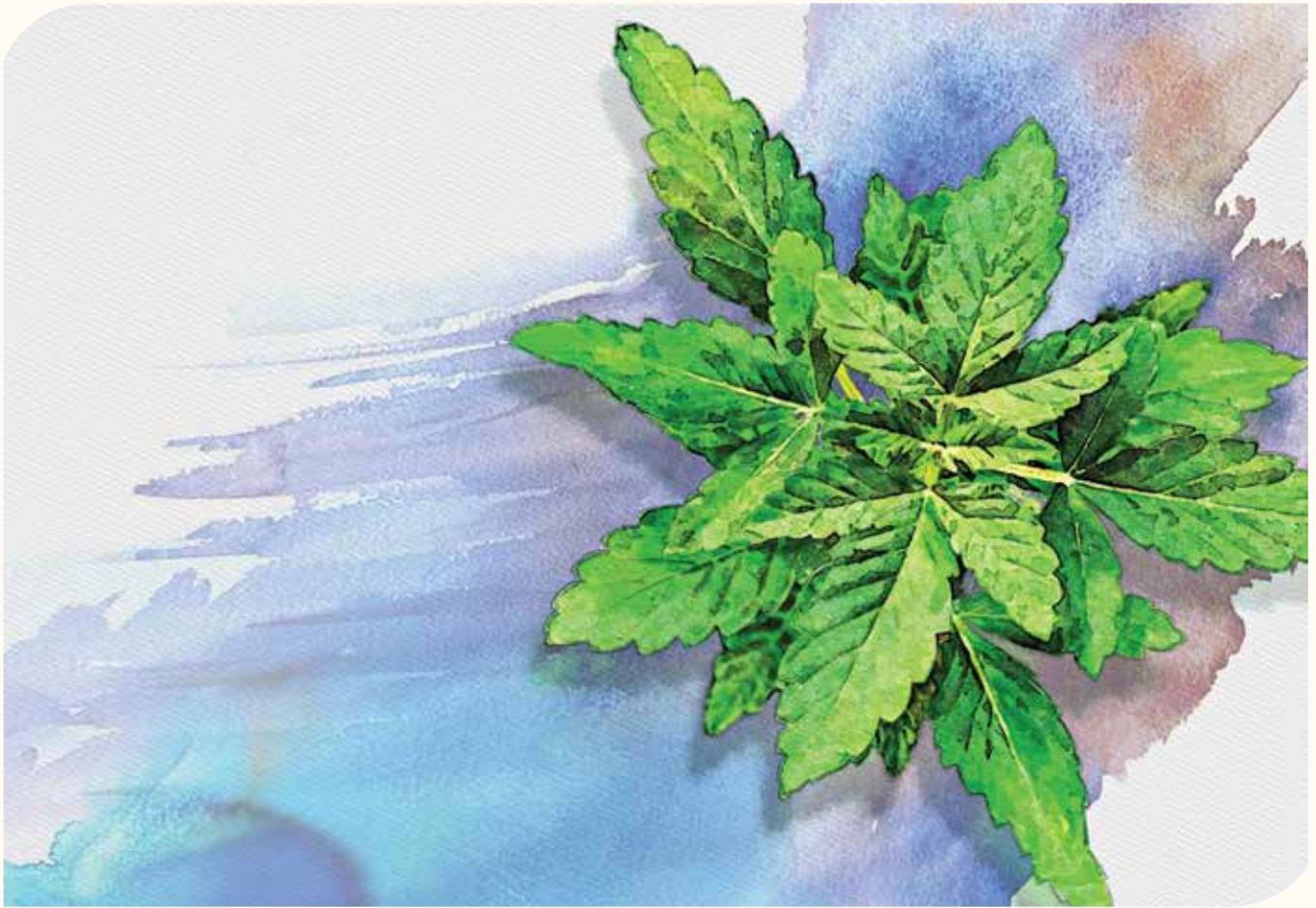
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