

OHP BIOSOLUTIONS[®]



GREENHOUSE & NURSERY PRODUCTION

June 2024

Volume VIII



An American Vanguard Company

OHP Biosolutions Solutions

OHP Product	TYPE	OMRI Listed	Herbs	Vegetable Transplants	Vegetables	Tomatoes	Fruits and Nuts
Ancora®	Microbial Insecticide	✓	✓	✓	✓	✓	✓
Azatin® O	Insecticide	✓	✓	✓	✓	✓	✓
BotaniGard® ES	Mycoinsecticide	✓	✓	✓	✓	✓	✓
BotaniGard® WP	Mycoinsecticide	✓	✓	✓	✓	✓	✓
BotaniGard® MAXX	Mycoinsecticide	✓	✓	✓	✓	✓	✓
Kopa™ Insecticidal Soap	Insecticide/ Miticide/ Fungicide	✓	✓	✓	✓	✓	✓
Grotto®	Fungicide/ Bactericide	✓	✓	✓	✓	✓	✓
Kalmor®	Fungicide/ Bactericide	✓	✓	✓	✓	✓	✓
Triact® 70	Fungicide/ Insecticide/ Miticide	✓	✓	✓	✓	✓	✓
Triathlon® BA	Fungicide/ Bactericide	✓	✓	✓	✓	✓	✓
FireWorxx™	Herbicide	✓					

More information on the products listed above may be found on the OHP website at ohp.com, or from your OHP technical sales manager.

Ancora®

Ancora Microbial Insecticide is a naturally occurring fungus that infects both foliage and soil dwelling insects.

Labeled for use on: Vegetables, fruits, ornamental plants grown in greenhouses or other covered structures or in nurseries. **Ancora** is OMRI listed and approved for organic production

Insects Controlled: Aphids, thrips including pupae, spider mites, whiteflies, mealybugs, leafminers, psyllids, lepidopteran caterpillars, coleoptera grubs

Packaging: 1 pound bag, 10 per case

Storage Notes: Store **Ancora** in its original unopened package. **Ancora** is very stable in the unopened package for one year at 40° to 50° F.

With an opened package, squeeze out the excess air and keep refrigerated (40° to 50° F). Use any remaining product within 30 days of opening.

Optimal Environmental Conditions: Apply in the evening or early morning when the relative humidity is high (> 75%) and temperatures are moderate (65° to 85° F).

EPA Reg. No.	REI	Chemical Family	MOA	Active Ingredient	Rate per 100 gallons	Rate per 1 gallon	Application
70051-19-59807	4 hour	Microbial Insecticide	M	<i>Isaria fumosorosea</i> Apopka Strain 97	14 to 28 ounces	4.0 to 8.0 grams	Foliar and Drench

Azatin® O

Azatin O is a biological insect growth regulator (IGR) used to control the larval stage of a broad-spectrum of greenhouse and nursery pests. **Azatin O** is OMRI listed, soft on beneficials, and carries a 4-hour REI. **Azatin O** contains 175 grams of the active ingredient azadirachtin per gallon.

Azatin O may be used for insect control on all crops such as ornamentals, vegetables, herbs, and berries, grown in the greenhouse, nursery, interiorscape, and in hydroponic growing situations. **Azatin O** may be used for control of insects on turfgrass. Insects do not survive the molting process to become reproductive adults. Death results in 3-10 days after application but insects will stop feeding long before they die.

Labeled for use on: Ornamentals, vegetables, herbs, and berries grown in the greenhouse, nursery, and interiorscape.

Insects Controlled: Aphids, thrips, whiteflies, fungus gnats, scales, chafers, leafhoppers, psyllids, grubs, borers, stink bugs, grasshoppers, Japanese beetles, and many Lepidoptera species (see label for complete list of insects controlled).

Packaging: 1 quart container, 6 per case

Notes: For best results thorough spray coverage and a final spray solution of 3.0 to 7.0 pH is recommended.

EPA Reg. No.	REI	Chemical Family	MOA	Active Ingredient	Rate per 100 gallons	Rate per 1 gallon	Application
70051-9-59807	4 hours	Biopesticide	UN	Azadirachtin	4 to 16 fluid ounces	¼ tsp to 1 tsp (1.2 mL to 4.8 mL)	Drench or spray

BotaniGard® ES

Botanigard® Emulsifiable Suspension (ES) Mycoinsecticide provides contact activity on a wide range of insect and mite pests on food crops – including food, forestry, and orchard crops – and on non-food crops.

Labelled for use on: food and nonfood crops grown in greenhouses, shadehouses, nurseries, landscapes, interiorscapes, and on turf.

Insects/pests controlled: aphids, thrips, psyllids, spider mites, weevils, mealybugs in nurseries, greenhouses, shadehouses, mushroom houses, landscapes, interiorscapes, and on turf. Aphids, thrips, psyllids, mealybugs, leafhoppers, weevils, plant bugs, borers and leaf-feeding insects on food, forestry, and orchard crops (see label). Grasshoppers, Mormon crickets, locusts, and beetles on rangeland, improved pastures, and listed food crops (see label).

Packaging: – 1 qt., 10 per case; 1 gal., 4 per case

Notes: Botanigard ES is most effective when used early at the first appearance of pests. Typically, it takes 3-7 days after the first spray to see control. Use in rotation with products with different modes of action to lessen possibility of resistance development.

EPA Reg. No.	REI	Chemical Family	MOA	Active Ingredient	Rate per 100 gallons	Rate per 1 gallon	Application
82074-1	4 hours	Mycoinsecticide	UNF	Beauveria bassiana strain GHA1	1/2 to 1 qt.	1 tsp to 4 tsp.	foliar spray, drench, and dip

BotaniGard® WP

Botanigard® 22WP is a microbial insecticide (mycoinsecticide) that offers activity on contact on a wide range of insect and mite pests as a foliar spray, drench, or dip. Botanigard 22WP may be applied up to the day of harvest (0-hour PHI).

Labelled for use on: food crops and ornamentals grown in greenhouses, shadehouses, nurseries, landscapes, interiorscapes and on turf

Insects controlled: Aphids, root aphids, armyworms, stem borers, caterpillars (moths), flea beetles, leaf miners, leafhoppers, loopers, mealybugs, psyllids, stink bugs, thrips, whiteflies

Packaging: 1 lbs. package, 12 per case

Notes: Botanigard 22WP should be used as a preventative at the first sign of pest activity and may be used multiple times in a crop. Typically, it takes 3-7 days after the first spray to see control. Use in rotation with products with different modes of action to lessen possibility of resistance development.

EPA Reg. No.	REI	Chemical Family	MOA	Active Ingredient	Rate per 100 gallons	Rate per 1 gallon	Application
82074-2	4 hours	Mycoinsecticide	UNF	Beauveria Bassiana strain GHA	½ to 2 lbs.	1.5 to 6 tsp.	foliar spray, drench, and dip

BotaniGard® MAXX

Botanigard® MAXX is a combination insecticide that provides knockdown of adults on contact and controls a wide range of insect and mite pests as a foliar spray or aerial application. Typically it takes 1-5 days after the first spray to see control.

Labelled for use on: ornamentals and vegetables in greenhouses, nurseries, shadehouses, landscape, interiorscape, and on turf.

Insects/pests controlled: Aphids, thrips, psyllids, spider mites, mealybugs, leafhoppers, weevils, plant bugs, borers, and leaf-feeding insects.

Packaging: – 1 gal., 4 per case; 2.5 gal., 2 per case

Notes: Botanigard MAXX is most effective when used early before high populations develop. Application rates, frequency, spray coverage, and insect numbers impact the speed at which acceptable control is achieved.

EPA Reg. No.	REI	Chemical Family	MOA	Active Ingredient	Rate per 100 gallons	Rate per 1 gallon	Application
82074-5	12 hours	Mycoinsecticide	3 + UNF	Beauveria bassiana strain GHA, pyrethrins	½ to 2 qts.	.16 to .64 fl. oz.	foliar spray, drench, and dip

Kopa™ Insecticidal Soap

Kopa Insecticidal Soap is a potassium salt of fatty acid soap that controls insects, mites and powdery mildew. **Kopa** is OMRI listed and approved for organic production.

Labeled for use on: Ornamental and shade trees including flower and foliage plants in greenhouses and outdoors. Pome, stone fruits, small fruits and vegetables, both in field and outdoor production, herbs and spices, hops, coffee and other crops. See full label for specific directions.

Pests controlled: Aphids, spider mites, mealybugs, scale insects, whiteflies, leafhoppers, tent caterpillars, plant bugs, earwigs, powdery mildew

Packaging: 2.5 gallon container, 2 per case

Notes: **Kopa** may be tank mixed with appropriate partners for additional activity.

EPA Reg. No.	REI	Chemical Family	MOA	Active Ingredient	Rate per 100 gallons	Rate per gallon	Application
67702-11-59807	12 hours	Biopesticide - Soaps	UNM	Potassium salts of fatty acids	1 to 2 gallons	1.28 to 2.56 fl. oz. 39 mL to 76 mL	Foliar spray

Grotto®

Grotto fungicide/bactericide is an effective broad-spectrum agent for prevention and control of diseases in a variety of plants and crops. **Grotto** is OMRI listed and approved for organic production.

Labeled for use on: Greenhouse and shadehouse vegetables and herbs, ornamentals, and turf.

Diseases Controlled: Anthracnose, bacterial blights (*pseudomonas*, *erwinia*), *botrytis*, *cercospora* leaf spot, downy mildew, powdery mildew, *phomopsis*, *volutella* leaf blight and more.

Packaging: 1 gallon container, 4 per case.

EPA Reg. No.	REI	Chemical Family	MOA	Active Ingredient	Rate per 100 gallons	Rate per 1 gallon	Application
67702-2-59807	4 hours	Inorganic	M 01	Copper octanoate	0.5 to 2 gallons	3¾ tsp to 15 tsp	Foliar spray

Kalmor®

Kalmor fungicide/bactericide is an effective broad spectrum agent for prevention and control of diseases in a variety of plants and crops. **Kalmor** is OMRI listed and approved for organic production.

Labeled for use on: Ornamentals and greenhouse vegetables.

Diseases Controlled: Anthracnose, bacterial blights (*pseudomonas*, *erwinia*), *botrytis*, *cercospora* leaf spot, downy mildew, powdery mildew, *phomopsis*, *volutella* leaf blight and more.

Packaging: 2.5 lbs, 4 per case

EPA Reg. No.	REI	Chemical Family	MOA	Active Ingredient	Rate per acre	Rate per 1,000 sq ft	Application
91411-11-59807	24 Greenhouse and 48 Nursery	Inorganic	M 01	Copper Hydroxide	0.5 to 2 lbs.	½ TBS to 1½ TBS	Foliar spray

Triact® 70

Triact 70 (clarified hydrophobic extract of Neem oil) is a broad-spectrum fungicide, miticide and insecticide. **Triact 70** is OMRI listed and approved for organic production. **Triact 70** may be used indoors as well as outdoors on ornamental flowering plants, trees, shrubs and foliage grown in greenhouses, interiorscapes and commercial landscapes. As a fungicide, **Triact 70** is a preventative as well as a curative. It coats fungal spores and then dehydrates them to stop the disease cycle. Use **Triact 70** when conditions favor disease development but before major symptoms occur. As a miticide and an insecticide, **Triact 70** acts as a suffocant. To ensure maximum control thorough coverage of **Triact 70** is key. Use **Triact 70** at rates of 0.5 to 2 percent at spray intervals of 7 to 10 days. **Triact 70** makes an excellent tool for all well developed IPM programs.

Labeled for use on: For indoor/outdoor use on ornamental flowering plants, trees, shrubs, foliage, herbs and vegetable plants grown in nurseries, greenhouses and commercial landscapes.

Insects, Mites, and Diseases Controlled: A broad spectrum insecticide, miticide and fungicide. See label for more information.

Packaging: 2.5 gallon container, 2 per case

Notes: Water temperature should be above 45° F. **Triact 70** is compatible with most commonly used fungicides, insecticides, and fertilizers. Avoid tank mixes of oxythioquinox, captan, sulfur, chlorothalonil or other chemically similar products. Refer to the label or Product Information Bulletin for crop sensitivities.

EPA Reg. No.	REI	Chemical Family	MOA	Active Ingredient	Rate per 100 gallons	Rate per 1 gallon	Application
70051-2-59807	4 hours	Oils	NC	Clarified hydrophobic extract of neem oil	0.5 gallon , 1 gallon to 2 gallons	3¾ tsp to 7½ tsp to 15 tsp (5 TBS) (19 mL to 38 mL to 76 mL)	Spray

Triathlon® BA

Triathlon BA is a broad-spectrum preventative biofungicide for control of a wide variety of fungal and bacterial diseases on ornamentals, fruits, vegetables, herbs and spices grown in greenhouses, nurseries, and shadehouses. **Triathlon BA** is OMRI listed and approved for organic production.

Labeled for use on: Ornamentals, vegetables (fruiting and leafy), legumes, cucurbits, corms, fruits, tree nuts, and herbs and spices.

Diseases Controlled: botrytis, powdery mildew, downy mildew, rusts, leaf spots, scab, alternaria, pythium, phytophthora, rhizoctonia, fusarium, and bacterial spot.

Packaging: 1 gallon containers, 4 to a case

Notes: **Triathlon BA** contains a minimum of 1×10^{10} colony-forming units (cfu) of active ingredient per milliliter.

EPA Reg. No.	REI	Chemical Family	MOA	Active Ingredient	Rate per 100 gallons	Rate per 1 gallon	Application
70051-107-59807	4 hours	<i>Bacillus</i> sp. and the fungicidal lipopeptides produced	BM 02	<i>Bacillus amyloliquefaciens</i>	foliar: 0.5 to 6 quarts; drench: 0.5 to 4.5 pints	1 tsp to 7 2/3 tsp to 11 1/2 tsp (4.8 mL to 38 mL to 57 mL)	Spray or drench

FireWorxx™

FireWorxx is a post emergent herbicide for control of weeds in greenhouse, nursery and landscape ornamentals, grounds maintenance, and non-cropland areas. **FireWorxx** is a fast-acting, non-selective broadleaf weed, grass, algae and moss killer. **FireWorxx** is not translocated. It will burn only those plant parts that are coated with spray solution. **FireWorxx** can be used any time during the year and works best during sunny, warm and dry conditions. Application during cold weather may delay appearance of plant damage. If rain falls within 3 hours of treatment, an additional spray may be required. **FireWorxx** controls many common annual weeds and suppresses the growth of biennial and perennial weeds. It can be used in cultivated areas prior to planting crops. Treated areas can be re-planted as soon as desirable level of weed control is obtained.

Labeled for use on: Greenhouse, nursery and landscape ornamentals, grounds maintenance, and non-cropland areas.

Weeds Controlled: **FireWorxx** is a post emergent, burn-down herbicide. Any contact of **FireWorxx** to desirable plants or plant parts will risk significant plant injury. Do not overspray **FireWorxx** onto desirable plants.

Packaging: 1 gallon container, 4 per case

Notes: **FireWorxx** is a Caution labeled, OMRI-listed, USDA Organic herbicide that makes an excellent replacement for applicators concerned with glyphosate-based herbicides. **FireWorxx** is fast acting and does not have residual activity. It can be used around edible crops, herbs, ornamentals, landscapes and non-crop areas.

EPA Reg. No.	REI	Chemical Family	MOA	Active Ingredient	Rate per 100 gallons	Rate per 1 gallon	Application
67702-54-59807	24 hours	Soaps	M	Caprylic Acid + Capric Acid	3 to 9 gallons	3.8 to 11.5 fl. oz.	Contact foliar sprays

OHP Key Pest Problems

Key Pests	OHP Solutions	Recommended Rate per 100 gallons	Recommended Rate per 1 gallon	Spray Interval
Aphids Thrips Whiteflies	Ancora®	16 oz.	5 grams	3 to 5 days
	Azatin® O	12 fl. oz.	4/5 tsp or 3.6 mL	3 to 5 days
	BotaniGard® ES	1/2 to 2 qts.	1 to 4 tsp. or 5 mL to 20 mL	7 to 14 days
	BotaniGard® WP	1/2 to 2 lbs.	1.5 tsp. to 6 tsp. or 7.5 mL to 30 mL	7 to 14 days
	BotaniGard® MAXX	8 to 32 fl. oz.	.08 to .32 fl. oz. or 2.4 mL to 9.6 mL	7 to 14 days
	Kopa™ Insecticidal Soap	1 to 2 gallons	1.3 to 2.6 fl. oz. or 39 mL to 76 mL	7 to 14 days
	Triact® 70	1 gallon	7½ tsp or 38 mL	3 to 5 days
Caterpillars	Azatin® O	8 to 16 fl. oz.	½ tsp to 1 tsp 2.5 mL to 5 mL	7 days
Fungus Gnats	Azatin® O	8 to 16 fl. oz.	½ tsp to 1 tsp 2.5 mL to 5 mL	3 to 5 days
Spider mites	Ancora®	14 to 28 oz.	4 to 8 grams	3 to 5 days
	Kopa™ Insecticidal Soap	1 to 2 gallons	1.3 to 2.6 fl. oz. 39 mL to 76 mL	7 to 14 days
	Triact® 70	0.5 to 1 gallon	3¾ tsp to 7½ tsp 19 mL to 38 mL	3 to 5 days
Botrytis	Triathlon® BA	4 quarts	7 ² / ₃ tsp or 38 mL	3 to 5 days
Downy Mildew	Triathlon® BA	0.5, 4 to 6 quarts	1 tsp, 7 ² / ₃ tsp, 11 ¹ / ₅ tsp 4.8 mL, 38 mL, 57 mL	3 to 5 days
Powdery Mildew	Grotto®	0.5 to 2 gallons	3¾ tsp to 15 tsp or 19 mL to 76 mL	7 to 10 days
	Kalmor®	0.5 to 2 lbs. per acre	½ TBS to 1½ TBS per 1,000 sq. ft.	7 days
	Kopa™ Insecticidal Soap	1 to 2 gallons	1.3 to 2.6 fl. oz. 39 mL to 76 mL	7 to 14 days
	Triact® 70	0.5 to 1 gallon	3¾ tsp to 7½ tsp 19 mL to 38 mL	3 to 5 days
	Triathlon® BA	0.5, 4 to 6 quarts	1 tsp, 7 ² / ₃ tsp, 11 ¹ / ₅ tsp 4.8 mL, 38 mL, 57 mL	3 to 5 days
Weeds, Algae or other undesired plants	FireWorxx™	3, 6, 9 gallons	3.8 to 11.5 fl. oz.	as needed

OHP Product Rate Guide

Fungicides			
Products	Rate per 100 gallons	Rate per 1 gallon	Pre Harvest Interval
Grotto®	0.5 to 2 gallons	3¾ tsp to 15 tsp (5 TBS) (19 mL to 76 mL)	0 days
Kalmor®	0.5 to 2 lbs. per acre	½ TBS to 1½ TBS per 1,000 sq. ft.	0 days
Kopa™ Insecticidal Soap	1 to 2 gallons	1.3 to 2.6 fluid ounces (39 mL to 76 mL)	0 days
Triact® 70	0.5 gallon, 1 gallon, 2 gallons	3¾ tsp, 7½ tsp, 15 tsp (5 TBS) (19 mL, 38 mL, 76 mL)	0 days
Triathlon® BA	0.5 quart, 4 quarts, 6 quarts	1 tsp, 7⅔ tsp, 11⅓ tsp (4.8 mL, 38 mL, 57 mL)	0 days

Insecticides / IGRs/ Miticides			
Products	Rate per 100 gallons	Rate per 1 gallon	Pre Harvest Interval
Ancora®	14 to 28 ounces	4 to 8 grams	0 days
Azatin® O	4 to 16 fluid ounces	¼ tsp to 1 tsp (1.2 mL to 4.8 mL)	0 days
BotaniGard® ES	.5 to 2 qts	1 tsp to 4 tsp (5 mL to 20 mL)	0 days
BotaniGard® 22WP	.5 to 2.0 lbs.	1.5 tsp to 6 tsp (7.5 mL to 30 mL)	0 days
BotaniGard® MAXX	8 to 32 fl. oz	2.4 mL to 9.6 mL	0 days
Kopa™ Insecticidal Soap	1 to 2 gallons	1.3 to 2.6 fluid ounces (39 mL to 76 mL)	0 days
Triact® 70	0.5 gallon, 1 gallon, 2 gallons	3¾ tsp, 7½ tsp, 15 tsp (5 TBS) (19 mL, 38 mL, 76 mL)	0 days

Herbicides			
Products	Rate per 100 gallons	Rate per 1 gallon	Pre Harvest Interval
FireWorxx™	3, 6, 9 gallons	3.8 to 11.5 fluid ounces	NA

Users should read the entire label for full information and application instructions.

TBS = tablespoon tsp = teaspoon mL = milliliter g = grams 1 fl oz = 29.6 mL 1 tsp = 5 mL 1 TBS = 15 mL

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