

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

October 19, 2022

Matthew Brooks
Authorized agent for Plant Health Intermediate Inc DBA DPH Biologicals
Ag-Chem Consulting
12644 Chapel Rd
Clifton, VA 20124

Subject: PRIA (Pesticide Registration Improvement Act) Labeling and Formulation Amendment –

Change of Production Site, Addition of an Alternate Brand Name, and Other Minor

Label and CSF Changes

Product Name: Companion Maxx Liquid Biological Fungicide

EPA Registration Number: 94485-4 EPA Receipt Date: 04/28/2022 Action Case Number: 00357767

## Dear Mr. Brooks:

The amended labeling and Confidential Statement of Formula (CSF) referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, are acceptable.

This approval does not affect any terms or conditions that were previously imposed on this registration. You continue to be subject to existing terms or conditions on your registration and any deadlines connected with them.

Please note that the record for this product currently contains the following acceptable CSF:

• Basic CSF dated 10/04/2022

Any CSFs other than that listed above are superseded/no longer valid.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one (1) copy of the final printed labeling before you release this product for shipment with the new labeling. In accordance with 40 CFR § 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 § CFR 152.3.

Should you wish to add/retain a reference to your company's website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the U.S. Environmental Protection Agency (EPA). If the website is false or misleading, the product will be considered to be misbranded and sale or distribution of the product is unlawful under FIFRA section 12(a)(1)(E). 40 CFR § 156.10(a)(5) lists examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should EPA find or if it is brought to our attention that a website contains statements or

Page 2 of 2 EPA Reg. No. 94485-4 Action Case No. 00357767

claims substantially differing from statements or claims made in connection with obtaining a FIFRA section 3 registration, the website will be referred to EPA's Office of Enforcement and Compliance Assurance.

Your release for shipment of this product constitutes acceptance of these terms. If these terms are not complied with, this registration will be subject to cancellation in accordance with FIFRA section 6.

If you have any questions, please contact Joseph Mabon via email at <a href="mabon.joseph@epa.gov">mabon.joseph@epa.gov</a>.

Sincerely,

Digitally signed by
ALEXANDRA BOUKEDES
Date: 2022.10.19
17:05:00 -04'00'

Alexandra Boukedes, Product Manager 92 Microbial Pesticides Branch Biopesticides and Pollution Prevention Division (7511M) Office of Pesticide Programs

Enclosure

BM02

# COMPANION® MAXX LIQUID BIOLOGICAL FUNGICIDE

[ABN: Bellatrove Companion Maxx]

- Companion<sup>®</sup> Maxx Liquid Biological Fungicide for Agricultural Use
- For Prevention, Control or Suppression of Soil and Foliar Diseases
- Activates ISR (Induced Systemic Resistance) in Plants

# **Active Ingredient**

Bacillus amyloliquefaciens strain ENV503\*...... 00.00078% 

The product density is 9.9 lbs per gallon of product.

# **KEEP OUT OF REACH OF CHILDREN**

### **Hotline Number**

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-222-1222 for emergency medical treatment information. For information on this product, call the National Pesticide Information Center at 1-800-858-7378, Monday through Friday, 8:00 AM to 12:00 PM Pacific time.

(See (back panel) (side panel) for additional precautionary statements.)

# Another quality product for:

Plant Health Intermediate Inc. DBA DPH Biologicals	Net Contents: 1 Quart
1550 East Old 210 Highway	(Net Contents: 1 Gallon)
Liberty, MO 64068	(Net Contents: 2.5 Gallons)
Questions? Call toll free (800) 648-7626	(Net Contents: 5 Gallons)
	(Net Contents: 30 Gallons)
	(Net Contents: 55 Gallons)
	(Net Contents: 275 Gallons)

EPA Registration No. 9448	5-4
(Lot Code / Batch No.	)

EPA Establishment No.

Not for sale or use after: (Date stamped/placed on labeling will be 6 months after the date of manufacture.)

# ACCEPTED

Oct 19, 2022

Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 94485-4

<sup>\*</sup>Contains not less than 6.4 X 10<sup>10</sup> Colony Forming Units (CFU) per gallon of product

## PRECAUTIONARY STATEMENTS

# **Personal Protective Equipment (PPE):**

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

Wear a minimum of a NIOSH-approved particulate filtering facepiece respirator with any N, R, or P filter (if tank mixing with any oil-based adjuvants, spreaders, or spreader/stickers, use only R or P filters); OR a NIOSH approved elastomeric particulate respirator with any N, R, or P filter; OR a NIOSH-approved powered air purifying respirator with HE filters. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**Engineering Controls:** When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d) and (e)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**IMPORTANT:** When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "applicators and other handlers' and have such PPE immediately available for use in an emergency, such as a spill or equipment breakdown.

## **User Safety Recommendations**

Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handing this product. As soon as possible, wash thoroughly and change into clean clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

**Environmental Hazards:** For terrestrial uses: Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

# **DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation.

## **AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about Personal Protective Equipment (PPE), and Restricted-Entry Interval (REI). The requirements in this box only apply to the uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of four (4) hours.

EXCEPTION: If the product is soil injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas (that is permitted under the Worker Protection standard and that involves contact with anything that has been treated, such as plants, soil or water) is:

- Coveralls
- Chemical-resistant gloves (made of any waterproof material)
- Shoes plus socks

# PRODUCT INFORMATION AGRICULTURAL CROPS

- Use On food, forage and flowering crops, tree fruit and nuts
- For prevention, control or suppression of root and foliar diseases
- Activates the plant's defense / immune system (Induced Systemic Resistance [ISR])
- A plant growth-promoting rhizobacteria (PGPR)
- Quickly establishes beneficial colonies on roots and leaves
- Stimulates healthier roots and improves nutrient uptake
- Provides both anti-fungal and anti-bacterial activity
- Exempt from MRLS

# **Product Description:**

Companion® Maxx Liquid Biological Fungicide is a broad spectrum biological fungicide [and bactericide] for the prevention, control or suppression of many soilborne and foliar diseases on the labeled agricultural crops. Apply as a foliar spray or as a soil drench alone or in alternating spray program with other EPA-registered products. Companion® Maxx Liquid Biological Fungicide contains the active ingredient *Bacillus amyloliquefaciens* strain ENV503, a plant growth-promoting rhizobacterium that quickly establishes beneficial colonies on the plant's root and leaves. It protects the roots from invading pathogens, stimulates healthier roots and improves nutrient uptake. *Bacillus amyloliquefaciens* strain ENV503 is also known to trigger the plant's immune system (ISR).

Companion® Maxx Liquid Biological Fungicide can be used on all plant material and is most effective when applied prior to the onset of disease. Use Companion® Maxx Liquid Biological Fungicide in combination and/or rotation with chemical fungicides [and bactericides] to enhance disease control and reduce the occurrence of resistance. For use on the labeled field-grown agricultural crops including vegetables, herbs, small fruits, berries and fruit and nut trees. For use in greenhouse production and hydroponics.

Follow the most restrictive of the labeling limitations and precautions of all products used in mixture.

# Modes of Action:

Companion® Maxx Liquid Biological Fungicide has multiple modes of action in preventing, controlling or suppressing plant diseases Its active ingredient, *Bacillus amyloliquefaciens* strain ENV503, produces broad-spectrum antibiotic lipopeptides (iturin) that disrupt pathogen cell-wall formation and is competitive, fast-colonizing rhizosphere bacterium that occupies the plant's root hairs and leaves. It also prevents the growth and antagonistic effects of soilborne and foliar pathogens. *Bacillus amyloliquefaciens* strain ENV503 is known to stimulate phytohormones, which trigger the plant's systemic resistance to disease (Induced Systemic Resistance - ISR), the defense mechanisms of the plant for prolonged periods of time.

# PGPR (Plant Growth-Promoting Rhizobacteria):

Bacillus amyloliquefaciens strain ENV503 is within the Plant Growth-Promoting Rhizobacteria (PGPR) classification. PGPR are free-living bacteria that have beneficial effects on plants as they increase plant productivity, enhance crop fertility, growth and root development.

## **DISEASE LIST**

#### Alternaria alternate

Brown Spot, Leaf Spot, Stem-End Rot

## Alternaria spp.

- Black Root Rot, Early Blight

# Aspergillus spp.

- Black Mold Rot

# Aspergillus niger

- Black Mold Rot

### Botrytis cinerea

 Crown Rot, Damping-off Fungus, Gray Mold, Leaf Blight

# Candidatus Liberibacter spp.

- Greening (*Huanglongbing* (HLB))

### Colletotrichum acutatum

- Post-Bloom Fruit Drop

## Colletotrichum graminicola

Anthracnose

### Didymella bryoniae

- Gummy Stem Blight

# Erwinia spp.

 Cucurbit Wilting, Soft Rot, Angular Leaf Spot, Bacterial Soft Rot

### Fusarium nivale

- Fusarium Patch

### Fusarium oxysporum

- Wilt

#### Fusarium solani

Areolate Leaf Spot

# Fusarium spp.

- Root Rot, Wilt

# Golovinomyces cichoracearum (formerly called Erysiphe cichoracearum)

Powdery Mildew

## Magnaporthe poae

- Summer Patch

# Mycosphaerella spp.

- Black Sigatoka

# Mycosphaerella citri

- Greasy Spot

## Phytophthora aerial blight

- Blight, Leaf Spot and Rot

# Phytophthora spp.

- Late Blight, Blackeye / Buckeye Rot in Tomatoes
- Brown Rot, Food Rot
- Crown and Root Rot

### Phytophthora citricola

- Crown and Root Rot

# Phytophthora megasperma

- Crown and Root Rot

# Plasmodiophora brassicae

- Corky Root, Clubroot

# Podosphaera xanthii (formerly called Sphaerotheca fuliginea)

Powdery Mildew

# Pythium spp.

- Root Rot, Damping-off, Pythium

### Rhizoctonia spp.

Brown Patch

# Rhizoctonia solani

- Root Rot, Bottom / Stem Rot
- Areolate Leaf Spot

### Sclerotinia

- Dollar Spot
- Blight, Twig Blight, Fruit Rot, Root Rot

# Septoria lycopersici

- Septoria Leaf Spot

### Uncinula necator

Powdery Mildew

# Verticillium spp.

- Wilt

### Xanthomonas campestris

- Bacterial Blight / Leaf Spot

# Xanthomonas axonopodis pv citri

Citrus Canker

# **INTEGRATED PEST (DISEASE) MANAGEMENT (IPM)**

Companion® Maxx Liquid Biological Fungicide is an important tool in sound disease management whenever fungicide use is necessary. Apply Companion® Maxx Liquid Biological Fungicide alone or in combination and / or rotation with chemical fungicides. This will result in reduced susceptibility to disease and overall reduction in the use of chemical fungicides. Consult local agricultural authorities for specific IPM strategies developed for your crop(s) and location.

## **RESISTANCE MANAGEMENT**

For resistance management, Companion® Maxx Liquid Biological Fungicide contains a Group BM02 fungicide/bactericide. Any fungal/bacterial population may contain individuals naturally resistant to Companion® Maxx Liquid Biological Fungicide and other Group BM02 fungicides/bactericides. A gradual or total loss of pest control may occur over time if these fungicide/bactericides are used repeatedly in the same fields. Appropriate resistance-management strategies should be followed.

To delay fungicide/bactericide resistance, take one or more of the following steps:

- Rotate the use of Companion® Maxx Liquid Biological Fungicide or other Group BM02 fungicides/bactericides within a growing season sequence with different groups that control the same pathogens.
- Use tank mixtures with fungicide/bactericide different group that are equally effective on the target pest when such use is permitted. Use at least the minimum application rate as labeled by the manufacturer.
- Adopt an integrated disease management program for fungicide/bactericide use that includes scouting, uses historical
  information related to pesticide use, and crop rotation, and which considers host plant resistance, impact of
  environmental conditions on disease development, disease thresholds, as well as cultural, biological and other chemical
  control practices.
- Where possible, make use of predictive disease models to effectively time fungicide/bactericide applications. Note that using predictive models alone is not sufficient to manage resistance.
- Monitor treated fungal/bacterial populations for resistance development.
- Contact your local extension specialist or certified crop advisor for any additional pesticide resistance-management and/or IPM recommendations for specific crops and pathogens.

# PREHARVEST INTERVAL - AGRICULTURAL USE

Companion® Maxx Liquid Biological Fungicide can be applied up to and including the day of harvest.

## MIXING AND APPLICATION INSTRUCTIONS

Apply Companion<sup>®</sup> Maxx Liquid Biological Fungicide with ground spray equipment, including hand-held sprayers; the specified irrigation systems; and fertigation system. Fit sprayers applying Companion<sup>®</sup> Maxx Liquid Biological Fungicide with a strainer size of 50-mesh or larger. Apply in no less than 50 gal. of water per acre.

### Tank Mixing:

Special care must be taken when tank mixing.

- 1) SHAKE WELL before use and before mixing with water. Prepare no more spray mixture than is required for the immediate operation.
- 2) Thoroughly clean spray equipment before using this product. Remove scale, pesticide residues, and other foreign matter from the chemical supply tank and entire injector system. Flush with clean water. Failure to provide a clean tank, void of scale or residues, can cause product to lose effectiveness or strength.
- Vigorously agitate the mixture to dissolve and disperse the product.
- 4) Companion® Maxx Liquid Biological Fungicide must be diluted with water prior to use.
- 5) Determine the treatment rates as indicated in the directions for use and make proper dilutions.
- 6) Partially fill the spray tank with clean water to the ¾ level and then add the specific amount of Companion® Maxx Liquid Biological Fungicide to the tank as required. Add the remaining water. Mix thoroughly.
- 7) Check pH of tank mix solution prior to adding Companion® Maxx Liquid Biological Fungicide.
- 8) DO NOT allow spray mixture to stand for prolonged periods of time or overnight.

# Compatibility:

Companion® Maxx Liquid Biological Fungicide is compatible with many fertilizers, micronutrients, organic materials, wetting agents, adjuvant, surfactants, most fungicides, herbicides and insecticides, however do not combine with other materials if there is no previous experience, or use of the combination to show it is physically compatible and non-injurious under your conditions. Check for compatibility with other products. Companion® Maxx Biological Fungicide has been evaluated for phytotoxicity on a variety of crops under various normal growing conditions. However, testing all crop varieties, in all mixtures and combinations is not feasible. Therefore, prior to treating entire crop, test a small portion of the crop for sensitivity. Consult your Plant Health Intermediate representative for more information on Companion® Maxx Biological Fungicide compatibility with pesticides, surfactants and fertilizers.

# **Restriction:**

DO NOT mix with copper based fungicides, concentrated acids such as sulfuric acid, solvents, oxidizing agents or bactericides. DO NOT mix with products with a pH below 4 or above 9. Consult specific product labels for additional information or restrictions concerning tank mixing. Observe the most restrictive of the labeling limitations and precautions of all products used in mixtures.

APPLICATIONS AS A FOLIAR OR SOIL SPRAY FOR FIELD CROPS				
Crop	Disease	Product Application Rate, Timing & Frequency		
Berries, including: Blackberry (includes Bingleberry, Black Satin Berry, Boysenberry, Cherokee Blackberry, Chesterberry, Cheyenne Blackberry, Coryberry, Darrowberry, Dewberry, Dirksen Thornless Berry, Himalayaberry, Hullberry, Lavacaberry, Loganberry, Lowberry, Lucretiaberry, Mammoth Blackberry, Marionberry, Nectarberry, Olallieberry, Oregon Evergreen Berry, Phenomenalberry, Rangeberry, Ravenberry, Rossberry, Shawnee Blackberry and Youngberry), Blueberry, Cranberry, Currant, Elderberry, Strawberry, Gooseberry, Huckleberry, Raspberry (Black and Red) and Cultivars, Varieties and/or Hybrids of These. Except for Grapes (Wine,	Black Root Rot, Early Blight Alternaria spp. Crown Rot, Damping-Off Fungus, Gray Mold, Leaf Blight Botrytis cinerea Root Rot Pythium spp. Blight, Leaf Spot and Rot Phytophthora aerial blight Wilt Fusarium oxysporum	32-96 fluid oz. per Acre  2.33-7.00 liters per Hectare  For suppression, begin applications prior to disease development and when environmental conditions are conducive to disease development.  Apply every 7 – 14 days.  Apply through standard spray equipment with no less than 50 gal. water per Acre.		
Table and Raisin), Kiwifruit.  Brassica (Cole) Leafy Vegetables, including: Broccoli, Chinese Broccoli, Broccoli Raab, Brussels Sprouts, Cabbage, Chinese Cabbage (Bok Choy and Napa), Chinese Mustard Cabbage (Gai Choy), Cauliflower, Cavalo Broccolo, Collards, Kale, Kohlrabi, Mizuna, Mustard Greens, Mustard Spinach and Rape Greens.	Black Root Rot, Early Blight Alternaria spp. Crown Rot, Damping-Off Fungus, Gray Mold, Leaf Blight Botrytis cinerea Corky Root, Clubroot Plasmodiophora brassicae Root Rot Pythium spp. Blight, Leaf Spot and Rot Phytophthora aerial blight Wilt Fusarium oxysporum	32 – 96 fluid oz. per Acre  2.33-7.00 liter per Hectare  For suppression, begin applications soon after emergence or transplant and when environmental conditions are conducive to disease development. Can be used in a tank mix or rotational program with other registered pesticide products.  Apply every 7 – 10 days.  Apply through standard spray equipment with no less than 50 gal. water per Acre.		

APPLICATIONS AS A FOLIAR OR SOIL SPRAY FOR FIELD CROPS			
Crop	Disease	Product Application Rate, Timing & Frequency	
Cucurbit Vegetables, including: Chayote, Chinese Waxgourd, Citron Melon, Cucumber, Gherkin, Edible Gourds (includes Chinese Okra, Cucuzza, Hechima and Hyotan), Momordica spp. (includes Balsam Apple, Balsam Pear, Bitter Melon and Chinese Cucumber), Muskmelon (includes True Cantaloupe, Cantaloupe, Casaba, Crenshaw Melon, Golden Pershaw Melon, Honeydew Melon, Mango Melon, Persian Melon, Pineapple Melon, Santa Claus Melon, Snake Melon and Hybrids and/or Cultivars of Cucumis melo), Pumpkin, Summer Squash (includes Crookneck Squash, Scallop Squash, Straightneck Squash, Vegetable Marrow and Zucchini), Winter Squash (includes Acorn Squash, Butternut Squash, Calabaza, Hubbard Squash and Spaghetti Squash) and Watermelon (includes Cultivars, Hybrids and/or Varieties of Citrullus lanatus).	Black Root Rot, Early Blight Alternaria spp. Crown Rot, Damping-Off Fungus, Gray Mold, Leaf Blight Botrytis cinerea Gummy Stem Blight Didymella bryoniae Cucurbit Wilting, Soft Rot, Angular Leaf Spot, Bacterial Soft Rot Erwinia spp. Powdery Mildew Golovinomyces cichoracearum (formerly called Erysiphe cichoracearum), Podosphaera xanthii (formerly called Sphaerotheca fuliginea) Root Rot Pythium spp. Blight, Leaf Spot and Rot Phytophthora aerial blight Wilt Fusarium oxysporum	32 – 96 fluid oz. per Acre  2.33-7.00 liters per Hectare  For suppression, begin applications soon after emergence or transplant and when environmental conditions are conducive to disease development.  Apply every 7 – 10 days.  Apply through standard spray equipment with no less than 50 gal. water per Acre.	
Citrus Fruits, including: Citron, Citrus Hybrids, Grapefruit, Kumquat, Lemon, Lime, Mandarin, Orange, Pummelo, Satsuma Mandarin, Tangelo, Tangerine and Cultivars, Varieties and/or Hybrids of These.	Brown Spot, Leaf Spot, Stem- End Rot Alternaria alternate Black Mold Rot Aspergillus spp. Greening (Huanglongbing (HLB)) Candidatus Liberibacter spp. Post-Bloom Fruit Drop Colletotrichum acutatum Root Rot, Wilt Fusarium spp. Brown Rot, Foot Rot Phytophthora spp. Damping-off, Root Rot Pythium spp. Areolate Leaf Spot Rhizoctonia solani Blight, Twig Blight, Fruit Rot, Root Rot Sclerotinia Bacterial Leaf Spot Xanthomonas campestris Citrus Canker Xanthomonas axonopodis pv. citri Greasy Spot Mycosphaerella citri	32 – 96 fluid oz. per Acre  2.33-7.00 liters per Hectare  For suppression, begin applications at the onset of first new foliar flush on all citrus varieties and when environmental conditions are conducive to disease development.  Apply every 7 – 14 days.  Use Companion® Maxx Liquid Biological Fungicide in a tank mix or rotational program with other registered pesticide products.  Apply through standard spray equipment with no less than 50 gal. water per Acre.	

APPLICATIONS AS A FOLIAR OR SOIL SPRAY FOR FIELD CROPS			
Crop Disease		Product Application Rate, Timing & Frequency	
Grape (Wine, Table and Raisin) Kiwifruit Passionfruit.	Powdery Mildew Uncinula necator Damping-Off, Root Rot	32-96 fluid oz. per Acre 2.33-7.00 liters per Hectare	
Passioniiuit.	Pythium spp. Crown and Root Rot Phytophthora spp., Phytophthora citricola, Phytophthora megasperma	For suppression, begin applications when environmental conditions are conducive to disease development and repeat.	
		Apply every 7 – 14 days.	
		Apply through standard spray equipment with no less than 50 gal. water per Acre.	
Herbs and Spices, including: Allspice, Angelica, Anise, Annatto, Basil, Chamomile, Caraway, Cardamom, Cassia, Celery Seed, Chervil (Dried),	Black Root Rot, Early Blight Alternaria spp. Crown Rot, Damping-Off Fungus, Gray Mold, Leaf	32-96 fluid oz. per Acre 2.33-7.00 liters per Hectare	
Chives, Cinnamon, Coriander, Cumin, Curry, Dill, Fennel, Fenugreek, Horehound, Hyssop, Juniper Berry,	Blight Botrytis cinerea Root Rot	For suppression, begin applications soon after	
Lavender, Lemongrass, Lovage, Mace, Marigold, Marjoram, Mustard, Nasturtium, Nutmeg, Oregano, Parsley	Pythium spp. Blight, Leaf Spot and Rot Phytophthora aerial blight	emergence or transplant and when environmental conditions are conducive to disease	
(Dried), Pepper, Rosemary, Rue, Saffron, Sage, Savory, Sweet Bay, Tansy, Tarragon, Thyme, Vanilla, Wintergreen, Woodruff and Wormwood.	Wilt Fusarium oxysporum	development.  Apply every 7 – 14 days.	
Mint		Apply through standard spray equipment with no less than 50 gal. water per Acre.	
Fruiting Vegetables, including: Eggplant, Groundcherry, Okra, Pepino,	Aspergillus spp. Black Root Rot, Early Blight	32-96 fluid oz. per Acre	
Pepper (includes Bell Pepper, Chili Pepper, Cooking Pepper, Pimento and Sweet Pepper), Tomatillo, Tomato and	Alternaria spp. Crown Rot, Damping-Off Fungus, Gray Mold, Leaf	2.33-7.00 liters per Hectare  For suppression, begin	
Cultivars, Varieties and/or Hybrids of These.	Blight Botrytis cinerea Root Rot Pythium spp.	applications soon after emergence or transplant and when environmental conditions are conducive to disease	
	Rot in Tomatoes Phytophthora spp. Wilt Fusarium oxysporum	development. Can be used in a tank mix or rotational program with other registered pesticide products.	
	Root Rot, Bottom / Stem Rot Rhizoctonia solani	Apply every 7 – 14 days.	
	Blight Sclerotinia minor Bacterial Leaf Spot Xanthomonas campestris Septoria Leaf Spot Septoria lycopersici	Apply through standard spray equipment with no less than 50 gal. water per Acre.	

APPLICATIONS AS A FOLIAR OR SOIL SPRAY FOR FIELD CROPS			
Crop	Disease	Product Application Rate, Timing & Frequency	
Leafy Vegetables (Except Brassica	Black Root Rot, Early Blight	32-96 fluid oz. per Acre	
Vegetables), including: Amaranth, Arugula, Cardoon, Celery, Celtuce, Chervil, Chinese Celery,	Alternaria spp. Crown Rot, Damping-Off Fungus, Gray Mold, Leaf	2.33-7.00 liters per Hectare	
Chrysanthemum (Edible-Leaved and	Blight	For suppression, begin	
Garland), Corn Salad, Cress (Garden and Upland), Dandelion, Dock (Sorrel),	Botrytis cinerea Root Rot	applications soon after emergence or transplant and	
Endive (Escarole), Fennel, Lettuce	Pythium spp.	when environmental conditions	
(Head and Leaf), Orach, Parsley,	Powdery Mildew	are conducive to disease	
Purslane (Garden and Winter), Radicchio, Rhubarb, Spinach, Spinach	Golovinomyces cichoracearum (formerly called Erysiphe	development.	
(New Zealand and Vine) and Swiss Chard, including Those Grown for Seed	cichoracearum), Podosphaera xanthii (formerly called	Apply every 7 – 14 days.	
Production.	Sphaerotheca fuliginea)		
	Blight, Leaf Spot and Rot Phytophthora aerial blight	Apply through standard spray	
	Root Rot, Bottom / Stem Rot	equipment with no less than 50	
	Rhizoctonia solani	gal. water per Acre.	
	Lettuce Drop		
	Sclerotinia minor Wilt		
	Fusarium oxysporum		
Legume Vegetables, including:	Aspergillus spp.	32-96 fluid oz. per Acre	
Bean, Broad Bean, Chickpea, Guar, Jackbean, Lentil, Pea, Pigeon Pea and	Black Root Rot, Early Blight  Alternaria spp.	2.33-7.00 liters per Hectare	
Soybean.	Crown Rot, Damping-Off	2.55-7.00 liters per nectare	
	Fungus, Gray Mold, Leaf		
	Blight	For suppression, begin	
	Botrytis cinerea Root Rot	applications soon after	
	Pythium spp.	emergence or transplant and when environmental conditions	
	Blight, Leaf Spot and Rot	are conducive to disease	
	Phytophthora aerial blight Root Rot, Bottom / Stem Rot	development.	
	Rhizoctonia solani	Apply overy 7 14 days	
	Wilt	Apply every 7 – 14 days.	
	Fusarium oxysporum Blight	Apply through standard spray	
	Sclerotinia minor	equipment with no less than 50	
	Bacterial Blight / Leaf Spot	gal. water per Acre.	
	Xanthomonas campestris		
	Septoria Leaf Spot Septoria lycopersici		
Bulb Vegetables, including: Fresh Leaves Chive, Garlic, Leek,	Black Root Rot, Early Blight Alternaria spp.	32-96 fluid oz. per Acre	
Onion, Shallot and Cultivars, Varieties	Crown Rot, Damping-Off	2.33-7.00 liters per Hectare	
and/or Hybrids of These.	Fungus, Gray Mold, Leaf Blight		
	Boot Bot	For suppression, begin	
	Root Rot Pythium spp.	applications when environmental conditions are conducive to	
	Blight, Leaf Spot and Rot	disease development and	
	Phytophthora aerial blight	repeat.	
	Blight Sclerotinia minor		
	Bacterial Blight/ Leaf Spot	Apply every 7 – 14 days.	
	Xanthomonas campestris	Apply through standard spray	
	Soft Rot, Angular Leaf Spot,	equipment with no less than 50	
	Bacterial Soft Rot Erwinia spp.	gal. water per Acre.	
	a opp.	1	

APPLICATIONS AS A FOLIAR OR SOIL SPRAY FOR FIELD CROPS			
Crop	Disease	Product Application Rate, Timing & Frequency	
Root and Tuber Vegetables, including: Arracacha, Arrowroot, Artichoke, Beet, Carrot, Cassava, Celeriac, Chayote (Root), Chervil (Turnip-Rooted), Chicory, Chufa, Dasheen, Ginger, Ginseng, Horseradish, Parsnip, Potato, Radish, Rutabaga, Salsify, Skirret, Sweet Potato, Turmeric, Turnip and Yam.	Black Root Rot, Early Blight Alternaria spp. Crown Rot, Damping-Off Fungus, Gray Mold, Leaf Blight Botrytis cinerea Root Rot Pythium spp. Soft Rot, Angular Leaf Spot, Bacterial Soft Rot Erwinia spp. Root Rot, Bottom / Stem Rot Rhizoctonia solani Fusarium solani	32-96 fluid oz. per Acre  2.33-7.00 liters per Hectare  For suppression, begin applications when environmental conditions are conducive to disease development and repeat.  Apply every 7 – 14 days.  Apply through standard spray	
		equipment with no less than 50 gal. water per Acre.	
Tropical and Subtropical Fruits, Inedible Peel (Except Banana, Passionfuit and Plantain), including: Mango, Papaya, Avocado and Pineapples.  Coffee	Root Rot Pythium spp. Crown Rot, Damping-Off Fungus, Gray Mold, Leaf Blight Botrytis cinerea Powdery Mildew Golovinomyces cichoracearum (formerly called Erysiphe cichoracearum) Wilt Fusarium oxysporum	32-96 fluid oz. per Acre  2.33-7.00 liters per Hectare  For suppression, begin applications soon after emergence or transplant and when environmental conditions are conducive to disease development.  Apply every 7 – 14 days.  Apply through standard spray equipment with no less than 50 gal. water per Acre.	
Banana and Plantain	Black Sigatoka Mycosphaerella spp.	32-96 fluid oz. per Acre  2.33-7.00 liters per Hectare  Begin applications when leaves first appear and repeat every 7 days. For improved disease control, Companion® Maxx Liquid Biological Fungicide can be tank mixed with oil or other registered fungicides for control of Black Sigatoka.  Apply through standard spray equipment with no less than 50 gal. water per Acre.	

APPLICATIONS ON GRASSES		
Сгор	Disease	Product Application Rate, Timing & Frequency
Grasses Grown for Seed, Sod Production and Pasture and Forage	Anthracnose Colletotrichum graminicola	32-96 fluid oz. per Acre
Grasses	Brown Patch Rhizoctonia spp.	2.33-7.00 liters per Hectare
	Dollar Spot Sclerotinia Summer Patch Magnaporthe poae Fusarium Patch Fusarium nivale Pythium Pythium spp.	Apply at time of seeding, plugging sprigs and newly cut ribbons.  Apply through standard spray equipment with no less than 50 gal water per Acre.
		Apply every 7 – 14 days.

## **APPLICATION DIRECTIONS**

**Agriculture Applications:** Observe the most restrictive of the labeling limitations and precautions of all products used in mixtures.

# **Foliar Application**

Apply as a spray for suppression or control of fungal and bacterial diseases of foliage, flower, developing fruit and other above-ground parts of plants. Mix Companion® Maxx Liquid Biological Fungicide with sufficient amount of water to cover treated area. Apply direct sprays to provide thorough coverage of crop canopy to run off. Begin application for disease suppression when seedlings emerge or at time of transplanting. Companion® Maxx Liquid Biological Fungicide can be mixed or rotated with other fungicides to improve efficacy and reduce resistance. Apply by ground spray equipment, or chemigation. Companion® Maxx Liquid Biological Fungicide can be applied up to and including the day of harvest.

- Soil or Seedline Drench, or banded spray (in-furrow) at planting. Seedlings: Mix into field transplant water and drench at the time of planting of seeds. Drench in a seedline or banded spray (in furrow) at time of planting plug, starter plant, or bare-root transplant. See section on "Banded (in-furrow) application" below for additional instructions.
- Soil Spray on soil surface for established plants, vines and trees for root disease pressure. Follow
  application with sufficient irrigation water to ensure penetration into root zone. See rates for
  specific crops.
- Dip bare-root transplant soak in the solution of Companion® Maxx Liquid Biological Fungicide.
   Mix 4 fl. oz. to 8 fl. oz. of in 100 gallons of water and mix well. Submerge transplant in mix for 1 –
   5 minutes and plant immediately. The whole transplant can be dipped, if desired. Companion®
   Maxx Liquid Biological Fungicide can be used in a tank mix or rotational program with other
   registered products.
- Plug Drench / Dip: Mix 4 fl. oz. to 8 fl. oz. in 100 gallons of water. Thoroughly mix in water. Soil
  drench plug trays, transplants in flats or pots in the greenhouse or nursery any time prior to
  transplanting. Submerge in mix for 30 seconds. The whole transplant or plug tray can be dipped,
  if desired. Can be tank mixed with other registered pesticides.
- Drip (trickle), micro sprinklers or any type of sprinkler irrigation. Apply any time after planting or transplanting. See Chemigation Instructions for additional information. Add to stock solution. Do not mix with concentrated acids or if pH of solution is below 4 or above 9. Use all of the solution on the same day. Inject during the last half of irrigation cycle so that Companion® Maxx Liquid Biological Fungicide is in the root zone and not lost to deep percolation. Begin applications when conditions first become favorable for disease development.

## In-Furrow / Banding

Mix with transplant water. Apply as an in-furrow drench, in sufficient water to obtain thorough coverage of the open furrow, covering soil. Apply at time of planting plug, starter plant or cutting. In-furrow applications are more effective against soil-borne diseases that may develop later in the growing season.

Spray directly onto soil using single or multiple nozzles. Adjust to provide thorough coverage of soil surface surrounding plants. Limit band to 4' - 6" wide or drench over seed line centered over the planting furrow. Can be applied directly over seeds prior to soil cover and plastic. Begin applications at time of when conditions first become favorable for disease development. Volume of water required will depend on application equipment.

Fluid ounces needed per 1,000 linear feet of banded spray for growing row width.

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Fluid	10	20	30	40	
oz./Acre	inches	inches	inches	inches	50 inches
16	5	10	15	20	24
24	7	15	22	29	37
32	10	20	29	39	49
54	17	33	50	66	83
64	20	39	59	78	98

Hydroponics Systems					
Diseases	Diseases Crop Product Rates Frequency & N				
Alternaria spp Early Blight, Leaf Spot Aspergillus niger - Black Mold Botrytis cinerea - Blight, Bud Rot, Crown Rot, Damping-Off, Leaf Blight, Grey Mold Didymella bryoniae - Gummy Stem Blight Erysiphe spp Powdery Mildew Fusarium spp Bacterial Blight, Basal Rot, Damping- Off, Pink Root, Root Rot, Stem	Mix 4 fl. oz. in 1 gallon of water (125 ml in 4 liters of water)	Soak seeds/plugs with Companion® Maxx Liquid Biological Fungicide before placing them in growing trays.  Do not use treated seed for food or feed purposes or for processing into oil. Treat only those seeds needed for immediate use.			
Canker, Wilt, Head Blight  Phytophthora spp Brown Rot, Crown Rot, Foot Rot, Late Blight, Leaf Blight, Leaf Rot, Leaf Spot, Root Rot  Pythium spp Black Rot,		Charging Rate: 1 fl. oz. per 30 gallons of water in nutrient tank (30 ml per 120 liters of water)	Apply at time of placement in trays. Run through system.		
Damping-Off, Root Rot Rhizoctonia spp Borrom Rot, Damping Off, Head Wilt Wilt Sclerotinia spp Blight Verticillium spp Wilt Xanthomonas spp Bacterial Leaf Spot	Herbs and Leafy Crops, Tomatoes and Fruiting Vegetables	Recharging Rate: 1 fl. oz. per 50 gallons of water. (30 ml per 200 liters of water)	Replenish every time water is added or every 5 – 7 days.		

# **Growing Systems**

Type of System	Product Rates	Frequency & Notes
Closed Re-circulating System for Ebb and Flow in rock wool and peat / perlite mixtures, and Nutrient Film Technique	Charging Rate: Mix 1 fl. oz. per 30 gallons water. (30 ml / 120 liters)  Recharging Rate: 1 fl. oz. per 50 gallons of water. (30 ml per 200 liters water)	Apply Companion <sup>®</sup> Maxx Liquid Biological Fungicide after each water change. Clean mix tank weekly. Pre- soak transplants in same solution mix.
Open Systems	Mix 16 fl. oz. per 100 gallons of nutrient mix (500 ml / 400 liters). For smaller volumes mix 1 tsp. per gallon.	Apply Companion® Maxx Liquid Biological Fungicide at the end of the watering cycle so that it stays in the system longer. Repeat the application by checking the quality of the roots.
Soilless Mix Hydro Gardens (Aggregate Systems), Trickle Feed Method and Soil Gardens For peat moss, perlite, vermiculite, sand, gravel, clay pebbles, foam chips and rockwool medias.	Mix 16 fl. oz. per 100 gallons of nutrient mix (500 ml / 400 liters).	Apply by checking the quality of the roots. Apply Companion® Maxx Liquid Biological Fungicide at the end of the watering cycle so that it stays in the system longer.

# **CHEMIGATION**

### **Overall Requirements -**

- 1) Apply this product only through sprinkler (including center pivot, lateral move, end tow, side (wheel) roll, or hand move); flood (basin), furrow or border; or drip (trickle) irrigation systems. Do not apply this product through any other type of irrigation system.
- Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
- 3) If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- 4) Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
- 5) A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

# Specific Requirements for Chemigation Systems Connected to Public Water Systems -

- Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
- 2) Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
- 3) The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- 4) The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- 5) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

- 6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- 7) Do not apply when wind speed favors drift beyond the area intended for treatment.

# Specific Requirements for Sprinkler Chemigation -

- The system must contain a functional check valve, vacuum relief valve and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
- 2) The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- 3) The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- 4) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- 5) The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- 6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being filled with a system interlock.
- 7) Do not apply when wind speed favors drift beyond the area intended for treatment.

## Specific Requirements for Flood (Basin), Furrow and Border Chemigation -

- 1) Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential for water source contamination from backflow if water flow stops.
- 2) The systems utilizing a pressurized water and pesticide injection system must meet the following requirements:
  - a. The system must contain a functional check valve, vacuum relief valve and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
  - o. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
  - The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
  - d. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
  - e. The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
  - f. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being filled with a system interlock.

# Specific Requirements for Drip (Trickle) Chemigation -

- 1) The system must contain a functional check valve, vacuum relief valve and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
- 2) The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- 3) The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- 4) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- 5) The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- 6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being filled with a system interlock.

# Application Instructions for All Types of Chemigation -

- 1) Remove scale, pesticide residues, and other foreign matter from the chemical supply tank and entire injector system. Flush with clean water. Failure to provide a clean tank, void of scale or residues, may cause product to lose effectiveness or strength.
- 2) Determine the treatment rates as indicated in the directions for use and make proper dilutions. Product can be applied continuously or at any time during the water application.
- Prepare a solution in the chemical tank by filling the tank with the required water and then adding product as required. The product will immediately go into suspension without any required agitation.

### STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

**Pesticide Storage:** Store in a dry place out of direct sunlight and away from heat sources. Keep from overheating or freezing.

**Pesticide Disposal:** Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

## **Container Handling:**

(For containers ≤ 5 gallons)

Nonrefillable container. Do not reuse or refill this container. Triple rinse container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. If burned, stay out of smoke.

# (For containers >5 gallons)

Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. If burned, stay out of smoke.

### **Warranty and Disclaimer Notice**

The directions for use of this product are believed to b adequate and must be followed carefully, it is impossible to eliminate all risk inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result due to such factors as weather conditions, presence or absences of other materials, or the manner of use or application, all of which are beyond the control of Plant Health Intermediate Inc., the manufacturer, or the seller.

To the extent consistent with applicable law, the products sold to you are furnished "as is" by Plant Health Intermediate Inc. The manufacturer and the seller are subject only to the manufacturer's warranties, if any, which appear on the label of the product sold to you. Except as warranted by this label, Plant Health Intermediate Inc, the manufacturer, or the seller makes no warranties, guarantees, or representations of any kind to the buyer or the user, either express or implied, or by usage of trade, statutory or otherwise, with regard to the product sold or use of the product, including, but not limited to merchantability, fitness for a particular purpose or use, or eligibility of the product for any particular trade usage. To the extent consistent with applicable law, Buyer's or user's exclusive remedy, and Plant Health Intermediate Inc., the manufacturer's or the seller's total liability shall be limited to damages not exceeding the cost of the product. No agent or employee of Plant Health Intermediate Inc., or the seller is authorized to amend the terms of this warranty disclaimer or the product's label or to make a presentation or recommendation different from or inconsistent with the label of this product.

To the extent consistent with applicable law, Plant Health Intermediate, Inc., the manufacturer, or the seller shall not be liable for consequential, special, or indirect damages resulting for the use, handling, application, storage, or disposal of this product or for damages in the nature of penalties, and buyer and the user waive any right that they may have to such damages.