

# Cannabis & Hemp

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Beneficial Insects



Mite Predator - *Phytoseiulus persimilis*



Rove Beetle - *Dalotia coriaria*

Specialist Predators & Parasites



Beneficial Nematodes



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## PEST CONTROL

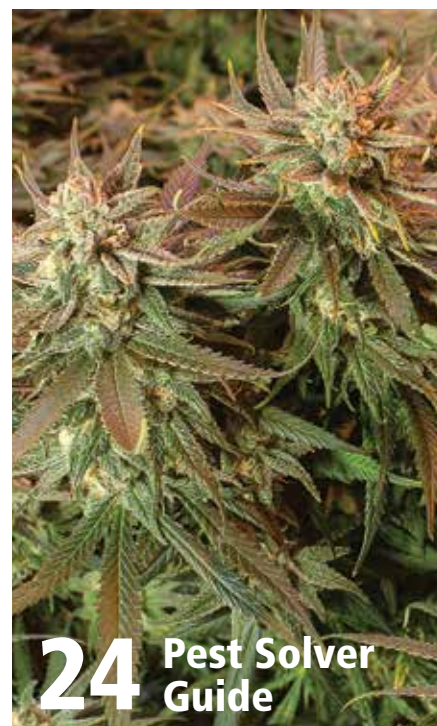
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## Selection Factors

### PEST IDENTIFICATION

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

### TEMPERATURE & HUMIDITY

Predatory insects, like many living things, have requirements for living environments. Keeping temperatures and humidity in ranges for predator activity increases effectiveness. 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.

### INFESTATION LEVEL

Critical in determining your plan of action is the level and spread of the pest infestation. For high or established infestations, a knockdown spray may be necessary PRIOR to introducing beneficial or predatory insects. Know your state regulations and consider choosing a non-synthetic or biorational solution (see pages 26-30).

### DELIVERY METHODS

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

## 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.



### Cyclamen & 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 10 sq. ft.	Best used preventively.
<i>Amblyseius swirskii</i>	70-85°F, 70% RH	10 per sq. ft. biweekly - weekly propagation	Active down to 60°F. Very voracious predator. Eliminate excess webbing or honeydew.
<i>Galendromus occidentalis</i>	80-110°F, 30-40% 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>Mesoseiulus longipes</i>	65-90°F, 45-65% RH	1,000 per 300 sq. ft. 3-5 times biweekly	Indoors only - warmer climates.
<i>Neoseiulus (=Amblyseius) californicus</i>	50-105°F, 40-80% RH	1-2 sachets or 1-4 mites per plant	Use weekly until infestation subsides.
<i>Neoseiulus (=Amblyseius) fallacis</i>	>65°F, >50% 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>	60-77°F, 50-90% RH	10-25 per 1,000 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	1-4 per 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 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.

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

**BULK SIZES:**

<b>1101323</b>	≈25,000 in 200 Mini Sachets w/Hooks	<b>\$150.00</b>
<b>1101350</b>	≈25,000 in 200 Mini Sachets on Sticks	<b>\$162.00</b>
<b>1101325</b>	≈62,500 in 250 Sachets	<b>\$225.00</b>
<b>1101355</b>	≈125,000 in 1,000 Mini Sachets on Sticks	<b>\$650.00</b>
<b>1101322</b>	≈125,250 in 6 x 328 ft. Strips of Sachets	<b>\$600.00</b>

**CONTROLLED RELEASE:**

<b>1101327</b>	≈50,000 in 1 Liter Bottle	<b>\$150.00</b>
<b>1101321</b>	≈125,000 in 5 Liter Bag	<b>\$375.00</b>

**Overnight Shipping Required**

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



## Mite Predator - *Galendromus occidentalis*

**Excellent For Hot & Dry Inland Areas!**

*Image Citation: Photo by E. Beers, WSU- TFREC*

**TARGET:** Two spotted spider mites, russet mites, eriophyid mites, prunus rust mites, blister mites, European red mites; various mites.

**DESCRIPTION:** Early stages are white, turning red or brown depending on pest host consumed. Adults feed on about 6 pest eggs or 1-3 pest adults per day. Females lay approx. 20 eggs in a 30 day lifecycle. Eggs hatch in a few days, and development to adulthood takes about 7-14 days. Ideal for use on fruit trees, vegetables, grapes and field crops.

**Temperature:** Hot 80-110°F **Relative Humidity:** Low 40%

<b>1151202</b>	≈1,000 Count	<b>\$43.00</b>
<b>1151220</b>	≈10,000 Count	<b>\$160.00</b>
<b>1151221</b>	≈50,000 Count	<b>\$450.00</b>

**Overnight Shipping Required**

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## Mite Predator - *Mesoseiulus longipes*

**Originating In South Africa, This Predatory Mite Is Known For Its Quick Hunting Skills In Warmer & Very Dry Conditions.**

*Image Citation: Photo by Merritt Singleton, University of Wisconsin - Madison, Dept. of Entomology*

**TARGET:** Spider mites, two spotted spider mites; various mites.

**DESCRIPTION:** An excellent choice for dry, western states. The female mite predator will lay approx. 50 eggs during a lifespan of approx. 13-40 days. Consumption of pests is dependent upon temperatures and infestation conditions. Use in greenhouses and with taller plants growing under warm lights.

**Temperature:** 65-90°F **Relative Humidity:** 40-60%

<b>1151203</b>	≈1,000 Count	<b>\$38.50</b>
<b>1156301</b>	≈5,000 Count	<b>\$80.00</b>
<b>1156401</b>	≈10,000 Count	<b>\$142.00</b>

**Overnight Shipping Required**

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



## 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.



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

<b>1151201</b>	≈1,000 Count	<b>\$35.00</b>
<b>1151208</b>	≈2,000 Count	<b>\$43.00</b>
<b>1151209</b>	≈5,000 Count	<b>\$65.50</b>
<b>1151210</b>	≈10,000 Count	<b>\$106.00</b>
<b>1151212</b>	≈25,000 Count	<b>\$125.00</b>
<b>1151215</b>	≈25,000 in 200 Mini Sachets	<b>\$162.00</b>

**Overnight Shipping Required**

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

## 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.



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

<b>1151401</b>	≈1,000 Count	<b>\$39.95</b>
<b>1151402</b>	≈2,000 Count	<b>\$52.00</b>
<b>1151403</b>	≈5,000 Count	<b>\$86.75</b>
<b>1151404</b>	≈10,000 Count	<b>\$152.00</b>

**Overnight Shipping Required**

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

## Mite Predator - *Phytoseiulus persimilis*

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

*Image Citation: Photo by David Janzen. All rights reserved to BioBee Sde Elyahu Ltd.*

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

**DESCRIPTION:** These orange and bright red 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.



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

<b>1151204</b>	≈2,000 Count	<b>\$23.00</b>
<b>1151205</b>	≈4,000 Count	<b>\$40.00</b>
<b>1151206</b>	≈6,000 Count	<b>\$54.00</b>
<b>1151207</b>	≈10,000 Count	<b>\$85.00</b>

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## Spider Mite Destroyer - *Feltiella acarisuga*

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

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

**DESCRIPTION:** The entire life cycle is about 15 days. Adults are about 2 mm long, pinkish-brown, and have long legs. Adults do not prey on spider mites, but drink water and nectar. The female adult gall-midges actively search for spider mite colonies and deposit eggs next to them for about 5 days. Eggs laid are .1 x .25 mm in size and are shiny and translucent. They hatch in 2 days. The larvae that hatch from the eggs are .2-2 mm in length and are orange-brown. They feed on all stages of the spider mite for 4-6 days, depending on the temperature, humidity and abundance of spider mites. Larvae pupate inside a white cocoon, usually on the underside of leaves along the veins. It takes 4-6 days to produce an adult.



**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**

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## 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.

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

**1113301** ≈100 Count **\$92.00**

**Overnight Shipping Required**

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



Spider Mite On Cannabis



*For volume and continuity pricing  
please call 1-800-827-2847.*



## Integrated Pest Management of Russet Mites

1. Monitor for russet mites and quarantine new plant material.
2. Clean and sanitize production areas by removing old plant debris.
3. Sulfur is effective in vegetative growth but is incompatible with predatory mites.
4. Oil-based sprays such as SuffOil-X are miticidal in general.
5. The Amazing Dr. Zymes Eliminator and Green Cleaner are excellent foliar spray options.
6. *Stratiolaelaps scimitus* may offer ground level control of russet mites.
7. *Neoseiulus californicus* and *Amblyseius andersoni* offer whole-plant coverage.
8. *Galendromus occidentalis* attacks russet mites in warm/dry environments.
9. PFR-97 20% WDG is an effective biocontrol agent, where allowed.



## Thrips Control



### LIFE CYCLE

Thrips life cycle consists of five life stages: egg, larvae, prepupae, pupae and adult. The full cycle can take up to 30 days to complete, but shortens in higher temperatures. Adults lay their eggs directly into plant tissue giving them a hatching location surrounded by food sources for the larvae and a place to overwinter come fall. Thrips larvae feed voraciously on new growth as they prepare to drop to the soil and pupate. After feeding as larvae, thrips develop into their nonfeeding prepupal and pupal stages from which they hatch into adults. Thrips can go through as many as 12-15 generations per year in warm climates.

### DAMAGE

Adult and larval stages of thrips feed on foliage and flowers causing extensive damage in a short time period under the right conditions. Damage typically shows up as stippling, silverying of the leaves, or discolored patches on the leaf surfaces, but can also be identified by the unique twisting they cause on new growth. Discarded pollen and frass can also be a major issue for orchid, violet and other ornamental growers as the buildup is unsightly and reduces flower longevity. Proactive control is important to limit risk of thrips vectoring disease through feeding.

### CONTROL

- Monitor & Trap
  - Inspect plants early and often for signs of thrips activity or damage
- Biological Controls
  - Use predatory insects when infestation is minimal or moderate. Consider the different life stages requiring control.
- Insecticide Sprays
  - For knockdown control, consider using an insecticide spray for quick reduction in pest population.\*

\*Be aware of state restrictions and regulations as well as end product testing prior to selecting and applying sprays.

## 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:

<b>1101312</b>	≈25,000 in 1 Liter Tube	<b>\$62.00</b>
<b>1101319</b>	≈50,000 in 1 Liter Tube	<b>\$105.00</b>
<b>1101311</b>	≈125,000 in 5 Liter Bag	<b>\$235.00</b>
<b>1101309</b>	≈200,000 Bulk	<b>\$375.00</b>

### CONTROLLED RELEASE:

<b>1101317</b>	≈50,000 in 200 Mini Sachets w/Hooks	<b>\$120.00</b>
<b>1101318</b>	≈62,500 in 500 Mini Sachets on Sticks	<b>\$220.00</b>
<b>1101314</b>	≈125,250 in 6 x 328 ft. Strips of Sachets	<b>\$450.00</b>
<b>1101316</b>	≈125,000 in 1,000 Mini Sachets w/Hooks	<b>\$330.00</b>
<b>1101315</b>	≈250,000 in 1,000 Mini Sachets w/Hooks	<b>\$467.00</b>

**Overnight Shipping Required**

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

**If You're Unsure Which Beneficial Insect Or Predator Is Right For Your Conditions, Call One Of Our Specialists At 1-800-827-2847.**



## 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 or ribbon (see pg. 16).

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

### BULK SIZES:

<b>1152204</b>	≈50,000 in Bran/Vermiculite Mix	<b>\$38.50</b>
<b>1152224</b>	≈50,000 in Vermiculite	<b>\$40.00</b>
<b>1152205</b>	≈100,000 in Bran	<b>\$55.00</b>
<b>1152206</b>	≈250,000 in Bran/Vermiculite Mix	<b>\$100.00</b>
<b>1152223</b>	≈250,000 in Vermiculite	<b>\$112.00</b>

### CONTROLLED RELEASE:

<b>1152225</b>	≈125,000 in 500 Mini Sachets on Sticks	<b>\$80.00</b>
<b>1152221</b>	≈200,000 in 400 Sachets w/Hooks	<b>\$65.00</b>
<b>1152201</b>	≈200,000 in 200 Sachets w/Hooks	<b>\$75.00</b>
<b>1152222</b>	≈250,000 in 1,000 Sachets w/Hooks	<b>\$120.00</b>
<b>1152226</b>	≈250,000 in 1,000 Mini Sachets on Sticks	<b>\$135.00</b>
<b>1152227</b>	≈500,000 in 2,000 Mini Sachets on Sticks	<b>\$245.00</b>
<b>1152220</b>	≈1,602,000 in 6 x 525 ft. Strips of Sachets	<b>\$600.00</b>

**Overnight Shipping Required**

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



## 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**

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



### PRO-TIP: Utilize Beneficial Nematodes Above Ground For Additional Thrips Control

The 1st and 2nd instar of the thrips lifecycle live above ground before moving to root as larvae to pupate. When using Beneficial Nematodes to kill thrips larvae, consider spraying them onto the foliage for additional control. Be sure to cover the underside of leaves. See pages 20-23 for more information on Beneficial Nematodes.

*For volume and continuity pricing please call 1-800-827-2847.*

# APHID CONTROL

## Green Lacewings - *Chrysoperla rufilabris*, *Chrysoperla sp.*



**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 lacewings 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

1110011	≈5,000 Eggs	\$27.00
1110016	≈10,000 Eggs	\$37.80
1110100	≈5,000 Eggs on Cards	\$28.50
1110102	≈10,000 Eggs on Cards	\$45.00
1110105	≈25,000 Eggs on Cards	\$90.00
1110005	Larval Frames ≈400 Larvae	\$25.00**
1110010	≈1,000 Larvae in Bottle	\$24.00**
1110006	≈100 Adults	\$44.00**
1110007	≈500 Adults	\$170.00**

### Green Lacewing Eggs Programs:

1110002	≈1,000 Eggs/week for min. 3 shipments (Price Per Shipment)	\$15.60
1110003	≈5,000 Eggs/week for min. 3 shipments (Price Per Shipment)	\$24.30
1110023	≈10,000 Eggs/week for min. 3 shipments (Price Per Shipment)	\$33.75

### 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

### 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 in Bottle.

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

## Ladybugs - *Hippodamia convergens*

**Ladybugs Consume A Vast Quantity Of Soft-Bodied Insects.**



**TARGET:** Aphids, chinch bugs, asparagus beetle larvae, thrips, alfalfa weevil larvae, bean thrips, grape root worm, Colorado potato beetle larvae, whiteflies, mites and many other soft-bodied insects and eggs.

**DESCRIPTION:** One of the most common of all beneficial insects, ladybugs are shipped to you in the adult stage. Each adult consumes about 5,000 aphids. The number of ladybugs per shipment is approximate.

**SUGGESTED USE (Depending upon level of infestation):** Shipped as adults. Release prior to or at the onset of infestation. Use more or less depending on your level of infestation and crop.

<b>Temperature:</b> Moderate: 62-88°F	<b>Relative Humidity:</b> Minimum 40%		
1112525	≈1,500 - Starter Size	≈800 sq. ft.	\$12.95
1112511	≈4,500 - Half Pint	≈2,500 sq. ft.	\$22.50
1112512	≈9,000 - Pint	≈5,000 sq. ft.	\$29.00
1112513	≈18,000 - Quart	≈10,000 sq. ft.	\$43.00
1112505	≈35,000 - 1/2 Gallon	≈1/2 acre	\$71.00
1112506	≈70,000 - 1 Gallon	≈1 acre	\$125.00

Subject to seasonal availability.

**Expedited Shipping Required**

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



## 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 square foot area every 2-3 weeks. Release preventively or at the first sign of in 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, these beneficial insects will typically hatch in under a week.

**Temperature:** 55-110°F

**Relative Humidity:** 10-75%

<b>1000105</b>	≈250 Eggs	<b>\$30.00</b>
<b>1000106</b>	≈500 Eggs	<b>\$50.00</b>
<b>1000107</b>	≈1,000 Eggs	<b>\$85.00</b>

\*FREE SHIPPING in the contiguous 48 states. Ships Monday - Thursday via 2nd Day. **Cannot be shipped to the following states:** HI, PR, VI, GU, AS, PW

*For volume and continuity pricing please call 1-800-827-2847.*



# APHID CONTROL

## 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>\$80.00</b>
<b>1101003</b>	≈3,000 Pupae	<b>\$207.00</b>
<b>1101002</b>	4 x 250 Pupae in Blister Packs	<b>\$60.00</b>

**Overnight Shipping Required**

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



*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>1101303</b>	≈5,000 Mummies	<b>\$189.00</b>
<b>1101304</b>	≈10,000 Mummies	<b>\$340.00</b>

**Overnight Shipping Required**

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



*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>\$80.00</b>
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**Overnight Shipping Required**

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



*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>\$80.00</b>
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**Overnight Shipping Required**

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



*Aphidius ervi*



## Integrated Pest Management of Fungus Gnats

1. Monitor and trap with yellow sticky traps to assess the severity of infestation.
2. Control soil moisture by providing proper drainage, avoiding standing water and allowing media to dry between waterings.
3. Circulate air and prune plants to ensure adequate air flow.
4. Prevent and treat infestations with *Bacillus thuringiensis israelensis*.
5. Apply NemAttack *Steinernema feltiae* Beneficial Nematodes to parasitize fungus gnat larvae as well as thrips.
6. Rove beetles (*Dalotia coriaria*) are excellent predators that can establish in growing environments and control multiple soil dwelling pests.
7. Spray *Beauveria bassiana* to the foliage or drench growing media, where permitted.

## 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.



*Stratiolaelaps scimitus*  
(=Hypoaspis miles)

**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>\$19.00</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**

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

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

### For Indoor Control Of Soil Dwelling Pests!

**TARGET:** Fungus gnats (sciarid 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 predacious 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.



*Dalotia coriaria*  
(=Atheta coriaria)

**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>1101329</b>	≈100 Adults	<b>\$17.00</b>
<b>1101330</b>	≈500 Adults	<b>\$54.00</b>
<b>1101331</b>	≈1000 Adults	<b>\$78.00</b>
<b>1101332</b>	≈3,000 Adults	<b>\$170.00</b>

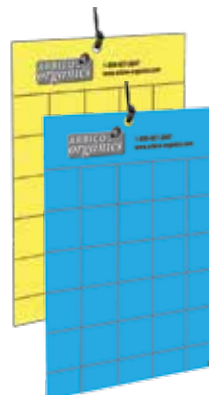
**Overnight Shipping Required**

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

## Monitor & Identify Using Sticky Traps

Trapping is the most efficient way to monitor your crop for pest insects and can often indicate the insect's presence early enough that other control measures can be taken. Bright yellow traps attract whiteflies and aphids while blue traps can draw thrips and leafminers.

**See pages 16-18 for more options.**



*For volume and continuity pricing please call 1-800-827-2847.*

# WHITEFLY CONTROL

## Biological Control of Whiteflies

Whiteflies (both adult and nymph) feed on the underside of leaves and are often confused with aphids. Large populations can give plants a mottled look, cause yellowing and eventually death. Prevention begins with careful inspection of new plants. Many whitefly infestations originate from plants brought into your growing area.



For heavy infestations, control can start with a knockdown spray of horticultural oils, insecticidal soap, neem and pyrethrins\*. Indoor growing and greenhouses can see effective control using these whitefly parasites regularly throughout their growing season. Because whiteflies can vector diseases, make sure to clean everything in the greenhouse between growing seasons (See cleaning & sanitizing on pages 34-35).

## Whitefly Parasite - *Encarsia formosa*



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

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



**DESCRIPTION:** The whitefly parasite (parasitoid) is a tiny wasp that host 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.  
**Cannot be shipped to the following states:** HI, PR, VI, GU, AS, PW

\*Be aware of state restrictions and regulations as well as end product testing prior to selecting and applying sprays.

## Whitefly Parasite - *Eretmocerus eremicus*

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



**TARGET:** Greenhouse whiteflies (*Trialeurodes vaporarum*), 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 host 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** 20 Blister Packs (≈250 Pupae Per Pack) **\$94.95**

**Overnight Shipping Required**

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

## 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>\$47.50</b>
<b>1126003</b>	≈200 Count	<b>\$74.95</b>
<b>1126002</b>	≈1000 Count	<b>\$162.00</b>

**Overnight Shipping Required**

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

## 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>\$27.00</b>
1122002	≈25,000 Adults	<b>\$57.00</b>
1122003	≈50,000 Adults	<b>\$109.00</b>

**Overnight Shipping Required**

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



## Mealybug Parasitoid - *Anagyrus pseudococci*

Stop Destructive Mealybugs With This Beneficial Parasitoid.

Image Citation: Crerob Hermosillo, Mexico

**TARGET:** Citrus mealybugs, grape mealybugs, vine mealybugs, cypress mealybugs, obscure mealybugs, longtail mealybugs and most *Planococcus* and *Pseudococcus spp.*

**DESCRIPTION:** These solitary parasitoid wasps of mealybugs are shipped as mummies, hatch within five days of arrival and immediately begin to oviposit. Once the egg is laid inside the mealybug, the larva develops and consumes the mealybug. One female will parasitize nearly 50 mealybugs.

**SUGGESTED USE (Depending upon level of infestation):** Release 1 wasp per 5 sq. ft. every two weeks and or field application use about a minimum of 2,000 mummies/acre monthly. Keep at room temperature to ensure emergence. Remove bottle top, place near infested areas and let wasps emerge on their own. DO NOT use near ants as they will inhibit wasp parasitism & reproduction.

**Temperature:** Moderate 65-93°F **Relative Humidity:** Moderate ≈40-60%

1132060	≈100 Mummies	<b>\$32.00</b>
1132061	≈200 Mummies	<b>\$60.00</b>
1132062	≈500 Mummies	<b>\$120.00</b>

**Overnight Shipping Required**

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



## Mealybug Destroyer - *Cryptolaemus montrouzeri*

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>\$49.95</b>
1114703	≈250 Adults	<b>\$97.00</b>
1114704	≈500 Adults	<b>\$194.50</b>
1114705	≈1,000 Adults	<b>\$330.55</b>
1114710	≈5,000 Adults	<b>\$990.00</b>

**Overnight Shipping Required**

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



## 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 inserted into included stake. If hung, traps should be slightly above the plant canopy.

- For trapping in the greenhouse or garden, use roughly one trap per 25-50 sq. ft.
- For monitoring, use roughly one trap per acre.

<b>1254501</b>	ARBICO Organics Yellow Insect Traps - 5 Pack	<b>\$4.25</b>
<b>1254502</b>	ARBICO Organics Yellow Insect Traps - 10 Pack	<b>\$8.00</b>
<b>1254503</b>	ARBICO Organics Yellow Insect Traps - 25 Pack	<b>\$18.75</b>
<b>1254504</b>	ARBICO Organics Yellow Insect Traps - 50 Pack	<b>\$35.00</b>
<b>1254510</b>	ARBICO Organics Yellow Insect Traps - 100 Pack	<b>\$65.00</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>



## 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.

**1259605** Garden Guard Yellow Sticky Ribbon - 2" x 100 ft. **\$14.25**



## 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>\$44.00</b>
<b>1259611</b>	Yellow Sticky Tape - 6" wide x 530' long	<b>\$90.00</b>
<b>1259612</b>	Yellow Sticky Tape - 10" wide x 530' long	<b>\$125.00</b>
<b>1259613</b>	Yellow Sticky Tape - 12" wide x 530' long	<b>\$175.00</b>

\*Larger quantities available.





## 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 25-50 sq. ft.
- For monitoring in a greenhouse, use roughly one trap per 25-50 sq. ft.
- For field crop monitoring, 1 trap per 10,000 sq. ft. or as needed.

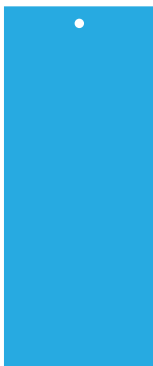
<b>1254551</b>	ARBICO Organics Blue Insect Traps - 5 Pack	<b>\$4.25</b>
<b>1254552</b>	ARBICO Organics Blue Insect Traps - 10 Pack	<b>\$8.00</b>
<b>1254553</b>	ARBICO Organics Blue Insect Traps - 25 Pack	<b>\$18.75</b>
<b>1254554</b>	ARBICO Organics Blue Insect Traps - 50 Pack	<b>\$35.00</b>
<b>1254560</b>	ARBICO Organics Blue Insect Traps - 100 Pack	<b>\$65.00</b>

## Blue Sticky Strips

Use Blue For Monitoring & Trapping A Wide Range Of Thrips Species!

**TARGET:** Male and female western flower thrips as well as other species of *Frankiniella*.

**DESCRIPTION:** Thrips find this particular tone of blue extremely attractive. For best results, place just above crop canopy and use early in the season before pest populations grow. Monitor regularly and replace after 6 weeks of use or when surface is mostly covered or dirty. Complete instructions included. Traps feature no mess "dry touch" adhesive. Each pack includes 10 - 4" x 9 1/2" 2 sided traps and 10 twist ties.



**SUGGESTED USE:** If used for pest suppression in glasshouses: At least 1 trap per 10 sq. meters, adjusting amount as needed for severity of problem. If used just for monitoring pest populations: Use 1 trap per 100-1000 sq. meters depending on the crop and/or the size of the glasshouse.

<b>1254401</b>	Blue Sticky Traps - 10 Pack	<b>\$9.00</b>
<b>1254402</b>	Blue Sticky Traps - 10 Pack (Bundle of 5)	<b>\$43.00</b>



## Pest Wizard Blue-Yellow Card Trap

A Trap With Two Special Colors – To Attract Even More Pests!

**TARGET:** The blue side will attract aphids and thrips. The yellow side attracts whiteflies, hoppers, beetles, fruit flies, psyllids and more!

**DESCRIPTION:** Blue on one side, yellow on the other. These dual-duty traps will capture an array of pests using specific color wavelengths and MessyLess™ non-toxic adhesive that won't stick to your fingers. Each pack contains 4 rectangular traps, 8 hangers and instructions. Traps are weather resistant and measure 8" x 3.5".



**SUGGESTED USE:** Hang traps on branches in trees and roses. Hang on stakes near vegetable row crops, shrubs and container plants.

- For Monitoring: ≈1 trap/1,000 sq. ft.
- For Trapping: ≈1 trap/20-50 sq. ft.

<b>1254201</b>	Blue & Yellow Card Trap - 4 Pack	<b>\$8.99</b>
<b>1254202</b>	Blue & Yellow Card Trap - 10 Pack	<b>\$16.00</b>

For More Pest Insect Trap Solutions,  
Visit [arbico-organics.com](http://arbico-organics.com)

## EGG CONTROL

### Moth Egg Parasites - *Trichogramma spp.*



#### Prevent Worm Pest Damage On Crops!

**TARGET:** Egg stages of more than 200 pests, including: borers, webworms, loopers, leafminers, fruitworms, cutworms, bollworms and armyworms (excluding beet armyworm).

**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. Each tab has been inoculated with ≈2,400 eggs per tab.

**SUGGESTED USE (Depending upon level of infestation):** Use ≈1 tab/300 sq. ft.; 1/2-2 cards/acre weekly for 2-6 weeks. Release at first flight of moths and every 7-10 days thereafter until infestation subsides. Place tabs where moths are seen. Use traps for monitoring and trapping adult moths.

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



SKU #	Amount & Weight	Price
<b><i>Trichogramma brassicae</i> - European cabbage butterfly, cutworm, corn earworm, European corn borer, cabbage looper, armyworm</b>		
1131910	3 Tabs	\$15.00
1131903	6 Tabs	\$20.00
1131911	1 Card (30 Tabs)	\$30.00
1131912	5-9 Cards	\$28.00 Per Card
1131913	10+ Cards	\$25.00 Per Card
<b><i>Trichogramma minutum</i> - trees, bogs, more common on the East Coast</b>		
1129001	3 Tabs	\$15.00
1129003	6 Tabs	\$20.00
1129010	1 Card (30 Tabs)	\$30.00
1129025	5-9 Cards	\$28.00 Per Card
1129030	10+ Cards	\$25.00 Per Card
<b><i>Trichogramma platneri</i> - orchards, more common West of the Rockies</b>		
1130001	3 Tabs	\$15.00
1130003	6 Tabs	\$20.00
1130030	1 Card (30 Tabs)	\$30.00
1130035	5-9 Cards	\$28.00 Per Card
1130040	10+ Cards	\$25.00 Per Card
<b><i>Trichogramma pretiosum</i> - row crops, vineyards</b>		
1131021	3 Tabs	\$15.00
1131003	6 Tabs	\$20.00
1131022	1 Card (30 Tabs)	\$30.00
1131023	5-9 Cards	\$28.00 per card
1131024	10+ Cards	\$25.00 per card

## CATERPILLAR CONTROL

### BONIDE® Thuricide Liquid Concentrate

*Bacillus thuringiensis var. kurstaki*

**TARGET:** Control of caterpillars.

**DESCRIPTION:** Use Thuricide to control caterpillars that are causing excessive damage. This easy to mix and easy-to-use liquid can be sprayed on any plant that you would like to protect. Can be used on fruits, vegetables and ornamentals and can be used up to the day of harvest. Use weekly until the infestation is under control.

**SUGGESTED USE:** Easy-to-use for all spray applications, just mix 1-4 tsp. per gallon of water and apply to plants. It is important to target the underside and top of leaves to ensure good coverage. The mix rate you use is dependent on the level of infestation – there is no harm to the plant if you use a stronger mix rate.



- 1201201      BONIDE Thuricide Liquid Concentrate - 8 oz.      **\$10.97**
- 1201202      BONIDE Thuricide Liquid Concentrate - 16 oz.      **\$18.00**

### 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. It is best used when the larvae are actively feeding but before the plants are heavily damaged. 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.



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

## ADULT MOTH CONTROL



For best results, position traps prior to infestation. See full selection of pheromone lures online. Call for volume prices.

### Large Plastic Delta Trap

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

1230435	Large Plastic Delta Trap - Pack of 5	\$35.00
1230436	Large Plastic Delta Trap - Pack of 10	\$66.50

### Scentry Wing Trap

You'll Get Options & Economy With This Trap!

1230440	Scentry Wing Trap - Pack of 5	\$19.00
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	\$10.45
1230431	Gypsy Moth Trap - Pack of 10	\$18.99

### 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.



Corn Borer Caterpillar

## GRASSHOPPER CONTROL

### Nolo Bait

Put An End To Destructive Grasshoppers & Crickets!

**TARGET:** Grasshoppers and mormon crickets.

**DESCRIPTION:** Approved for organic production by NOP, this bait is made from flaky wheat bran that is coated with *Nosema locustae*. The wheat bran serves as a lure; adult insects find it irresistible. Once ingested by a grasshopper or cricket, *Nosema locustae* (a single-cell protozoa) creates a disease that is deadly to those specific insects but will not harm other living species. Infected insects will soon weaken and die; with the younger ones dying in as little as a week. As they weaken and die, grasshoppers will eat their dead comrades and become infected as well. *Nosema* works best when applied to younger stages of hoppers (1/4 - 1/2" long). Heavy infestations may require repeat applications.



**SUGGESTED USE:** When applying, do not allow product to come into contact with fruit or vegetables. For best results, use before 13 weeks after formulation. Apply to lawns and gardens at a minimum rate of 5 tsps. per 100 sq. ft. Apply by hand, by shaker can or spreader. Include a buffer zone around area to be treated.

1160000	Nolo Bait - 1 lb. Bag	\$21.00
1160001	Nolo Bait - 5 lb. Bag	\$51.00

**Seasonal. Please call for availability.**

**Cannot be shipped to the following states:** AK, CT, DE, DC, HI, IL, IN, LA, ME, MD, MA, MN, MS, NH, NJ, NY, ND, PA, PR, RI, SD, VT, VI, VA, WV, WI

# Your Multi-Pest Solution For Optimal Growing



## Control Soil Developing Pests By Applying Beneficial Nematodes



### Apply To Soil For Control Of Target Pests:

- Beetle Grubs
- Fungus Gnats
- Rootworms
- Borers
- Flea Beetles
- Thrips
- Caterpillars
- Leafminers
- 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 their 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?

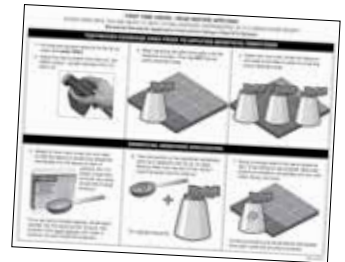
**DO NOT OPEN PACKAGE UNTIL YOU ARE READY TO APPLY**

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™ *Heterohabditis bacteriophora* (Hb) Beneficial Nematodes

NemaSeek actively seeks 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

These 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!



## 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

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

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



## 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

## 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.





## Beneficial Nematodes

- ▲ = NemaSeek™ *Heterorhabditis bacteriophora* (Hb)
- = NemAttack™ *Steinernema feltiae* (Sf)

- ★ = NemAttack™ *Steinernema carpocapsae* (Sc)
- = NemAttack™ *Steinernema riobrave* (Sr)

## 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	■		

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

### COMMERCIAL COVERAGE RATES FOR SOIL APPLICATIONS

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

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

\*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.

**Cannot be shipped to the following states:** HI, AK, PR, VI, GU, AS, PW

## Aphids

**DAMAGE TO PLANTS:** Honeydew & dark frass, leaf discoloration, puckered leaves.

**SOLUTIONS:**

- Aphid Parasites - *Aphelinus abdominalis*, *Aphidius colemani* & *Aphidius ervi*
- Aphid Predator - *Aphidoletes aphidimyza*
- Green Lacewing - *Chrysoperla rufilabris*
- Ladybugs - *Hippodamia convergens*
- Minute Pirate Bug - *Orius insidiosus*
- Assassin Bugs - *Zelus renardii*
- *Beauveria bassiana*



## Budworms

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

**SOLUTIONS:**

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



Image Citation: R.J. 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



Image Citation: David Jones, University of Georgia, Bugwood.org

## Cyclamen & Broad Mites

**DAMAGE TO PLANTS:** Flowers can wither, 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 - *Neoseiulus (=Amblyseius) cucumeris*



## 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)*



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

## 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)*



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

## 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 - *Anagyrus pseudococci*
- Red Scale Parasite - *Aphytis melinus*
- Ladybugs - *Hippodamia convergens*





## Root Aphids

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

**SOLUTIONS:**

- NemAttack Beneficial Nematodes - *Heterorhabditis bacteriophora* (Hb)
- *Beauveria bassiana*



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

## Russett Mites

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

**SOLUTIONS:**

- Thrips Predator - *Neoseiulus* (=Amblyseius) *cucumeris*
- Mite Predator - *Amblyseius andersoni*, *Neoseiulus* (=Amblyseius) *fallacis*, *Neoseiulus* (=Amblyseius) *californicus* & *Galendromus occidentalis*
- 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*
- Minute Pirate Bug - *Orius insidiosus*
- Spidermite Destroyer - *Feltiella acarisuga* & *Stethorus punctillum*
- Ladybugs - *Hippodamia convergens*
- Assassin Bugs - *Zelus renardii*



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 - *Neoseiulus* (=Amblyseius) *cucumeris*
- Mite Predator - *Amblyseius swirskii*
- Minute Pirate Bug - *Orius insidiosus*
- Green Lacewing - *Chrysoperla rufilabris*
- Fungus Gnat Predator - *Stratiolaelaps scimitus* (=Hypoaspis miles)
- Assassin Bugs - *Zelus renardii*
- 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 Parasite - *Encarsia formosa* & *Eretmocerus eremicus*
- Whitefly Predator - *Delphastus catalinae*
- Green Lacewing - *Chrysoperla rufilabris*
- Minute Pirate Bug - *Orius insidiosus*
- Mite Predator - *Amblyseius swirskii*
- *Beauveria bassiana*



**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.

## BIORATIONAL

### Grandevo® & 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, *Drasophila*, loopers, moths, sharpshooters, earworms, caterpillars and more.

**DESCRIPTION:** Grandevo uses the bacterium *Chromobacterium subtsugae* strain PRAA4-1<sup>†</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.

**1332950** Grandevo - 5 lbs. **\$112.00**  
**1332952** Grandevo WDG - 6 lbs. **\$155.00**

Grandevo - 5 lbs. (1332950) cannot be shipped to the following states: CA



### Venerate® XC

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

**TARGET:** Caterpillars, foliage feeding *Coleopteran*, 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.

**1332960** Venerate XC - 2.5 gals. **\$250.00**  
 Cannot be shipped to the following states: CA



### 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 & scarid 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. **\$225.00**  
 Cannot be shipped to the following states: AK, AL, AR, IA, UT



### BioCeres® WP

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

**TARGET:** Aphids (*Aphidoidea*), whiteflies (*Aleyrodoidea*), thrips (*Thysanoptera*), plant bugs (*Lygus lineolaris*), spotted wing drosophila (*Drosophila suzukii*), borers, beetles and weevils.

**DESCRIPTION:** This OMRI Listed biopesticide uses the power of *Beauveria bassiana* to control insects in developing and adult stages. Upon application, the spores will adhere to and begin penetrating the insect's outer shell. Once inside the insect, the spores will continue to multiply until they reach its hemolymph (blood). When the spores encounter the blood they will begin feeding on it. Death will occur in 7 to 14 days. 0 pre-harvest interval and 4-hour REI.

**SUGGESTED USE:** Repeat at 5-7 day intervals as needed. Apply 1-3 lbs. per acre, according to the density of the insect population. For conventional air and ground applications, use at least 50 gallons of spray volume per acre. Thoroughly cover plant foliage with spray solution, but not to runoff.

**1332890** BioCeres WP - 1 lb. Bag **\$80.00**  
**1332892** BioCeres WP - Case of 1 lb. Bags/12 ct. **\$880.00**  
 Cannot be shipped to the following states: CA



\*Be aware of state restrictions and regulations as well as end product testing prior to selecting and applying sprays.

## NEEM & AZADIRACTIN

### 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>\$159.00</b>
1222205	AzaGuard - 32 oz. - Case of 4	<b>\$530.00</b>
1222206	AzaGuard - 1 Gallon	<b>\$540.00</b>

### 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 if 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 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. For foliar spraying, use a sprayer that can provide a forceful, fine wetting spray and apply thoroughly to all sides of leaves. A wetting agent may be used. To repel adult flies, use fogging equipment. For optimum results, 2-3 applications made at 7-10 day intervals is recommended.



1457620	AzaSol - .25 oz.	<b>\$30.00</b>
1457621	AzaSol - .75 oz.	<b>\$68.00</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, antifeedant 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.

1332770	Molt-X - 1 Pint	<b>\$125.00</b>
1332771	Molt-X - 1 Quart	<b>\$215.00</b>

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



### Debug® ON



**Use This Neem Oil Formulation For Broad Spectrum Pest & Disease Control.**

**TARGET:** Aphids, armyworms, fall armyworms, beetles, budworms, caterpillars, fruit flies, fungus gnats, grasshoppers, leaf hoppers, leafminers, mealybugs, rusts, powdery mildew, mites, moths, root knot nematodes, psyllids, scales, sharpshooters, thrips, weevils, whiteflies, wireworms, webworms and many, many more.

**DESCRIPTION:** This emulsifiable concentrate acts as an antifeed, insect repellent, insecticide, miticide, fungicide and nematicide to control a wide range of pests, parasites and diseases in organic and conventional crops. It gets its power from the biomass extract of neem seed kernels (a 70% active ingredient) and offers all this control in a single application. Debug ON has a Restricted Entry Interval (REI) of 4 hours and you can harvest crops on the same day they are treated.

**SUGGESTED USE:** Standard application for 1 acre: 56-364 fl. oz. with 100 gallons of water or sufficient amount of water to ensure total foliar coverage.

1450530	Debug ON - 2.5 Gallons	<b>\$105.00</b>
1450540	Debug ON - 2.5 Gallons, Case of 2	<b>\$195.00</b>

**Cannot be shipped to the following states:** AL, AK, AR, CA, CT, DE, DC, FL, GA, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MI, MN, MS, MO, MT, NE, NH, NJ, NM, NY, NC, ND, OH, OK, PA, RI, SC, SD, TN, UT, VT, VA, WV, WI, WY



## OILS

### 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 - 1 Gallon	<b>\$36.00</b>
<b>1274108</b>	Organic JMS Stylet-Oil - 2.5 Gallons	<b>\$51.00</b>
<b>1274109</b>	Organic JMS Stylet-Oil - 15 Gallon Drum*	<b>CALL</b>
<b>1274110</b>	Organic JMS Stylet-Oil - 30 Gallon Drum*	<b>CALL</b>
<b>1274111</b>	Organic JMS Stylet-Oil - 275 Gallon Tote*	<b>CALL</b>

\*Call for freight quote.

**Cannot be shipped to the following states:** AR, DC, IL, IN, IA, KS, KY, LA, MN, MS, MT, PR, RI, SD, TN, UT, WV, WI, WY (15 and 30 gallon drum sizes not available to OR)

### 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>\$62.00</b>
<b>1332806</b>	SuffOil-X - Case of 2 ct./2.5 Gals.	<b>\$112.00</b>

Larger sizes available.

**Shipping Restrictions:** Cannot ship via US Mail or air shipping methods.

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



## Trifecta Crop Control

**Nano Technology & Time-Proven Ingredients Make This A Brilliant 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. No rinse and 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. Stronger dilution may be used for severe infestations, but do not use more than 4 oz./gal. water.

<b>1273060</b>	Trifecta Crop Control Conc. - 4 oz.	<b>\$34.95</b>
<b>1273061</b>	Trifecta Crop Control Conc. - 16 oz.	<b>\$94.95</b>
<b>1273062</b>	Trifecta Crop Control Conc. - 32 oz.	<b>\$149.95</b>

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

## Thyme Guard®



**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. Registered Organic by WSDA.

**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>\$31.00</b>
<b>1458301</b>	Thyme Guard Concentrate - 1 Gallon	<b>\$110.00</b>



## Guard 'N Spray™



**Contains Citric Acid & 3 Botanical Oils For Maximum Pest & Disease Control.**

**TARGET:** Spider mites, broad mites, whiteflies, aphids, fungus gnats, flies, beetles, thrips and powdery and downy mildews.

**DESCRIPTION:** This OMRI listed spray will treat, manage, eliminate and repel key insect pests. It will also treat and control downy and powdery mildews. This highly-concentrated formula uses a combination of citric acid and 3 botanical oils to suffocate, desiccate and emaciate its targets in all their life stages. Can be used during the vegetative growth stages, but should not be used in mid-to late flowering. Contains no soy or corn oil and indirect contact will not harm beneficial insects.

**SUGGESTED USE:** Use: Can be applied as a foliar spray or soil drench. Add 15-30 ml./gal. water. 32 oz. concentrate makes about 32 gallons of Guard 'n Spray at full strength of 30 ml./gal. of water. Spray 1-3 x per day depending in infestation level: preventative: 2-3 x daily at 15 ml./gal.; combative: 2-3 x daily at 30ml./gal. For soil drench: dilute at 10-15 ml./gal. and apply directly to root zone.

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|----------------|---------------------------------|-----------------|
| <b>1458150</b> | Guard 'n Spray - 32 oz. Conc.   | <b>\$49.99</b>  |
| <b>1458152</b> | Guard 'n Spray - 1 Gallon Conc. | <b>\$149.99</b> |



## Brandt® Ecotec® Plus



**Provides Control For All Stages Of Insect Development.**

**TARGET:** Mites, aphids, thrips, whiteflies, beetles, caterpillar early stages, leafhoppers, mealybugs, psyllids, flies in the maggot stage, liverworts, scale in the crawler stage and other soft bodied and sucking insects.

**DESCRIPTION:** Sustainable organic insect and mite control in a powerful, oil-based formula. It works quickly and effectively to coat and suffocate pests on contact and continues to act as a repellent after the contacted insects have died. For best results, spray when pests first appear. Reapply as needed to maintain control. There are no restrictions on how many applications can be made per season, but there is a 5-day minimum interval required between applications. Works on crops grown indoors and outdoors. Compatible with most conventional adjuvants and fertilizers. 0 REI & O PHI.

**SUGGESTED USE:** Do not apply to wilted or otherwise stressed plants, or to newly transplanted material prior to root establishment. Do not apply when temperature is greater than 90°F. For most crops: 1-4 pts/100 gals or 2-6 fl oz/10 gals.

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| <b>1440125</b> | Brandt Ecotec Plus - Case of 2.5 Gal. - 2 ct. | <b>\$530.00</b> |
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- Cannot be shipped to the following states:** AK, AR, CT, DE, DC, ID, IN, IA, ME, MT, NE, NH, NM, ND, OH, OK, RI, SD, VT, WV



## SNS 209 All Natural Systemic Pest Control Concentrate

**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.

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|----------------|---|-----------------|
| <b>1459100</b> | SNS 209 Systemic Concentrate - 1 Pint   | <b>\$24.00</b>  |
| <b>1459102</b> | SNS 209 Systemic Concentrate - 1 Gallon | <b>\$110.00</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, it is a rearrangement of molecules 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 gallon every 7-10 days. For knock down foliar spray 2 oz. per gallon every 2-3 days until desired results. To maintain long term biostimulant benefits spray 2 oz. per gallon once a week. As a root drench or general surfactant spray 1.24 oz. per gallon of water.

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|----------------|-------------------------|-----------------|
| <b>1274200</b> | PureCrop1 - 16 oz.      | <b>\$45.00</b>  |
| <b>1274201</b> | PureCrop1 - 1/2 Gallon  | <b>\$120.00</b> |
| <b>1274202</b> | PureCrop1 - 1 Gallon    | <b>\$225.00</b> |
| <b>1274203</b> | PureCrop1 - 2.5 Gallons | <b>\$552.00</b> |



## The Amazing Dr. 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 gal. water. For severe infestations: 1/2 gal. water every 3rd day. Powdery Mildew/weak solution: 1/2 oz./31 1/2 oz water. Soft bodied insects/medium solution: 1-1 1/2 oz./31 oz. water. Infestations/strong solution: 2-2 1/2 oz./30 oz. water. Preventative: seeds/transplants: 1/2-1 oz./qt. water; soil amendment: 1 cup/5 gals water; foliar spray: 1/2 cup/1 gal. water.

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| <b>1459200</b> | Dr. Zymes Eliminator - 1 Quart RTU       | <b>\$12.95</b>  |
| <b>1459201</b> | Dr. Zymes Eliminator - 1 Quart Conc.     | <b>\$32.95</b>  |
| <b>1459202</b> | Dr. Zymes Eliminator - 1 Gallon Conc.    | <b>\$115.95</b> |
| <b>1459203</b> | Dr. Zymes Eliminator - 2.5 Gallons Conc. | <b>\$275.00</b> |

Larger sizes available.

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



## Root Cleaner

**Get Right To The Root Of Soil Pests and Pathogen Problems.**

**TARGET:** Root aphids, fungus gnats, thrips, plant-parasitic nematodes, *Pythium*, *Rhizoctonia* and more.

**DESCRIPTION:** Root Cleaner has been developed to get down into the root zone and eliminate soil-dwelling pests and pathogens. It works by disrupting the feeding and reproduction of insects and causes fungi and algae to fatally dehydrate. Can be used with its sister product, Green Cleaner (GC works on the surface while RC works below), but should not be used/mixed with other products. Can be used from start to harvest. RC is harmful to nematodes and should not be used at the same time as beneficial nematode applications. If you use beneficial microbes, re-inoculate after each RC use.

**SUGGESTED USE:** Can be used in soil, soilless and coco media. Apply to the plant's root zone and irrigate well so that the material moves throughout the zone to where the pests are located. To treat an active problem, apply every 3-4 days to ensure you break the egg cycle. For best results, use the drench and soak method. Root drench: 1 oz./gal. Weekly maintenance: 1/2 oz./gal. Flush: 1 oz./gal.

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|----------------|--|-----------------|
| <b>1458060</b> | 8 oz. Concentrate - Makes 8-10 gallons     | <b>\$23.99</b>  |
| <b>1458061</b> | 32 oz. Concentrate - Makes 32-64 gallons   | <b>\$77.00</b>  |
| <b>1458062</b> | 1 Gal. Concentrate - Makes 128-256 gallons | <b>\$224.95</b> |



## Ed Rosenthal's Zero Tolerance Pesticide RTU

**This Vegan Essential Oil Blend Kills Mites, Insects & Fungi.**

**TARGET:** Spider mites, aphids, whiteflies, thrips, ants, caterpillars, gnats, root aphids, mealybugs, scale, powdery mildew, gray and white mold.

**DESCRIPTION:** Made from food-grade cinnamon, clove, rosemary & thyme oils, this ready-to-use spray kills and repels plant pests and pathogens. Designed to be used repeatedly, it kills on contact while deterring future pest activity or fungal growth. Best used before pests become an infestation and diseases become chronic. Can be used through the flowering stage up to 2 weeks before harvest. This blend is 100% vegan and evaporates fully, leaving no residue on leaves that can affect taste.

**SUGGESTED USE:** Should be tested on a few leaves before use. Do not use on wilted or stressed plants. Spray thoroughly on all sides of leaves 1-2 times/week. For Spider Mites: Apply 3 times, 3 days apart or until plants are pest-free.

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|----------------|---|----------------|
| <b>1458205</b> | Zero Tolerance Pesticide RTU – 1 Quart  | <b>\$18.00</b> |
| <b>1458206</b> | Zero Tolerance Pesticide RTU – 1 Gallon | <b>\$50.00</b> |

**Cannot be shipped to the following states:** AK, AZ, AR, CT, DE, FL, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MN, MS, MO, MT, NH, NM, ND, OH, OK, PA, PR, RI, SC, SD, TN, UT, VT, VA, WV, WI, WY



## 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.

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|----------------|------------------------------|-----------------|
| <b>1288770</b> | PyGanic Specialty - 32 oz.   | <b>\$144.00</b> |
| <b>1288780</b> | PyGanic Specialty - 1 Gallon | <b>\$530.00</b> |

\*Be aware of state restrictions and regulations as well as end product testing prior to selecting and applying sprays.



## 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.

<b>1332754</b>	RootShield Plus Granules - 10 lb. Box	<b>\$188.00</b>
<b>1332755</b>	RootShield Plus Granules - 40 lb. Bag	<b>\$415.00</b>
<b>1332756</b>	RootShield Plus WP - 1 lb. Bag	<b>\$118.00</b>
<b>1332757</b>	RootShield Plus WP - 3 lb. Box	<b>\$255.00</b>

**Granular cannot be shipped to:** AK • **WP cannot be shipped to:** AK



## Prestop® WG



**This Aggressive Soil Fungus Is Devastating To Many Plant Pathogens.**

**TARGET:** *Alternaria*, *Bipolaris*, *Botrytis*, *Cladosporium*, *Colletotrichum*, *Fusarium*, *Mycosphaerella*, *Penicillium*, *Phytophthora*, *Plasmiodiophora*, *Plicaria*, *Pyrenochaeta*, *Pythium*, *Rhizoctonia*, *Sclerotinia*, *Verticillium*, *Helminthosporium*, *Anthraconose*, *Didymella*, *Monilinia* and powdery mildew.

**DESCRIPTION:** The *Gliocladium catenulatum* Strain J1446, in Prestop WG is a potent weapon against many damaging crop diseases. The mycelia and spores from this fungus move into and live in the rhizosphere and aerial parts of plants and stay viable there for weeks. They then provide disease control by breaking down, weakening and parasitizing pathogens; replacing the pathogen within the plant and aggressively colonizing all parts of the plant. The result is an inevitable pathogen die-off. Once the stress of disease fighting is gone, you will see healthy new growth.

**SUGGESTED USE:** Apply by spraying or drenching the growth substrate, as a foliar spray, in chemigation, fogging or incorporation it into the growth substrate as an aqueous suspension. Foliar spray: 0.05% suspension.

<b>1332985</b>	Prestop WG - 100 grams	<b>\$130.99</b>
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**Cannot be shipped to the following states:** AL, AR, AK, CA, DC, HI, ID, IA, LA, NE, ND, SC, SD, TN, WV, WY



## PreFence™ Biofungicide



**Prevent And Control Fungal & Mold Diseases On Agronomic, Vegetable & Ornamental Crops.**

**TARGET:** For use to control wilt and rot diseases such as *Fusarium*, *Rhizoctonia*, *Pythium* and *Phytophthora*.

**DESCRIPTION:** OMRI listed PreFence contains mycelium and spores from a naturally occurring bacterial strain derived from Sphagnum peat. This bacterium encapsulates disease spores and stops them from causing devastating plant disease. In addition to controlling wilt and root diseases, it is also an exceptional tool to curb damping-off in propagation. It is most effective when used preventively before diseases have taken hold.

**SUGGESTED USE:** Can be dry mixed in potting soils, applied to soil, used for seed treatment or mixed with water for a dip, turf, spray or drench application. To make a suspension of water, mix in a small volume of water (such as 0.25-1.0 gal.) and let stand for approximately 30 minutes. Agitate as needed to evenly disperse PreFence before diluting to final volume (between 0.5-3 pints of water/100 sq. ft.).

<b>1332850</b>	PreFence Biofungicide - 5 Grams	<b>\$24.00</b>
<b>1332851</b>	PreFence Biofungicide - 25 Grams	<b>\$87.00</b>
<b>1332852</b>	PreFence Biofungicide - 100 Grams	<b>\$315.00</b>

**Cannot be shipped to the following states:** AK, DC, IA, ID, IL, KS, KY, MD, MS, ND, NE, NH, SD



## 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>\$31.00</b>
<b>1332982</b>	Mycostop - 25 grams	<b>\$133.99</b>

**Cannot be shipped to the following states:** AL, AK, DC, HI, ID, IA, LA, NE, ND, SC, SD, TN, WV, WI, WY



## MilStop® Broad Spectrum 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 is an OMRI listed, WSDA registered 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.)

**1332753** MilStop Foliar Fungicide - 5 lb. Bag **\$63.00**

Cannot be shipped to the following state: CA, AK



## BotryStop™ Biofungicide



**These Fungal Spores Will Fight To Replace Pathogens On Plants.**

**TARGET:** To be used as a preventative biological fungicide for the control of the pathogens *Botrytis cinerea*, *Sclerotinia sclerotiorum* and *Monilinia* spp.

**DESCRIPTION:** This preventative biological fungicide contains the naturally occurring, non-pathogenic saprophytic fungus *Unocladium oudemansii* (U3 strain). These spores control pathogens by aggressively occupying the same ecological space and out-competing them for resources. Spores will colonize dead and senescing plant tissue and push pathogens out, providing protection to fruit, blossoms and plant tissue. OMRI listed BotryStop is non-invasive and poses no threat to living tissue. For use on a wide variety of crops and ornamentals in most areas; in CA it is **not** labeled for use on vegetables and ornamentals.

**SUGGESTED USE:** Do not apply through any type of irrigation system. Use with a surfactant or non-ionic adjuvant such as ThermX™-70 Natural Wetting Agent (available online) to ensure proper product wetting and spreading. Can be used in combination with other fungicides, but not more than one. The application rate range is 2-4 lb./acre. The most common rate is 3 lb./acre.

**This product requires overnight shipping and must be kept refrigerated. It must be kept stored around 40°F, but not freezing.**

**1332842** BotryStop Biofungicide - 6 lb. Bag **\$152.00**  
**1332840** BotryStop Biofungicide - 12 lb. Bag **\$270.00**  
**1332843** BotryStop Biofungicide - Case of 4 - 6 lb. Bags **\$560.00**  
**1332841** BotryStop Biofungicide - Case of 4 - 12 lb. Bags **\$1,000.00**



## Cease® - Biological Fungicide



**For Control Of Soil Pathogens As Well As Fungal & Bacterial Plant Diseases!**

**TARGET:** *Botrytis*, powdery mildew, anthracnose, leaf spot diseases including *Alternaria* and *Entomosporium*; bacterial diseases such as *Pseudomonas*, *Erwinia*, and *Xanthomonas* spp., as well as the soil diseases *Rhizoctonia*, *Pythium*, *Fusarium* and *Phytophthora*.

**DESCRIPTION:** Cease is a contact biological fungicide that contains *Bacillus subtilis*, that stops pathogens from developing on plant leaves.

**SUGGESTED USE:** Approved for NOP production. Use 2-8 qts./100 gallons of water approximately once per week. (see label online for specific crops and diseases.) This product is suitable for wet applications. Use with a spreader sticker such as ThermX™-70 Natural Wetting Agent (see page 49) in wet environments.

**1332724** Cease - 1 Gallon **\$75.50**  
**1332727** Cease - 2.5 Gallons **\$170.00**  
**1332725** Cease - 1 Gallon, Case of 4 **\$240.00**  
**1332728** Cease - 2.5 Gallons, Case of 2 **\$275.00**



## 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.

**1332969** Regalia - 1 Gallon **\$92.00**  
**1332970** Regalia - 2.5 Gallons **\$220.00**



**For More Disease Control Solutions,  
Visit [arbico-organics.com](http://arbico-organics.com)**



## BANISH

### Controls Downy & Powdery Mildew Pathogens With Geraniol.

**TARGET:** Use to control and prevent downy mildew and powdery mildews, including the following: *Podosphaera fusca*, *Erysiphe necator* (*Uncinula necator*), *Podosphaera leucotricha*, *Podosphaera aphanis* and *Oidium lycopersicum*.

**DESCRIPTION:** This outstanding fungicide uses Geraniol, a natural geranium oil plant extract, to control common mildews in plants. Banish works in a two-fold process to prevent mildew growth and heal plants from the cell up. The Geraniol works by creating an unbalance of potassium (K+) ions in the mycelium. This unbalance inhibits spore germination and mycelium growth and will, ultimately, enter the pathogen cell and kill it. The result is a healthier, pathogen-free plant.

**SUGGESTED USE:** For use only as a foliar spray. The mix rate is .13 fl. oz. (3/4 tsp.) or 3.8 mL/gal water. Spray directly on all infected foliage until it's evenly covered. Apply every 5-7 days until infestation is controlled. For prevention, apply every 10-14 days.

<b>1458170</b>	Banish - 2 oz. Concentrate	<b>\$30.00</b>
<b>1458172</b>	Banish - 32 oz. Concentrate	<b>\$259.50</b>
<b>1458173</b>	Banish - 1 Gallon Concentrate	<b>\$599.00</b>



## Defender PM

### You Can Use This Fungicide During Both Vegetative & Flowering Phases.

**TARGET:** Powdery mildew diseases caused by *Erysiphales* fungi.

**DESCRIPTION:** This Citrus Oil based fungicide is made with food grade ingredients and will not persist on plant leaves. It works on contact to surround and smother *Erysiphales* fungal spores and other powdery mildew pathogens. Use with your foliar regime to prevent and/or control outbreaks. Can be used in all growing methods and on all food crops.

**SUGGESTED USE:** Apply as a foliar spray. Heavy fungus: 200 ml/gal. Fungus issue: 150 ml/gal. Minor fungus issue: 120 ml/gal. Preventative and on clones: 100 ml/gal. Heavy issues may need repeat applications every 2-3 days, otherwise spray weekly.

<b>1458120</b>	Defender PM - 8 oz.	<b>\$18.00</b>
<b>1458121</b>	Defender PM - 16 oz.	<b>\$37.00</b>
<b>1458122</b>	Defender PM - 32 oz.	<b>\$72.00</b>
<b>1458123</b>	Defender PM - 64 oz.	<b>\$135.00</b>
<b>1458124</b>	Defender PM - 1 Gallon	<b>\$249.00</b>
<b>1458125</b>	Defender PM - 5 Gallons	<b>\$1,090.00</b>



## Mildew Cure®

### Strong Mildew Control That Leaves No Residue Or Funny Taste.

**TARGET:** Powdery Mildew, although it may help with spider mites as well.

**DESCRIPTION:** Derived from cottonseed, corn and garlic oils, this OMRI listed fungicide creates a physical barrier to powdery mildew spores and prevents fungi from infecting plants for a week or so after application. Spider mite infestations can foster mildew establishment and the oils in Mildew Cure can suppress those insects to a certain degree. Best when used as a preventative and when applied with spreader/sticker.

**SUGGESTED USE:** Apply as a foliar spray and use enough to fully cover affected tissues. Mix 1-2 oz./gal water or 1 gal/100 gals water. Apply at a 7-10 day interval. Should be applied early morning or late afternoon.

<b>1810930</b>	SaferGro Mildew Cure - 1 Pint Concentrate	<b>\$13.50</b>
<b>1810931</b>	SaferGro Mildew Cure - 1 Quart Concentrate	<b>\$20.99</b>
<b>1810621</b>	JH Biotech Mildew Cure - 1 Gallon/case of 4	<b>\$153.00</b>
<b>1810622</b>	JH Biotech Mildew Cure - 2.5 Gallons/case of 2	<b>\$181.60</b>

**Cannot be shipped to the following states:** AL, CT, ID, IN, IA, KS, LA, MD, MI, MT, NV, NH, ND, OH, OK, PA, RI, SC, SD, UT, VT, WV



## SNS-DC™ ALL Natural Disease & Fungal Control

### Helps Plants Fight Off Fungus, Bacteria and Mold From The Inside Out.

**TARGET:** Rust diseases, Powdery Mildew, Black Mold and more.

**DESCRIPTION:** This systemic, citric acid-based disease control product is absorbed into plant cells where it works in several ways to heal and protect your plants: it forms a protective barrier that repels and kills pathogens; it protects the integrity of the plant's cell walls from microbial attacks; it displaces and sequesters salts and metals that microbes use for sustenance and its dehydrating and oxidative action dries up and breaks down microbial cell walls. Since SNS-DC works inside the plant itself and is not exposed to the elements, as foliar sprays are, you will not have these concerns and can expect long term and continuous control.

**SUGGESTED USE:** Product will start working a few days after application and will continue to work for up to 1 week. No REI. Reapply every 5-7 days or as needed. Soil drench – Potted plants/greenhouses: 1.3 oz./gal. water- will cover 550 sq. ft. Bedded plants/turf/fields: 1.3 oz/gal water-will cover 500-900 sq. ft. Large scale: 64 oz./50 gals. water minimum. Mixed solution may be stored up to 1 week.

<b>1459110</b>	SNS-DC Disease & Fungal Control - 32 oz. RTU	<b>\$12.50</b>
<b>1459111</b>	SNS-DC Disease & Fungal Control - 1 Gal. RTU	<b>\$19.99</b>
<b>1459112</b>	SNS-DC Disease & Fungal Control - 1 Gal. Conc.	<b>\$110.00</b>





## 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.

## 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 **\$208.00**  
**1222517** SaniDate 5.0 - 5 Gallons **\$308.00**

Larger sizes available. All sales of SaniDate are final.

\*Free Shipping in the contiguous 48 states. Ships via Ground ONLY.

**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.



## OxiDate® 2.0



Clean Your Greenhouse & Tools With This Environmentally Friendly Alternative To Copper Fungicides!

**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 **\$240.00**  
**1222502** OxiDate 2.0 - 5 Gallons **\$370.00**

Larger sizes available.

\*Free Shipping in the contiguous 48 states. Ships via Ground ONLY.

**Cannot be shipped to the following states:** PR, VI, GU, AS, PW, AK, HI



## ZeroTol® 2.0



Kills Pathogens On Plants As Well As Bacteria, Algae & Fungi On Hard Surfaces.

**TARGET:** *Alternaria*, *Anthraxnose*, *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:** This liquid wonder uses a combination of Hydrogen Peroxide and Peroxyacetic Acid to prevent and control a wide range of pathogens on plants and in the soil. It works equally well to suppress and control bacteria, fungi and algae on hard surfaces and equipment. This is especially useful to contain the spread of disease in your growing area. When used as directed, there will be no strong odor, visible residue or harmful effects on plants.

**SUGGESTED USE:** For use as a foliar spray, in irrigation and fogging applications, as a soil drench, seed treatment, in hydroponics, as a pre-plant dip and on hard surfaces. Curative treatment: between 1:100-1:400 (1-4 gals./100 gals. water). Apply every 3-5 days until control is achieved. Preventative treatment: 1:200-1:400 (or 32-64 fl. oz./100 gals. water) every 5-10 days. Large scale application: 50-500 gals./acre or 11.5-115 gals/10,000 sq. ft. Ensure thorough coverage of all foliage, stems, branches and stalks.

**1222401** ZeroTol 2.0 - 2.5 Gallons **\$260.00**

\*Free Shipping in the contiguous 48 states. Ships via Ground ONLY.

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



## TerraClean® 5.0



**Eliminate Soil-Borne Pathogens With This Hydrogen Dioxide & Peroxyacetic Acid Blend.**

**TARGET:** *Botrytis, Erwinia, Fusarium, Phytophthora, Pythium, Rhizoctonia, Thielaviopsis* and *Verticillium*.

**DESCRIPTION:** When this combination of Hydrogen Dioxide and Peroxyacetic Acid in TerraClean goes to work, the chemical reaction provides a three-fold benefit to your plants. First, it reacts with and disrupts the proteins and enzymes that make up the cell structures of pathogens (bacteria, fungus and spores), which will prove fatal. Second, it releases a high volume of oxygen that floods the root zone, stimulating root and plant development and nutrient uptake. Third, it creates a healthier soil environment overall, which translates into more robust plants that are able to keep diseases at bay.

**SUGGESTED USE:** For use as a direct soil treatment, a pre-plant application, at seeding and transplanting or as a periodic soil treatment throughout the growing season. Can be used in flood or drip irrigation, chemigation or as a soil drench. For soil treatments dilute at the rate of 1 gal. product/100 gal. water. Use 25-100 gals./acre. In areas with high disease pressure use 100 gals./acre. Call or go online for specifics on other application methods.

**1222550** TerraClean 5.0 - 5 Gallons **\$415.00**  
**Cannot be shipped to the following states:** AL, HI, IA



## Hygrozyme® Horticultural Enzyme Formula

**A Simple Mode of Action With Complex Benefits For Your Plants.**

**TARGET:** Decaying root material.

**DESCRIPTION:** A non-gmo enzyme cleaner for growing media that eliminates dead root matter and provides a cleaner and healthier root zone for your plants. It uses 4 core enzymes: cellulose, xylanase, hemicellulose and beta-glucanase to provide the power in its potion. Working synergistically, these enzymes provide all the ingredients needed to thoroughly break down decaying plant matter. The resultant clean root zone prevents diseases such as root rot by improving drainage and aeration in the growing media. A cleaner root zone will also give your young roots more space to grow exuberantly and more efficient access to nutrients to truly thrive. Can be used in all stages of the growing cycle and in all kinds of growing media. Compatible with all nutrient and supplement programs.

**SUGGESTED USE:** Use R.O. or filtered water. Mix fresh with each application and use it up within 7 days. Do not per-dilute. Mix 8-10 mL /gal of water or nutrient solution. Use with every watering or in your feeding schedule. For propagation: Use mL/gal water to soak trays and media prior to use. After harvest, use 10-15 mL/gal. water to wash equipment. Once cleaned, sanitize equipment with H2O2 at 3% concentration.

<b>3000700</b>	Hygrozyme Horticultural Enzyme Formula - 500 ml	<b>\$21.95</b>
<b>3000701</b>	Hygrozyme Horticultural Enzyme Formula - 1 liter	<b>\$36.95</b>
<b>3000702</b>	Hygrozyme Horticultural Enzyme Formula - 4 liters	<b>\$132.95</b>
<b>3000703</b>	Hygrozyme Horticultural Enzyme Formula - 10 liters	<b>\$313.95</b>
<b>3000704</b>	Hygrozyme Horticultural Enzyme Formula - 20 liters	<b>\$590.95</b>

Large sizes available.



## BioSafe Systems' Cannabis Program

**PROPAGATION • CROP PROTECTION • WATER TREATMENT • FACILITY SANITATION/DISINFECTION**

BioSafe Systems provides a comprehensive line of products for disinfecting and sanitizing. A complete system can be designed starting with propagation through vegetative & flowering stages including water treatment, cleanup and equipment disinfection. These sustainable modes of action are safe for plants, workers and the environment.

**Benefits:**

- Residue-free crop protection
- Food-safety level sanitation
- No rinse required

**2-Step Facility Clean-Out**

At the end of each production cycle, it is important to clean and disinfect equipment and facilities. Use GreenClean Alkaline to remove organic matter and other deposits. Move on to disinfection with SaniDate 5.0. Recommended to use foam, fog or coarse spray for application. Ensure thorough coverage.

**Line Cleaning**

For line cleaning between crop rotations, use ZeroTol 2.0. Hold overnight and then flush with clean water. Inject ZeroTol 2.0 after fertilizer to reduce biofilm and prevent dripper clogging.

## EM•1® Microbial Inoculant



### Faster Breakdown Of Organic Matter.

**TARGET:** Accelerate decomposition & reduce odors.

**DESCRIPTION:** Consists of healthy bacillus from naturally fermented live microorganisms. Works with beneficial microbes in the area it is applied to, creating a synergy among microorganisms and larger forms of life including insects, worms, pets, livestock and people.

**SUGGESTED USE:** 2 tsp./gal. water, 1 qt./250 gal. water, 1 qt./acre up to 8 times/yr.



<b>1202098</b>	EM•1 Microbial Inoculant - 16 oz.	<b>\$26.00</b>
<b>1202101</b>	EM•1 Microbial Inoculant - 1 Quart	<b>\$35.00</b>
<b>1202102</b>	EM•1 Microbial Inoculant - 1 Gallon	<b>\$75.00</b>
<b>1202103</b>	EM•1 Microbial Inoculant - 5 Gallons	<b>\$290.00</b>

Call for larger sizes.

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

## Inocucor™ Garden Solution



### Stimulate Root Growth & Boost Yields With This Special Blend of Beneficial 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 overall 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.

<b>1202150</b>	Inocucor Garden Solution – 1 Liter	<b>\$25.25</b>
<b>1202151</b>	Inocucor Garden Solution – 1 Gallon	<b>\$63.00</b>
<b>1202153</b>	Inocucor Garden Solution – Case of 2, 2.5 Gallons	<b>\$175.00</b>
<b>1202155</b>	Inocucor Garden Solution – 55 Gallon Drum*	<b>CALL</b>

\*Call for freight quote.



## Earth Alive™ Soil Activator™



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

**TARGET:** For use on all types of plants and soils.

**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.

<b>1202170</b>	Earth Alive Soil Activator, 50 gr. / 1.76 oz.	<b>\$4.99</b>
<b>1202171</b>	Earth Alive Soil Activator, 425 gr. / 15 oz.	<b>\$19.99</b>
<b>1202172</b>	Earth Alive Soil Activator, 1 kg. / 2.2 oz.	<b>\$36.99</b>

Cannot be shipped to the following states: AL, AR, CA, LA, SD, VT, WV, WI

## TerraGrow®



### Beneficial Microorganisms To Stimulate Root Development, Increase Nutrient Uptake & Reduce Transplant Shock.

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

**DESCRIPTION:** This soil inoculant uses a specialty formula to reestablish beneficial organisms in and around the root zone to stimulate root development. Healthy root development is the first step to limiting stressors on the plants and increasing yields. TerraGrow is completely water soluble making irrigation applications a breeze. Contains no genetically altered microbial strains. OMRI listed for organic production.

**SUGGESTED USE:** 0.6-1.0 oz. per 100 gallons of water for most soil and hydroponic applications. Use 1-1.5 lbs. per acre prior to or immediately after transplanting. Repeat applications every 3-4 weeks through the growing season.

<b>1222700</b>	TerraGrow - 10 lbs.	<b>\$225.00</b>
<b>1222701</b>	TerraGrow - 25 lbs.	<b>\$540.00</b>
<b>1222702</b>	TerraGrow - Pallet of 50, 10 lbs.	<b>CALL</b>
<b>1222703</b>	TerraGrow - Pallet of 32, 25 lbs.	<b>CALL</b>



## Fulzyme™ SP



**Balance Your Soil Microbiology & Get Higher Yields.**

**TARGET:** Depleted and/or unbalanced soil that inhibits plant growth and is susceptible to disease.

**DESCRIPTION:** Organic Fulzyme SP, produced with a unique fermentation process, contains billions of beneficial bacteria and selected amino acids that can bring your soil back to a healthy environment that plants will prosper in. It can unlock and solubilize phosphorous, calcium, potassium, magnesium and other elements in the soil; produce antibiotic and metabolic soil substances that fight pathogens; aid in decomposition of organic matter and displace soil pathogens by competing for nutrients and space. You will see noticeable increases in volume and weight of product.

**SUGGESTED USE:** Can be applied through irrigation systems, sprayed on the soil, as a side dress, as a foliar spray or as a dip. Not compatible with antibiotics and copper based products. Soil & foliar applications: 1-2 lbs./acre with enough water to the soil and foliage. Dips: 13.3 oz./10 gals. water. Potting soil: 1 part/500 parts potting soil.

<b>1810850</b>	Fulzyme SP - 1 lb.	<b>\$24.75</b>
<b>1810851</b>	Fulzyme SP - 5 lbs.	<b>\$108.99</b>
<b>1810852</b>	Fulzyme SP - 20 lbs.	<b>\$435.99</b>

**Cannot be shipped to the following states:** AR, CA, CO, DE, DC, HI, KS, ME, MD, MA, MI, MN, MS, MT, NM, NC, ND, OH, OK, RI, SD, UT, WV, WY



## ROOT™

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

**TARGET:** Use indoors or outdoors on plants, seedlings and in propagation, to boost root health and aid plant nutrition and soil vitality.

**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. This aids plant nutrition and soil vitality in a number of ways. With increased microbial activity at the roots, the plant is more efficient at absorbing the nitrogen found in air in the soil and breaking it down into ammonia and nitrate. Likewise, normally insoluble phosphorous is made more soluble. The plant is better able to access these crucial nutrients once they are broken down. 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. ROOT also provides the fungal spore known as *Trichoderma*, that grows on the surface of roots; providing disease control and enhanced root growth.

ROOT comes in a convenient, resealable packet. This allows you to use just what you need as you need it, which is a good thing, as a little bit of ROOT will go a long way. The 1.5 oz. packet will make 12 gallons and the 4 oz. packet makes 32 gallons.

### 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.

<b>3000507</b>	ROOT - 1 lb.	<b>\$79.99</b>
<b>3000503</b>	ROOT - 1 lb. - Case 4	<b>\$242.00</b>



## SeedUp



**Give Your Plants A Great Start In Life.**

**TARGET:** Use to enhance germination and root development and promote strong growth with high quality plants.

**DESCRIPTION:** Just like human children, seedlings need a healthy and supportive environment to grow into strong and productive adults and by treating the seeds they come from you can provide it for them they as grow. Contains growth promoting rhizomicroorganisms (PGPR), *Bacillus subtilis* and *Bacillus licheniformis*, which will get into the soil and begin colonizing the soil around the seeds before they sprout. Suitable for most any crop seeds, this sustainable and non-hazardous powder is compatible with all types of chemical fertilizers but is **not** compatible with herbicides or pesticides.

**SUGGESTED USE:** Can be used as a seed treatment, in drip irrigation or by in-furrow spray during seeding. Mix and use immediately. Applications rates vary according to seed types. In-furrow applications: 100-200g with enough water.

<b>1810860</b>	SeedUp - 1 lb.	<b>\$43.75</b>
<b>1810861</b>	SeedUp - 5 lbs.	<b>\$204.99</b>
<b>1810862</b>	SeedUp - 20 lbs.	<b>\$820.99</b>

**Cannot be shipped to the following states:** AR, CA, CO, DE, DC, HI, IL, KS, ME, MD, MA, MN, MS, MT, NM, ND, OH, OK, SD, UT, WV, WI, WY



## ARBICO Organics™ Root Build 240™ Mycorrhizal Fungi



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

**TARGET:** The benefits of introducing mycorrhizal fungi to your soil are numerous: accelerate and increase plant growth; increase plant yield and quality; increase absorption of water and nutrients; and promote plants tolerant to disease, drought & salinity.

**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.

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



## Great White® Premium Mycorrhizae

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

**Target:** Use for seed starts, transplants and plants suffering from stress, low yields and poor health.

**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>\$18.49</b>
<b>2000065</b>	Great White Mycorrhizae - 4 oz.	<b>\$34.95</b>
<b>2000066</b>	Great White Mycorrhizae - 8 oz.	<b>\$63.95</b>
<b>2000067</b>	Great White Mycorrhizae - 32 oz.	<b>\$199.99</b>
<b>2000072</b>	Great White Mycorrhizae - 5 lbs.	<b>\$380.70</b>

**Cannot be shipped to the following states:** HI, IL, OK, SD, PR



## Plant Success Organics Granular™, 3-1-2



**Create A Living Soil With This Team Of Mycorrhizae, Beneficial Bacteria & Fertilizer.**

**TARGET:** New plantings in a variety of soils and climates.

**DESCRIPTION:** Carefully crafted from mycorrhizae, bacteria, trichoderma and an all-purpose fertilizer, this granular formula will build a microbial system on and around plant roots while feeding the beneficial organisms. Root colonization encourages stronger and quicker root growth, increases water and nutrient uptake and creates a healthy soil that can better fight off soil-borne diseases. Apply by simply sprinkling into plant hole, or by mixing with soil, and see fast-growing, heartier plants in no time.

**SUGGESTED USE:** Spread the granular at the bottom of the planting hole. When filling the planting hole, spread product in close proximity to the roots. Amounts needed: seed (4" pot): 1/4 tsp., 1 gal. container: 1 tsp., 3 gal.: 4 tsp., 5 gal.: 2-4 Tbsp., 1" caliper stem: 4-6 Tbsp., 2" caliper stem: 5-8 Tbsp. When mixing into potting soil or soilless media, use 4-6 oz./2.5 cu. ft. of soil.

<b>2000068</b>	Plant Success Organics Granular - 4 oz.	<b>\$6.99</b>
<b>2000069</b>	Plant Success Organics Granular - 1 lb.	<b>\$19.99</b>



Image Citation: Aberdeen Mycorrhiza Research Group

## Tribus Original™

**Better Growth From The Roots Up With This Biostimulant.**

**TARGET:** Maximizes a crop's performance in all types of environments and growing conditions.

**DESCRIPTION:** This biostimulant contains 3 naturally occurring rhizobacteria that quickly colonize the root zone of plants. These bacteria produce extracellular enzymes and other biochemicals that help the plant with improved nutrient uptake and enhanced root/stem growth. Tribus cuts down time from cut to root and is compatible with any growing method/system. No risk of phytotoxicity and greatly improves resistance to abiotic stress. Use during flush to breakdown salts. Will not cause biofilm in hydroponics. Long shelf life and low application rates mean you can buy once and use for an extended period of time.

**SUGGESTED USE:** Use with hydroponic, soilless and soil-based media. Can be mixed with aqueous nutrient solutions and/or applied directly to plant roots. May be used up to and on day of harvest. Containers: 1-5ml/gal. at every watering. Fields: 1-5L/acre 2-3 times a month. Seedling/Early Veg: 1ml/gal. Veg: 1-2 ml/gal. Flowering Transition: 1-2 ml/gal. Full Flowering and Ripening/Flush: 2-4 ml/gal.

<b>1202160</b>	Tribus Original - 250 ml	<b>\$64.99</b>
<b>1202161</b>	Tribus Original - 500 ml	<b>\$99.99</b>
<b>1202162</b>	Tribus Original - 1 Liter	<b>\$169.99</b>
<b>1202163</b>	Tribus Original - 1 Gallon	<b>\$499.99</b>

**Cannot be shipped to the following states:** AL, AR, HI, ID, IL, IN, IA, KS, LA, MD, MN, MS, MO, NE, ND, OK, PA, SC, SD, TX, UT, VA, WY



## Green Aminos, 0.5-0-2

**Give Your Plants A Boost Anytime In Their Life Cycle.**

**TARGET:** Plants that need additional amino acids, proteins and carbohydrates.

**DESCRIPTION:** Green Aminos can be used to deliver premium quality amino acids, carbohydrates and proteins to your plants in five different ways: as a foliar feed, in rooting, by watering in, in hydroponics or as a compost tea. The biostimulant qualities of these ingredients will boost amino acid and protein production and give you plants that are better able to assimilate nutrition, which means healthier and more robust growth from seed on out. Although this product can be applied at any point in the life cycle of a plant, it is especially effective in the early stages.

**SUGGESTED USE:** Suggested Use: Cuttings & Seedlings: Soaking solution for rockwool – 1 tsp./5 gals. Foliar: 1 tsp./gal. Water In: 1-2 tsp./gal. Hydroponics: 1 tsp./5 gals. (ebb & flow/recirculating). Compost Tea: 1 tsp./5 gals. Large Scale: 5 lbs./1,000 gals.

<b>1315500</b>	Green Aminos, 0.5-0-2 - 2 lbs.	<b>\$33.00</b>
<b>1315501</b>	Green Aminos, 0.5-0-2 - 5 lbs.	<b>\$75.00</b>

**Cannot be shipped to the following states:** AL, AK, AR, CT, DE, DC, FL, GA, ID, IN, IA, KS, LA, ME, MD, MI, MN, MO, MT, NE, NH, NJ, NM, NY, NC, ND, RI, SC, SD, TX, UT, VT, VA, WV, WY



## PolyAmine Micro-Pak® Organic



**Perfect For Small Plants,  
But Every Life Stage Will  
Love It!**



**TARGET:** Plants that need additional nutrition to meet their full potential.

**DESCRIPTION:** Organic water soluble micronutrients that contain naturally occurring compounds and glucosamines to help your plants maximize production, correct deficiencies and increase their yield. Especially effective when applied to plants when they are small. Formulated to be applied foliarly or in the soil, these nutrients contain particular amino acids that facilitate penetration into the plant tissue. This enhanced absorption means that lower application rates can be used than other comparable products. Contains a specific PolyAmine molecule that surrounds the mineral, protecting it from chemical reaction with other products, so that it mixes easily with fertilizers and insecticides.

**SUGGESTED USE:** The rate of application will depend on the crop, stage of growth and severity of deficiency. The maximum recommended rates are for mature, full-sized plants. Reduce the rates proportionately when spraying smaller plants. Field crops: 8-32 fl. oz./acre. Ornamental trees, shrubs & flowering plants: 2-32 fl. oz./10 or more gals. water.

<b>1440180</b>	PolyAmine Micro-Pak Organic - case of 2.5 gal./2 ct.	<b>\$175.00</b>
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Larger sizes available.

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

## Axiom Grow Solutions

**Harness the Power of Harpin Protein!**

**TARGET:** For use on all plants indoors and outdoors to boost growth and production.

**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 endopyhtic 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:**

**Application Rate For .5g packets:**

- 1 packet mixed with 32 ozs. of water covers 250 sq. ft.

**Application Rate For 2g packets:**

- 1 packet mixed with 1 gallon of water covers 1,000 sq. ft.
- 1 packet mixed with 50 gallons of water covers 1 acre.

<b>3000605</b>	Axiom - .5 g (package of 3)	<b>\$9.99</b>
<b>3000606</b>	Axiom - 2 g (package of 3)	<b>\$29.99</b>
<b>3000601</b>	Axiom - .5 g (package of 3), case of 36	<b>\$315.00</b>
<b>3000602</b>	Axiom - 2 g (package of 3), case of 12	<b>\$305.00</b>

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



# ARBICO ORGANICS FAMILY OF FERTILIZERS

## Down To Earth™



Down to Earth makes organic fertilizers that boost soil health and encourage plant growth in an earth-friendly and sustainable manner. Nutrients provided by the fertilizers give your plants that needed extra boost for vigorous growth and the countless microorganisms in the soil will thrive with the extra sustenance and keep your soil healthy. Have a small garden? Try the new "mini" sizes.



- Acid Mix, 4-3-6
- Alfalfa Meal, 2.5-0.5-2.5
- All Purpose, 4-6-2
- Bat Guano, 9-3-1
- Bio-Live, 5-4-2
- Blood Meal, 12-0-0
- Bone Meal, 3-15-0
- Crab Meal, 4-3-0
- Langbeinite, 0-0-22
- Neem Seed Meal, 6-1-2
- Rock Phosphate, 0-3-0
- Rose & Flower Mix, 4-8-4
- Seabird Guano, 0-11-0
- Vegan Mix, 3-2-2

## John & Bob's Smart Soil Solutions



Rich, vibrant soil is the key to a fertile and self-sustaining garden ecosystem. John & Bob's creates soil products that build healthy, productive soils the way that nature does – with beneficial microorganisms, minerals and microbes. Create soil that is bursting with life with the four product system of Optimize, Maximize, Nourish-Biosol and Penetrate.



- John & Bob's Soil Optimizer
- John & Bob's Maximize - Microbes & Minerals
- John & Bob's Nourish - BIOSOL, 7-2-1
- John & Bob's Penetrate - Liquid Biotiller

## JH Biotech, Inc.



**JH Biotech**

JH Biotech, Inc. manufactures traditional and organic products for home and commercial use. Their products can be used in locations such as greenhouses, nurseries, field crops and gardens. Their Research Division is dedicated to improving food productivity without sacrificing quality or safety.



- Biomin Calcium, 1-0-0
- Biomin Boron, 1-0-0
- Biomin Cal-Boro, 1-0-0
- Biomin Copper, 1-0-0
- Biomin Iron, 1-0-0
- Biomin Magnesium, 1-0-0
- Biomin Manganese, 1-0-0
- Biomin Zinc, 1-0-0
- Biomin N, 5-0-0
- Bio-Activate
- Mixwell
- No Moss
- Promot Biological Inoculum
- Promot MZM
- Superzyme BGF, 1-0-4
- Seamax, 1-0-0.8

## Maxicrop



Maxicrop goes to the frigid waters off the Norwegian coast for the seaweed that they use in their products. There the confluence of arctic waters, mountain run-off and the Gulf Stream creates the perfect environment for the finest seaweed to grow. The quality of their products show the journey's worth it.



- Maxicrop Soluble Seaweed Powder, 0-0-17
- Maxicrop Liquid Seaweed, 0-0-1
- Maxicrop Liquid Fish, 5-1-1
- Maxicrop Liquid Seaweed Plus Iron, 0-0-1 + 2% Fe
- Maxicrop Kelp Meal, 1-0-2



## Neptune's Harvest



Neptune's Harvest, a division of Ocean Crest Seafood, makes their fertilizers from the fish that they catch in the nutrient-rich North Atlantic Ocean. In this way, they utilize 100% of the seafood they harvest. These highly nutritious protein fertilizers are made by using a cold process employing enzymes (natural biological catalysts) to break down the flesh, and other parts of the fish, into simpler protein complexes. This process is called Hydrolysis and the result is an exceptional fish hydrolysate fertilizer.



- Neptune's Harvest Hydrolyzed Fish Fertilizer, 2-4-1
- Neptune's Harvest Seaweed Plant Food, 0-0-1
- Neptune's Harvest Fish & Seaweed Fertilizer, 2-3-1
- Neptune's Harvest Crab & Lobster Shell, 5-3-0
- Neptune's Harvest Humate Concentrate

## RX Green Technologies



RX Green Technologies provides simple to use, research-backed and scrupulously made products to cannabis cultivators with a heavy emphasis on customer service. Their research and development facility is the only cannabis specific facility in the industry and they are always examining and fine-tuning their products to offer the very best to their customers. Let their scientists and plant specialists help your grow shine.



Vegetative Growth

- GROW A, 3-0-2
- GROW B, 1-2-4

Reproductive Growth

- Bloom A, 2-0-4
- Bloom B, 1-8-5

## SaferGro



SaferGro products are brought to us by SaferGro Labs, a facility focused on the research and development of organic and safe products for commercial and home garden use. By using SaferGro products, all growers can take advantage of this research. These products provide a safe way to enter into the world of earth-friendly growing.



- SaferGro Biomin Calcium
- SaferGro Biomin Starter
- SaferGro SuperGro, 1-0-4

## Sustâne



One of the world's leading manufacturer-exporters of organic fertilizers, Sustâne products are made in the USA and exported to over 60 countries. Their granular fertilizers are made from aerobically composted turkey litter with added plant nutrients and soil amending ingredients and are backed by over 30 years of independent applied research. Each fertilizer is USDA Bio based certified and OMRI listed.



- Sustâne Compost Tea Bags, 4-6-4,5
- Sustâne Spring Weed & Feed, 9-0-0
- Sustâne Flourish WDF, 8-2-4
- Sustâne Hi-N WDF, 12-0-1

## Brandt® Organics Crop Mix



**Plants Looking Poorly? Perk Them Up With These Micronutrients.**

**TARGET:** Plants with nutrient deficiencies.

**DESCRIPTION:** These OMRI listed complexed micronutrients bring Magnesium, Sulfur, Iron, Manganese and Zinc to plants that need a nutrient boost. Brandt Organics Crop Mix will correct and prevent deficiencies in to all manner of crops grown in fields, rows, orchards and on vines. Can be used with other products such as fertilizers and pesticides



**SUGGESTED USE:** Can be applied directly to the soil or to foliage via aircraft, ground sprayers or in fertigation systems. Compatible with most pesticides and fertilizers, but a compatibility test is still recommended before application. Shake contents before using and put 1/3-2/3 of total required volume in tank. Add this product for adding any additional products. Agitate well until thoroughly mixed, then fill tank with remainder of water.

**1440155** Brandt Organics Crop Mix - gallon pail **\$48.00**  
**Cannot be shipped to the following states:** AR, CO, CT, DE, HI, IN, IA, KS, ME, MD, MS, MT, NV, NH, NC, ND, OK, PA, RI, UT, VT, WV, WI, WY

## Brandt® Organics Vine & Tree Mix



**These Micronutrients Give Your Plants What They Need To Be Their Very Best.**

**TARGET:** Nutritional deficiencies in field, row, vegetable, tree, fruit and vine crops.

**DESCRIPTION:** Don't let the name fool you, Brandt Organics Tree & Vine Mix provides liquid complexed micronutrients to more than just trees and vines; basically, if it grows this product can feed it. This organic formulation contains all-important Sulfur, Boron, Copper, Iron, Manganese, Molybdenum and Zinc. Can be applied directly to the soil or to foliage via aircraft, ground sprayers or in fertigation systems. Can be used on its own for excellent results, or combine it with other products such as fertilizers and pesticides.



**SUGGESTED USE:** Optimum rate of application will vary depending on soil properties, weather conditions, time of year, general crop health and crop species. Do not over-apply. Foliar: Actively growing plants with young leaves absorb product most efficiently. Dilute applications-2 qts/acre or less are preferred to minimize phytotoxicity. Concentrate applications-up to 1 qt/minimum of 25 gals/acre. Soil: lower rates are for field, row and vegetable crops. Higher rates are for fruit, tree and vine crops. Fertility maintenance-1-3 qts/acre. Mild deficiency-2-6 qts/acre. Severe deficiency-1-3 gals/acre.

**1440160** Brandt Organics Tree & Vine Mix - 5 gallons **\$47.00**  
**Cannot be shipped to the following states:** AR, CO, CT, DE, FL, IL, IN, IA, KS, ME, MD, MS, MT, NV, NH, NM, NC, ND, OK, PA, RI, TN, TX, UT, VT, WV, WY

## Sensational Solutions CaFe Mag

**This Calcium-Iron-Magnesium Supplement Is Micronized For Better Results.**

**TARGET:** Plants that need a nutrient boost, especially those that are heat or drought stressed

**DESCRIPTION:** This micronized mineral source supplement is created through a process that removes the water and breaks down the minerals into the finest of particles. These resultant tiny particles have many performance advantages over traditional supplements: they make nutrients and microorganisms more readily available; use much lower application rates; will easily go into suspension; not clog emitters or sprayers and require less packaging. Café Mag also has excellent water retention properties.



**SUGGESTED USE:** May be applied through drip system, fertigation method, flood irrigation and spray application weekly for maximum results. In water: 1/8 -1/4 tsp./gal. water (MILD); 1/2 -1 tsp./gal. water (STRONG); 2 tsp- 1 tbsp./gal water (HEAVY) Top dress: 1/2-2 tsp/1 cu. ft. of soil every 2-4 weeks during all stages of growth.

**1314710** Sensational Solution's CaFe Mag - 1 lb. **\$15.00**  
**1314711** Sensational Solution's CaFe Mag - 5 lbs. **\$61.67**  
**1314712** Sensational Solution's CaFe Mag - 10 lbs. **\$120.00**  
**1314713** Sensational Solution's CaFe Mag - 25 lbs. **\$291.67**

**Cannot be shipped to the following states:** AL, AK, CT, DE, DC, FL, GA, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MO, MT, NE, NH, NJ, NM, NY, NC, ND, OH, OK, PA, RI, SC, SD, TN, TX, UT, VT, VA, WV, WI, WY

## John & Bob's Maximize Microbes & Minerals



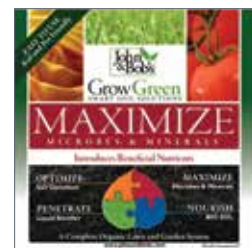
**A Highly Concentrated Combination Of Essential Minerals & Microbes That Add Life & Vitality To Your Soil!**

**TARGET:** Use as part of a complete soil improvement program along with John & Bob's Optimize, Penetrate and Nourish.

**DESCRIPTION:** Maximize adds vital minerals and microbes that transform lifeless soil into a living community. Unlocks stored nutrients in the soil, making them available to plants.

**SUGGESTED USE:** Use 8 lbs. per 1,000 square feet of soil. Cast or spread onto soil or lawn and water in. Apply twice per year.

**1332711** John & Bob's Maximize - 8 lbs. (treats ≈1,000 sq. ft.) **\$24.95**  
**1332712** John & Bob's Maximize - 32 lbs. (treats ≈4,000 sq. ft.) **\$74.95**



## Andesite Mineral Complex™



**Bring Volcanic Power To Your Soil With This Biodynamic Amendment!**

**TARGET:** Soils that need mineral enrichment.



**DESCRIPTION:** This product returns essential beneficial minerals and trace elements from volcanic rock to your soil in a slow, natural release. Your plants will benefit by having enhanced resistance to insect pests, disease, frost and drought as well as improved nutrient uptake. This paramagnetic rock aids in carbon exchange (CDC) in soil, helps balance soil pH levels, improves brix levels in plants and works with other natural inputs. Can be used in any growing media and will not clog hydroponic or irrigation systems. Can be used on all crops and can be made into a compost tea.

**SUGGESTED USE:** Can be applied throughout the year or growing cycle. Cannot be over-applied and will not burn. Apply as little as 1-2 tsp. per pot to 25-40 for garden beds. Call for specifics.

<b>1308320</b>	Andesite Mineral Complex - 3 lbs.	<b>\$15.49</b>
<b>1308321</b>	Andesite Mineral Complex - 25 lbs.	<b>\$37.50</b>
<b>1308322</b>	Andesite Mineral Complex - 40 lbs.	<b>\$54.99</b>

\*Free Shipping in the contiguous 48 states. Ships via Ground ONLY.

## Simply Silica, 0-0-5

**Get Improved Yields & Vigorous Growth In Any Growing Media.**

**TARGET:** Crops grown indoors, outdoors and in hydroponics.

**DESCRIPTION:** Adding Silica to your plants offers numerous benefits; this is especially true in hydroponics, where plants have no soil to draw Silica from. It can increase growth rate by encouraging the development of cells, improve uptake of nutrients, provide more robust resistance to environmental stressors, improve use of CO<sub>2</sub> and increase chlorophyll levels, strengthen resistance to pests and diseases, limit transplant shock and extend the life of cut flowers and plants. Simply Silica can (and should) be added to any fertilizer regime. For best results, add some with every single feeding throughout the growing cycle.



**SUGGESTED USE:** Use to improve plants' growth and natural defenses to environmental stresses.

<b>1308330</b>	Simply Silica, 0-0-5 - 8 oz.	<b>\$12.50</b>
<b>1308331</b>	Simply Silica, 0-0-5 - 32 oz.	<b>\$25.00</b>
<b>1308332</b>	Simply Silica, 0-0-5 - 1 gal.	<b>\$60.00</b>

**Cannot be shipped to the following states:** AL, AK, AZ, AR, CT, DE, DC, GA, HI, ID, IL, IN, IA, KS, LA, ME, MD, MA, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OK, OR, PR, RI, SC, SD, TX, VT, WA, WV, WI, WY

## Earthshine

**Make Your Soil Shine With This Multi-Faceted Soil Enhancer.**

**TARGET:** Soil or soilless media that needs a boost of micronutrients or old soil that needs invigorating.

**DESCRIPTION:** This amazing blend of biochar and nutrients will elevate your soil/soilless media and improve the effectiveness of any products you add to it. It will also make a killer compost tea. Although this blend is made with glacial rock dust, soybean meal, humic acid and worm castings, the driving force behind it is biochar. Biochar is known to rejuvenate soil carbon levels; trap and hold nutrients; sequester CO<sub>2</sub> in the soil; encourage microbial health and increase water use efficiency. With all of these benefits, Earthshine will not only save you money in water and fertilizer costs, the increased carbon levels will contribute to long-term healthy soil.



**SUGGESTED USE:** Not suitable for aeroponic or hydroponic recirculation systems. Revive old soil: 16 oz. per cu. ft. of media. Transplanting: 1 tbsp. in transplant hole. Boost new soil: 8 oz./4 cu. ft. of new soil. Compost tea: 1 oz./5 gals. purified water and aerate for 6 hours. Soil rescue: If garden is established, top dress 4 oz. around plant once every 4 weeks.

<b>1306040</b>	Earthshine - 2 lbs.	<b>\$22.89</b>
<b>1306041</b>	Earthshine - 5 lbs.	<b>\$35.95</b>

**Cannot be shipped to the following states:** AL, AK, AR, CT, DE, DC, FL, GA, ID, IN, IA, KS, KY, LA, MD, MI, MN, MO, MT, NE, NH, NJ, NM, NY, NC, ND, RI, SC, SD, TX, UT, VT, VA, WV, WY

## SaferGro® Humax®



**A Soil Additive That Helps Your Plants Absorb Nutrients!**

**TARGET:** Plants with multiple nutrient deficiencies grown in regions with drought.

**DESCRIPTION:** Extracted from leonardite, OMRI listed Humax contains liquid humic acid which increases nutrient availability and uptake. Boosts the water holding capacity of soil and stimulates plant growth and drought resistance. It can be applied to vegetables, fruits, trees and gardens.



**SUGGESTED USE:** For house plants, use 1 tsp./gal. of water, monthly. For vegetables and large plants, use 2 tsp./gal. of water every 2-3 months or as needed. For lawns and gardens, use 1 tsp./500 sq. ft., every 4-6 weeks or as needed. For trees, use 2 tsp./gal. water as a foliar application and use 2-3 tsp./500 sq. ft. as a soil application. Repeat every 4-6 weeks or as needed. For hydroponics, use approximately 150 ppm.

<b>1810001</b>	SaferGro Humax - 1 Pint Concentrate	<b>\$9.00</b>
<b>1810002</b>	SaferGro Humax - 1 Quart Concentrate	<b>\$11.50</b>
<b>1810003</b>	SaferGro Humax - 1 Gallon Concentrate	<b>\$28.00</b>

**Cannot be shipped to the following states:** AR, IL, MN, NH, OK, SD

## 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

<b>1402403</b>	ThermX-70 Natural Wetting Agent - 1 Quart	<b>\$27.00</b>
<b>1402404</b>	ThermX-70 Natural Wetting Agent - 1 Gallon	<b>\$94.50</b>
<b>1402405</b>	ThermX-70 Natural Wetting Agent - 5 Gallons	<b>\$330.55</b>
<b>1402406</b>	ThermX-70 Natural Wetting Agent - 55 Gallon Drum*	<b>CALL</b>

\*Call for freight quote.

Call for larger sizes.



## Brandt® Organics SKH Sticker



### Keep Your Sprays On Your Plants With This OMRI listed Sticking Agent.

**DESCRIPTION:** Brandt Organics SKH Sticker is a mineral-based premium sticker for foliar applications in high moisture conditions that contains an ingenious combination of Bentonite, Lactose and Casein. It will improve the effectiveness and increase the longevity of insecticides, insect growth regulators, nutritional sprays, fungicides and herbicides. Specially formulated to stand up to moisture, this product will resist rain and irrigation run-off and effectively adhere sprays to their target.

**SUGGESTED USE:** Product is compatible with most agricultural chemicals. However, if the desired combination has not been previously used, a compatibility test is recommended. For ground applications with (a) insecticides and insect growth regulators use 3/4 lb. per 100 gallons of spray solution, (b) fungicides and herbicides: use 1-2 lbs. per 100 gallons of spray solution. For aerial applications use 2-3 lbs./acre in a minimum of 10 gallons of spray solution. If higher rates are recommended by a pesticide label, follow those label directions.

<b>1440100</b>	Brandt Organics SKH Sticker - 5 lbs.	<b>\$14.50</b>
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**Cannot be shipped to the following states:** AR, HI, ID, KY, MS, TN, UT, WA, WV, WY



## Natural Wet®



### You'll See Fast Results With This Organic Yucca Product.

**DESCRIPTION:** The Yucca plant has adapted to thrive in harsh environments and it does so by producing saponins that alleviate the stressors of heat, drought and inhospitable soil. OMRI listed Natural Wet employs these saponins as its active ingredient, providing you with a liquid product that aids in nutrient uptake, improves and regulates water use, creates uniform water absorption, reduces surface tension of liquids, allows foliar sprays to spread and stick better, loosens compacted soil, reduces salinity of soil and allows for better drainage. All of which means less stressed plants and higher yields. 100% biodegradable and can be used in conventional, organic and hydroponic growing.

**SUGGESTED USE:** Soil application - 16 oz./acre in enough water to cover the area. Bulk: 16 oz./cu. yard. Row crops: mix with fertilizer solution. Transplants: mix with transplant water. Foliar application-Dilute sprays: 16 oz./100 gals. spray solution. Concentrate sprays; 8 fl oz./acre.

<b>1810930</b>	SaferGro Natural Wet - 1 Pint Concentrate	<b>\$9.99</b>
<b>1810931</b>	SaferGro Natural Wet - 1 Quart Concentrate	<b>\$14.99</b>
<b>1810639</b>	JH Biotech Natural Wet - 1 Gallon/case of 4	<b>\$95.99</b>
<b>1810640</b>	JH Biotech Natural Wet - 2.5 Gallons/case of 2	<b>\$112.99</b>

**Cannot be shipped to the following states:** AK, AR, DE, DC, IL, KS, ME, MD, MN, MS, MT, ND, OH, OK, PA, RI, SC, SD, UT, WV, WI, WY



## 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.

<b>1308420</b>	RAW Yucca Flow - 2 oz.	<b>\$11.46</b>
<b>1308421</b>	Raw Yucca Flow - 8 oz.	<b>\$30.78</b>



## Water Conditioner

### Cleans Up Tap Water In One Simple Step.

**TARGET:** Removes, neutralizes and detoxifies chlorine, chloramines and heavy metals in water.

**DESCRIPTION:** Clean water is essential for healthy and productive growing. Most tap water in urban and suburban areas are treated with sanitizing agents which may include chlorine and chloramines. Not to mention trace heavy metals and other toxins commonly found in water. This product will not only eliminate and neutralize undesirable additives, it will provide additional electrolytes. You will have an amazing water upgrade that your plants will love. This non-toxic product will not harm humans, pets or aquatic life (not for use with fish intended for human consumption) Do not use more than the recommended amount or use with Permanganate-based treatments.

**SUGGESTED USE:** Use in hydroponic, aquaponics and traditional growing with first time tank or reservoir use; before/after adding or changing water and before/after adding fish/aquatic life or plants. 8 oz. will treat up to 2,000 gallons. 32 oz. will treat up to 8,000 gallons. Use 1-2 tsp/40 gals water. For larger applications use 1 fl oz/250 gals water

**2000650** Water Conditioner - 8 oz. **\$16.95**

**2000651** Water Conditioner - 32 oz. **\$35.95**

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## 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.

**2000600** Boogie Blue Basic **\$29.90**

**2000605** Boogie Blue Plus **\$59.00**



## Commercial Bak-Pak® Sprayer

### Professional Grade Components For Top Of The Line Performance.

**DESCRIPTION:** This sprayer has been designed to be comfortable to wear and easy to use, as well as super-durable and versatile. It features: adjustable, padded straps with a compact shape that fits the back; left or right handed pump action; hermetically sealed to be leak proof; 4 nozzle heads (cone, fan, 4-hole and twins); made with Viton® chemical materials; strong piston pump; 4" tank opening for easy filling and spills; thumb-operated locking on-off poly valve; 48" PVC sprayer style hose and 20" long fiberglass/poly spray wand. Powerful enough for large areas like lawns, gardens, decks, patios, greenhouses and more.

**SUGGESTED USE:** Use to spray insecticides, herbicides, pesticides and other products that control pests and diseases on crops, livestock and other animals and structures.

**1800109** Commercial Bak-Pak Sprayer - 4 gallons **\$75.50**



## SP2® Piston Pump Bak-Pak® Sprayer

### Gives You Highest Pressure Of Any Backpack Sprayer Out There.

**DESCRIPTION:** This well-designed sprayer has an innovative sealed pump that can provide 180 PSI of pressure and can handle chlorine, stains and sealers, solvents and oil based solutions. Between the sealed pump and the Viton® seals, this sprayer is virtually leak-proof. Other features: 20" brass wand with adjustable brass cone pattern nozzle; 3 additional plastic fan nozzles; made of translucent poly to easily see liquid levels; solid steel pump handle; locking shut-off valve with in-line filter and 47" industrial strength spray hose. For commercial and/or personal use.

**SUGGESTED USE:** Use to apply herbicides, fertilizers, insecticides and other home/garden products.

**1800108** SP2 Piston Pump Bak-Pak Sprayer - 4 gallons **\$151.99**

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



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ARBICO Organics Team

Sheri & Rick Frey, Founders ARBICO Organics

## ASK THE EXPERTS

Take advantage of our FREE consultation! Let us help solve your gardening and farming issues with our start to finish ARBICO Organics solutions. Our trained staff will help determine what problem you have (insect, disease, weed, nematode, critter, pet issue, fertility needs), offer solutions for immediate relief and prescribe a long term sustainable program for continued success.

## AUTO SHIP PROGRAM

We can automatically ship any product on a regular schedule so you won't run out. Popular auto ship products include: Fly Eliminators, Beneficial Nematodes, Green Lacewings, Ladybugs, horse sprays, fertilizers, pet supplies & many more!

## PAYMENT OPTIONS

**Credit Cards** (ARBICO accepts all major credit cards) and **PayPal**.

**Mail Checks or Money Orders To:**

ARBICO Organics, 10831 N. Mavinee Dr., Ste. 185, Oro Valley, AZ 85737-9531

**We do not accept cash via mail.**



## CUSTOMER SERVICE

**All phone calls answered by a live person during regular business hours:** Monday through Friday, 8:00 AM - 5:00 PM (Arizona Time Zone)

• Se habla Español

**Toll Free: 800-827-2847**

**International calls: 520-825-9785**

**Fax: 520-825-2038**

## CRITICAL INFORMATION FOR CERTIFIED ORGANIC GROWERS

Please be aware that the certified status of a product can change at any time without notification from the manufacturer or OMRI. Although we make every attempt to assure that the status of the products listed as certified organic are current and up-to-date, when purchasing a product we advise you to protect your certification by checking with your certifying agency that it is acceptable or by going online to OMRI at [www.omri.org](http://www.omri.org).

## OUR SATISFACTION GUARANTIES

**For products other than live insects:** If for any reason you are not satisfied with any of our products other than live insects, you can return the item(s) to us within 30 days in accordance with our Return Policy at [www.arbico-organics/category/return-policy](http://www.arbico-organics/category/return-policy). Our Customer Care personnel will be happy to assist you with returns.

**For live insects:** We guarantee that you will receive live beneficial insects (mites and beneficial nematodes). If your insects perish en route, we will gladly send you a replacement order. But we cannot accept returns or make refunds for other reasons since these are perishable products with a limited lifespan and cannot be resold. We cannot guarantee results with live insects since we have no control over how the product is applied, the extent of the problem, and other variables. But if you are not satisfied with your results, we will cancel any unshipped orders and refund the portion of any prepayment that applies to unshipped orders.

## Visit Our Retail Store!

10831 N. Mavinee Dr., Ste. 185  
Oro Valley, AZ 85737-9531  
**800-827-2847**

Please call for product availability.

**STORE HOURS:**

Monday - Friday: 8:00 AM - 5:00 PM



## Limitations and Disclaimers

This publication is designed and produced by ARBICO Organics solely for informational purposes. Reasonable efforts have been made to provide accurate information, but errors may occur. All insect quantities are approximate (and the "double tilde" symbol ≈ so indicates). All prices are subject to change without notice. Product specifications are provided by the manufacturers and are also subject to change without notice. Photographs are for illustrative purposes only.

Notwithstanding any other statements in this catalog, **all warranties, express and implied, including warranties of merchantability and fitness for a particular purpose, are hereby disclaimed and excluded.** By placing an order with ARBICO, buyer agrees that the limited remedies described in "Our Satisfaction Guaranties" are the sole and exclusive remedies available to buyer. All damages, including incidental and consequential damages, are hereby excluded.

# ARBICO Organics Solutions For IPM Practices

## Natural Pesticides & Botanicals

- Herbicides
- Insecticides
- Fungicides
- Bactericides



## Planning & Record Keeping

- Design a plan
- Establish economic thresholds
- Start a journal
- Record everything



## Trap & Monitor

- Learn which pests are common in your area & attacking your plants
- Determine a pest threshold
- Use traps to keep track of pest populations
- Check growing areas regularly
- Keep Records! Monitor what is happening in your area

## Biological Controls

- Beneficial insects
- Beneficial mites
- Beneficial organisms

## Mechanical Controls

- Use pheromone lures to attract & trap adults
- Handpick pests
- Practice weed management
- Use physical barriers – row covers, root baskets
- Use mechanisms to scare pests – flash tape, ultrasonic repellent

## Cultural Controls

- Prepare the soil or growing medium
- Choose resistant plant species
- Rotate crops
- Use cover crops or trap crops
- Use beneficial fungi and bacteria
- Adjust irrigation practices



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