

COPPER GROUP M1 FUNGICIDE

# Champ<sup>++</sup>ION<sup>TM</sup>

## Fungicide / Bactericide<sup>†</sup>

### ACTIVE INGREDIENT:

Copper Hydroxide\* (CAS No. 20427-59-2)..... 46.1%

**OTHER INGREDIENTS:** ..... 53.9%

**TOTAL:** ..... 100.0%

\*Metallic Copper Equivalent 30.0%

## KEEP OUT OF REACH OF CHILDREN CAUTION / PRECAUCIÓN

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

**SEE LABEL BOOKLET FOR FIRST AID, PRECAUTIONARY STATEMENTS,  
AND DIRECTIONS FOR USE.**

For Medical Emergencies, Call (877) 325-1840

For Chemical Spill, Leak, Fire, or Exposure, Call CHEMTREC (800) 424-9300

<sup>†</sup>Non-public health bacteria

**EPA Reg. No. 55146-115**

Made in Chile **14731000**

Manufactured For  
NUFARM AMERICAS INC.  
AGT DIVISION  
11901 S. Austin Avenue  
Alsip, IL 60803



 **Nufarm**

Grow a better tomorrow

## FIRST AID

<b>IF INHALED</b>	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li><li>• Call a poison control center or doctor for further treatment advice.</li></ul>
<b>IF SWALLOWED</b>	<ul style="list-style-type: none"><li>• Call a poison control center or doctor immediately for treatment advice.</li><li>• Have person sip a glass of water if able to swallow.</li><li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
<b>IF IN EYES</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>IF ON SKIN OR CLOTHING</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15 to 20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>

## 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 1-877-325-1840 for emergency medical treatment information.

## NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate use of gastric lavage.

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

### CAUTION / PRECAUCIÓN

Harmful if inhaled. Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes or clothing. Avoid breathing dust.

## **PERSONAL PROTECTIVE EQUIPMENT (PPE)**

### **Mixers, loaders, applicators, and other handlers must wear the following:**

- Protective eyewear
- Long-sleeved shirt and long pants
- Shoes plus socks
- Waterproof gloves

Discard clothing and other absorbent material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them. Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

## **Engineering Controls**

Pilots must use an enclosed cab that meets the definition listed in the WPS for agricultural pesticides [40 CFR 170.305].

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

## **USER SAFETY RECOMMENDATIONS**

### **Users Should:**

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## **ENVIRONMENTAL HAZARDS**

This pesticide is toxic to fish and aquatic invertebrates and may contaminate water through runoff. This product has a potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

Do not apply directly to water, 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 (WPS), 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), restricted-entry interval, and notification to workers. The requirements in this box only apply to 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 48 hours**.

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, shoes plus socks, waterproof gloves, and protective eyewear.

**For greenhouse uses, the REI is 24 hours provided the following conditions are met:**

For at least seven days following the application in greenhouses:

- ◆ at least one container or station designed specifically for flushing eyes is available in operating condition with the WPS-required decontamination supplies for workers entering the area treated with copper-containing products,
- ◆ workers are informed orally, in a manner they can understand:
  - that residues in the treated area may be highly irritating to their eyes,
  - that they should take precautions, such as refraining from rubbing their eyes, to keep the residues out of their eyes,
  - that if they do get residues in their eyes, they should immediately flush their eyes with the eye flush container or eye flush station that is located with the decontamination supplies, and how to operate the eye flush container or eye flush station.

## NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are not within the scope of the Worker Protection Standard (WPS) for agricultural pesticides 40 CFR part 170. The Worker Protection Standard (WPS) applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

Do not enter or allow others to enter until sprays have dried.

## PRODUCT INFORMATION AND USE INSTRUCTIONS

This product can be used with all types of spray equipment. The volume per acre will differ depending on the specific crop and the equipment used. Thorough coverage is essential for best results. Use this product according to instructions on this label.

**MIXING INSTRUCTIONS:** Proper mixing of this product with water requires use of a spray tank equipped with agitation.

### Mixing Order

- 1. Water:** Begin by agitating a thoroughly clean sprayer tank containing one-half the required amount of clean water.
- 2. Agitation:** Maintain constant agitation throughout mixing and application.
- 3. Inductor:** If an inductor is used, rinse it thoroughly after each application.
4. Slowly add the required amount of this product to the sprayer tank to prevent system and/or port blockage.
- 5. Remaining Quantity of Water:** Continue agitation while slowly adding the remaining volume of clean water and allow time for good dispersion. Make sure that **the product** is thoroughly mixed and dispersed before adding additives.
- 6. Additives:** Add any tank mix partners last. If you do not have previous experience with **this product** and additive mixtures, conduct a small-jar test to confirm compatibility of tank mixtures prior to full scale use. Follow the most restrictive of the tank mix partners label limitations and precautions.

Maintain constant agitation during application.

### APPLYING SPRAY MIXTURE.

This product may be applied as an aerial or ground concentrate spray unless specifically directed otherwise by crop in the use instructions.

Under heavy disease pressure or when conditions favor such, use the higher rate and shorter spray intervals specified for each crop. In addition, use the higher rates for large mature tree crops.

The per acre use rate of this product is applicable for both dilute and concentrate spraying. Consult this label for specific rates and timing of application by crop.

Complete spray coverage is essential to assure optimum performance from this product. When treating on a concentrate basis or by aerial application, unless you have had specific previous experience, it is advisable to test for compatibility and crop tolerance prior to full-scale commercial utilization.

While volume is important in obtaining full spray coverage, other factors such as foliage density, environmental conditions and sprayer calibrations, can have a greater impact. Always be sure that sprayers are calibrated to spray equipment manufacturer's specifications and environmental conditions are within those specified by state and local regulatory authorities.

<b>MINIMUM SPRAY VOLUMES†</b>			
<b>Crops</b>	<b>Dilute (Ground) Gallons / Acre</b>	<b>Concentrate (Ground) Gallons / Acre</b>	<b>Aerial Gallons / Acre</b>
<b>Citrus</b>	800	100 **	10
<b>Conifers</b>	100	30	10
<b>Field Crops</b>	20	3	3
<b>Berries</b>	150	50	5
<b>Tree Crops (except citrus)</b>	400	50	10
<b>Tropical Crop (Low volume):</b> Guava, Litchi, Mamey Sapote, Papaya, Passion Fruit, Sugar Apple (Annona)	150	50	10
<b>Tropical Crops (High volume):</b> Banana, Cacao, Coffee, Mango, Plantain	400	50	10
<b>Vegetables</b>	20	3	3
<b>Vines</b>	150	50	5
<b>Miscellaneous</b>	150	50	10

<sup>†</sup>See crop specific Use Instructions for additional information regarding recommended spray volumes for certain crops.

<sup>\*\*</sup>Spray volumes as low as 20 gallons per acre may be used with pesticide application equipment such as “Curtec” or similar sprayers that are capable of obtaining thorough coverage at low volumes.

## **USE PRECAUTIONS**

- The pre-harvest interval (PHI) for this product is 0-days unless otherwise noted in the crop specific Use Instructions.
- Agricultural chemicals may react with soft metals (e.g., aluminum) and some synthetic materials (e.g., plastics, rubbers, etc.) used in the construction of application equipment. Thoroughly flush all application equipment with clean water after each day's use. This product may react with masonry and metal surfaces such as galvanized roofing. Avoid contact with metal surfaces. Do not spray on houses, cars, lawn furniture, or other metal surfaces where the quality of the finish is a concern.
- Environmental conditions such as extended periods of wet weather, acid rain, etc. which alter the pH of the leaf surface may affect the performance of this product resulting in possible phytotoxicity or loss of effectiveness.
- Application of this product to wet crops or a rain event occurring before the spray is dry may result in reduced performance.
- Unpredictable performance or crop injury may result from tank mixing this product with certain pesticides or additives, especially when tank mixing multiple products. Unless a tank mixture with other pesticides or additives has been determined to be compatible and non-injurious to the crop under your conditions of use, test for compatibility and potential crop injury prior to commercial use.

## **RESTRICTIONS**

- Pilots must use an enclosed cab that meets the definition listed in the WPS for agricultural pesticides [40 CFR 170.305].
- Do not apply this product in a spray solution having a pH of less than 6.5 as phytotoxicity may occur.
- In California, do not apply in systems which contain aluminum parts or components.
- Do not tank mix this product with Aliette® Fungicide unless appropriate precautions are taken to buffer the spray solution or severe phytotoxicity may result.

## **SPRAY DRIFT**

### **Aerial Applications**

- Do not release spray at a height greater than 10 feet above the vegetative canopy or water, unless a greater application height is necessary for pilot safety.
- Applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- Do not apply when wind speed exceeds 15 mph at the application site. If the windspeed is greater than 10 mph, the boom length must be 65% or less of the wingspan for fixed wing aircraft and 75% or less of the rotor diameter for helicopters. Otherwise, the boom length must be 75% or less of the wingspan for fixed-wing aircraft and 90% or less of the rotor diameter for helicopters.
- Applicators must use ½ swath displacement upwind at the downwind edge of the application area.
- Do not apply during temperature inversions.

### **Ground Boom Applications**

- Apply with the spray release height recommended by the manufacturer, but no more than 4 feet above the ground or crop canopy.
- Applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- Do not apply when wind speeds exceed 15 mph at the application site.
- Do not apply during temperature inversions.

## **SPRAY DRIFT ADVISORIES**

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT.

BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

### **IMPORTANCE OF DROPLET SIZE**

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

### **Controlling Droplet Size – Ground Boom**

- Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.



- Pressure - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

### **Controlling Droplet Size – Aircraft**

- Adjust Nozzles - Follow nozzle manufacturers recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

### **BOOM HEIGHT – Ground Boom**

Use the lowest boom height that is compatible with the spray nozzles that will provide uniform coverage. For ground equipment, the boom should remain level with the crop and have minimal bounce.

### **RELEASE HEIGHT – Aircraft**

Higher release heights increase the potential for spray drift. When applying aurally to crops, do not release spray at a height greater than 10 ft. above the crop canopy, unless a greater application height is necessary for pilot safety.

### **SHIELDED SPRAYERS**

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

### **TEMPERATURE AND HUMIDITY**

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

### **TEMPERATURE INVERSIONS**

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

### **WIND**

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS. Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

## **RESISTANCE MANAGEMENT RECOMMENDATIONS**

For resistance management, ChampION<sup>++</sup> Fungicide/Bactericide contains copper hydroxide, a Group M1 fungicide/bactericide. Any fungal/bacterial population may contain individuals naturally resistant to ChampION<sup>++</sup> Fungicide/Bactericide and other Group M1 fungicides/bactericides. A gradual or total loss of pest control may occur over time if these fungicides/bactericides are used repeatedly in the same fields. Appropriate resistance-management strategies should be followed.

The following steps may delay the development of fungicide/bactericide resistance:

- Rotate the use of this product or other Group M1 fungicides/bactericides within a growing season sequence with different groups that control the same pathogens.
- Use tank mixtures with fungicides/bactericides from a different group that are 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.

## **CHEMIGATION APPLICATION**

Apply this product only through sprinkler irrigation systems including center pivot, motorized lateral move, end tow, traveler, big gun, plastic solid set, or plastic hand move; do not apply this product through any other type of irrigation system. In California, do not apply in systems which contain aluminum parts or components.

Crop injury, lack of effectiveness or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, contact State Extension Service specialists, equipment manufacturers or other experts.

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.

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.

### **Chemigation Systems Connected to Public Water Systems**

1. 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. For nonpublic water sprinkler chemigation systems, 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.
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 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 shutdown.
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. For non-public water sprinkler chemigation systems, the irrigation line or water pump must include a functional pressure switch which 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 fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

For all chemigation systems, use a pesticide supply tank equipped with a means for continuous agitation either by recirculation or a mechanical agitator. Charge the supply tank with the appropriate amount of water and add the pesticide slowly followed by any sticker-spreaders, insecticides, nutrients, etc. Observe all precautions and limitations on the label of all products used in the mixtures. For fixed position irrigation systems such as center pivot, big gun, etc., apply the pesticide towards the end of the irrigation period. Exact timing will depend on the desired pesticide application rate and calibration of the system. For moving systems, the pesticide should be applied continuously. In all cases, thorough coverage of the crop should be achieved.

**NOTE:** IRRIGATION SYSTEMS AND ASSOCIATED PIPING SHOULD BE THOROUGHLY FLUSHED WITH CLEAN WATER FOLLOWING APPLICATION OF COPPER BASED FUNGICIDES. FLUSHING MUST BE DONE IN A MANNER WHICH WILL NOT WASH THE PRODUCT FROM THE FOLIAGE AND REDUCE DISEASE CONTROL.

No additional surfactants are needed unless specified for an individual crop. Add this product to the spray tank followed by any sticker-spreaders, insecticides, nutrients, etc. Observe all cautions and limitations on the label of all products used in mixtures. The specific instructions given on this label are based on general applications and circumstances. The recommendations of the State Agricultural Extension Service should be closely followed as to timing, frequency and number of sprays per season.

**NOTE:** APPLICATION TO PLANT SURFACES SPRAYED WITH AND WHICH HAVE LOW pH CHEMICAL RESIDUE MAY ALSO RESULT IN CROP INJURY.

### **Sprinkler Chemigation System Requirements**

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 which 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 fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

#### **FROST INJURY PROTECTION**

**Bacterial Ice Nucleation Inhibitor:** Application of this product made to all crops listed on this label at rates and stages of growth indicated on this label just prior to anticipated frost conditions will afford control of ice nucleating bacteria (*Pseudomonas Syringae*, *Erwina Herbicola* and *Pseudomonas Fluorescens*) and may therefore provide protection against light frost. Use the higher labeled rates (when a range is given) when bacterial infection is severe. Not recommended in those geographical areas where weather conditions favor severe frost.

## BERRIES, VINES AND HOPS

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
<b>BRAMBLES</b> (Blackberry, Santiam, Logan, Boysen, Marion, Aurora, Cascade, Chehalem, Thornless Evergreen)	Leaf Spot, Cane Spot, Purple Blotch, Anthracnose, Yellow Rust, and Pseudomonas Blight	1.75	33.3	7	Apply delayed dormant spray after training in spring. Make fall spray application after harvest. The addition of crop oil may improve performance.
	Leaf Spot, Cane Spot, Purple Blotch, Anthracnose, and Yellow Rust	0.75			Apply when leaf buds begin to open and repeat when flower buds show white. The addition of 1 quart of crop oil per acre may improve performance. <b>NOTE:</b> Crop injury may occur if applied to foliage under certain conditions such as hot or prolonged moist periods. Discontinue applications if signs of crop injury appear.
<b>BLUEBERRY</b>	Bacterial Canker	1.75-3.5	28	7	Make first application before the fall rains and a second application four weeks later.
	Fruit Rot, Phomopsis Twig Blight	1.0-2.25			Begin dormant applications when bloom buds begin to swell. Make additional applications at 7 to 14 day intervals prior to blooms opening.

(continued)

**BERRIES, VINES AND HOPS (continued)**

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
CRANBERRY	Fruit Rot	3.5	42	7	Apply beginning in late bloom. Make one or two additional applications at 7 to 14 day intervals if needed depending on disease pressure.
	Rose Bloom				Make three applications at 7 to 14 day intervals as soon as symptoms are observed.
	Bacterial Stem Canker				Apply post harvest and again in the spring before bud burst. Make one or two additional applications at 7 to 14 day intervals if needed depending on disease pressure.
	Tip Blight (Monilinia), Stem Blight, Leaf Blight, Red Leaf Spot				Apply as a delayed dormant spray in the spring. Repeat at 7 to 14 day intervals as needed through pre-bloom.
CURRENT GOOSEBERRY	Anthrachnose, Leaf Spot	4.25	53.3	10	Begin applications after first leaves have unfolded. Repeat applications at 10 to 14 day intervals during wet conditions in the spring. Make one additional application after harvest.

*(continued)*

# BERRIES, VINES AND HOPS (continued)

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
GRAPE	Black Rot, Phomopsis, Powdery Mildew, Downy Mildew	0.75-1.75	66.7	3	Begin application at bud break and repeat at 3 day intervals throughout the season if needed.  <b>NOTE:</b> Slight to severe foliage injury may occur in copper-sensitive varieties such as Concord, Delaware, Niagara and Rosette. Either test for sensitivity when treating these varieties or others known to be sensitive to copper or use a lower rate of this product. The addition of hydrated lime at a rate of 1 to 3 pounds per 100 gallons of spray solution may reduce the severity of phytotoxicity. Mix this product and water first before adding lime or incompatibility may occur.
HOPS	Downy Mildew	0.75-1.5	8.83	10	Apply as a fungicide crown treatment after pruning, but before training. After training, apply at 10 day intervals if needed.  <b>NOTE:</b> Discontinue use 2 weeks before harvest.
KIWIFRUIT	<i>Erwinia herbicola</i> , <i>Pseudomonas syringae</i> , <i>Pseudomonas fluorescens</i>	2.0-3.5 (in 200 gallons of water)	21	30	Make monthly applications with a maximum of 3 applications per season.

(continued)



# BERRIES, VINES AND HOPS (continued)

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
RASPBERRY	Leaf and Cane Spot, Purple Blotch, Anthracnose, Yellow Rust, Pseudomonas Blight	1.75	33.3	7	<p>Apply as a delayed dormant spray after training in the spring. Make a fall application after harvest. The addition of crop oil may improve performance.</p> <p>Apply when leaf buds begin to open and repeat when flower buds show white. Continue applications at 7-day intervals if needed. The addition of crop oil may improve performance.</p> <p><b>NOTE:</b> Crop injury may occur if applied to foliage under certain conditions such as hot or prolonged moist periods. Discontinue applications if signs of crop injury appear.</p>
	Leaf and Cane Spot, Purple Blotch, Anthracnose, Yellow Rust	0.75			
STRAWBERRY	Angular Leaf Spot ( <i>Xanthomonas</i> ), Leaf Blight, Leaf Scorch, Leaf Spot	0.75-1.25	20	7	<p>Begin applications when plants are established and repeat at 7-day intervals throughout the season. Use a minimum spray volume of 20 gallons.</p> <p><b>NOTE:</b> Discontinue applications if signs of phytotoxicity appear.</p>

## FIELD CROPS

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
ALFALFA	Cercospora & Leptosphaerulina Leaf Spots	0.75	3.7	30	Apply 10 to 14 days before each harvest or earlier if disease threatens. <b>NOTE:</b> Spray injury may occur with sensitive varieties such as Lahontan.
CORN (Field, Pop, Sweet and Seed)	Bacterial Stalk Rot	0.5-1.75	14	7	Begin applications when disease first appears. Repeat applications at 7 to 10 day intervals.
PEANUT	Cercospora Leaf Spot	0.75-1.25	15.8	7	Begin spraying 35 to 40 days after planting or when disease symptoms first appear. Continue applications at 7 to 14 day intervals. Flowable sulfur may be added. Reduce spray interval to 7 days during humid weather. Use higher rates when conditions favor disease.
POTATO	Early Blight Late Blight	0.5-1.75	83.3	5	Apply at 5 to 10 day intervals starting when plants are 2 to 6 inches high. Apply the lower rate in those locations where disease is light and the higher rate where disease is severe. Tank mixing this product with other registered potato fungicides will improve disease control under severe disease conditions.

*(continued)*

**FIELD CROPS (continued)**

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
<b>SOYBEAN*</b>	Bacterial Blight Downy Mildew	0.75-1.5	15.8	7	For protective sprays: Begin applications when plants are 6 inches high and repeat at 7 to 14 day intervals if needed depending on weather conditions. Use the higher rates when disease pressure is high.  *Not registered for use in California
<b>SUGAR BEET</b>	Cercospora Leaf Spot	0.75-2.0	26.2	10	Start spraying when disease threatens. Spray every 10 to 14 days depending on weather conditions and disease severity. Addition of a spreader/sticker is recommended.
<b>WHEAT BARLEY OATS</b>	Fusarium Head Blight Suppression * Helminthosporium Spot Blotch Powdery Mildew Suppression Stagonospora Leaf and Glume Blotch Stem Rust *	0.5-0.75	3.5	10	Make applications for early disease control through heading and repeat as necessary. Use the higher rates when conditions favor disease development. Use of an adjuvant is recommended.  *Not registered for use in California

## TREE CROPS

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
<b>ALMOND, APRICOT, CHERRY, PLUM, PRUNE</b>	Coryneum Blight (Shot Hole), Bacterial Canker, Bacterial Blast ( <i>Pseudomonas</i> )	3.5-7.0	60	7	Apply before fall rains and again at late dormant before foliage buds swell. The addition of an agricultural-type spray oil may improve performance. For <b>CHERRIES</b> : Where disease is severe, an additional application at leaf fall may be required. <b>ALMOND ONLY</b> : For Bacterial Blast control in sprinkler irrigated orchards or where disease is severe, apply 0.5 pounds per acre post-bloom at 2 week intervals or just prior to sprinkling. <b>NOTE</b> : NePlus, Peerless, and Mission varieties of almonds are susceptible to injury from post bloom foliar applications.
	Coryneum Blight (Shot Hole), Blossom Brown Rot	2.5-3.5 (Almonds) 3.5-5.0 (All Others)		5	Make early bloom (popcorn) application prior to full bloom. Do not apply after full bloom due to the potential occurrence of injury. Use the higher rates when rainfall is heavy and disease pressure is high.

(continued)

## TREE CROPS (continued)

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
ALMOND, APRICOT, CHERRY, PLUM, PRUNE (continued)	Black Knot (Plum)	1.75-3.5	60	5	Make application at bud swell up to early bloom for early season disease suppression. Use the higher rate when rainfall is heavy and disease pressure is high. <b>NOTE:</b> Do not apply after full bloom due to the potential for crop injury.
	Cherry Leaf Spot (Sour Cherries Only)	2.25-3.5		5	Make first application at petal fall. Make 1 to 2 additional applications after petal fall, if needed. Do not use on sweet cherries or to the English Morello variety as severe injury will occur. The addition of 1 to 3 pounds of hydrated lime per pound of this product may reduce crop injury. <b>NOTE:</b> Post bloom applications have the potential to cause moderate to severe injury in the form of leaf spotting and defoliation.
APPLE	Anthracnose, Blossom Blast, European Canker ( <i>Nectria</i> ), Shoot Blast ( <i>Pseudomonas</i> )	5.25-7.0	53.3	--	Make one application before fall rains. <b>NOTE:</b> Due to the potential for discoloration on yellow varieties, pick before spraying.

(continued)

## TREE CROPS (continued)

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
APPLE (continued)	Fire Blight, Apple Scab	3.5-7.0	53.3	--	Make one application as a full cover spray between silver-tip and green-tip for early season disease suppression. <b>NOTE:</b> Discontinue use when green-tip reaches ½ inch as late applications could lead to moderate or severe crop injury.
	Apple Scab	0.75-1.75		5	Extended Spray Schedule: Apply at 5 to 7 day intervals or as needed between green tip (1/2 inch) and first cover spray when fruit finish is not a concern. <b>NOTE:</b> The extended spray schedule applications may cause moderate to severe crop injury. These applications are not intended for fruit going to fresh market due to the potential for fruit russetting. Adding 1 to 3 pounds of hydrated lime per pound of this product may reduce crop injury.
	Fire Blight	0.5-0.75			
	Crown Rot, Collar Rot	1.75 (in 100 gallons of water)		--	Apply 4 gallons of suspension as a drench on the lower trunk area of each tree. Make one application either in early spring or in fall after harvest each year. Do not apply to foliage or fruit. <b>NOTE:</b> Do not use if soil pH is below 5.5 as copper toxicity may result.

(continued)

## TREE CROPS (continued)

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
AVOCADO	Anthraco-nose, Blotch, Scab	3.5-5.25	63	14	Apply when bloom buds begin to swell. Continue applications at 14- to 30-day intervals if needed. Use the higher rate when conditions favor disease development.
CITRUS	Melanose, Scab, Algal Spot	1.75-5.0	42	7	Apply as a pre-bloom and post-bloom spray using the higher rates when conditions favor disease development.
	Greasy Spot, Pink Pitting	0.75-2.5			Make summer applications on new growth/flush. Repeat applications to new growth/flush when disease pressure is severe. Apply using higher rates when conditions favor disease development.
	Alternaria Brown Spot	1.75-3.5			Make applications to susceptible varieties when the first spring flush appears and each new flush afterwards. Start applications to fruit after 2/3 of the petals have fallen. Repeat on a 7- to 21-day spray schedule or as needed.
	Phytophthora Brown Rot, Septoria Spot	1.75-3.5			Begin applications in fall before or just after the first rain and continue as needed. <b>BROWN ROT ONLY:</b> Apply to skirts of trees to a height of at least 4 feet. <b>SEPTORIA SPOT/ALREADY BROWN ROT INFECTED FRUIT:</b> Apply to entire tree. Apply also to bare ground one foot beyond skirt. <b>NOTE:</b> California: Add 1/3 to 1 pound of high quality lime per pound of product in areas subject to copper injury.

(continued)

## TREE CROPS (continued)

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
CITRUS (continued)	Phytophthora Foot Rot	0.5 (in 1 quart of water, Tre-Hold, or latex paint)	42	7	Paint trunks of trees from the soil surface to the lowest scaffold limbs. Apply in May prior to summer rains and/or in the fall prior to wrapping trees for freeze protection. Treatment protects trees for up to 1 year but does not cure trees already infected.  <b>NOTE:</b> Due to wash off, retreatment may be needed in areas where microjet or low volume irrigation hit the tree trunk.
	Citrus Canker (Suppression)	1.0-2.5			Apply to fresh flushes 7 to 14 days after shoots begin to grow. Make an additional application to young fruit if needed. The number and timing of applications is dependent on disease severity. Make applications to each flush of new growth when disease pressure is severe.
	Black Spot*	1.0-3.0			Begin applications prior to or when disease symptoms first appear and repeat at 7- to 21-day intervals if needed. Use the higher rates and shorter spray intervals when conditions favor disease development.
	<b>NOTES:</b> This product has the potential for being phytotoxic to young tender flush when it is applied to citrus seedlings grown in greenhouses or shadehouses.  The addition of foliar nutritionals (micronutrients) or other products to spray mixtures containing this product and applied to citrus during the post bloom period when young fruit are present may result in spray burns.  * Not registered for use in California.				



**TREE CROPS (continued)**

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
<b>CITRUS</b> (Field Nursery Grown)	Melanose, Scab, Pink Pitting, Greasy Spot, Brown Rot, Citrus Canker (Suppression)	1.75-3.5	42	7	Make applications at 28-day intervals or as needed depending on disease pressure.
<b>FILBERT</b> (Washington & Oregon only)	Bacterial Blight	7.0-10.5	60	14	Apply as a postharvest spray. In seasons of heavy rainfall, apply another spray when three-fourths of the leaves have dropped. The addition of superior type oil may improve performance.
	Eastern Filbert Blight				Apply as a dilute spray in sufficient water to obtain thorough coverage. Make initial application at bud swell to bud break. Make additional sprays at 14 day intervals if needed until early May. Thorough coverage is essential. The addition of superior type oil may improve performance.
<b>MACADAMIA</b>	Anthracnose	2.5-4.0	31.5	7	Begin applications at first sign of flowering and repeat at 7-day intervals until just before harvest. Apply in sufficient water for thorough coverage.
	Phytophthora Blight ( <i>P. capsici</i> ), Raceme Blight	1.25-2.4			Make applications during raceme development and bloom periods. Apply in sufficient water for thorough coverage.
<b>OLIVE</b>	Peacock Spot, Olive Knot	3.5-7.0	60	30	Make first application before winter rains start. Make a second application in early spring if disease pressure is severe.

## TREE CROPS (continued)

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
PEACH, NECTARINE	Leaf Curl, Coryneum Blight (Shot Hole), Bacterial Canker, Bacterial Blast ( <i>Pseudomonas</i> ), Bacterial Spot ( <i>Xanthomonas</i> )	3.5-7.0	60	7	Make first application before fall rains and the second application at late dormant. <u>For Leaf Curl:</u> Make late dormant application before leaf buds swell. The addition of an agricultural spray oil may improve performance.
	Blossom Brown Rot, Leaf Curl, Coryneum Blight (Shot Hole)	3.5-5.0		5	Apply as a full cover spray at pink bud.
	Bacterial Spot	0.25-0.5		5	Apply as a post bloom cover spray. Repeat applications if needed. Do not exceed 6 applications. <b>NOTE: Cover spray applications may cause leaf spotting and defoliation. Discontinue use if injury occurs.</b>
PEAR	Fire Blight	0.5	53.3	5	Apply at 5 day intervals throughout bloom period. <b>NOTE:</b> Russetting may occur on copper sensitive varieties or on any variety if excessive rates are used.
	<i>Pseudomonas</i> Blossom Blast	5.25-7.0		- -	Apply before spring growth starts. Make one application per season.
PECAN	Shuck and Kernel Rot ( <i>Phytophthora cactorum</i> ), Zonate Leaf Spot ( <i>Cristulariella pyramidalis</i> )	0.75-1.75	21	14	<b>Suppression Only:</b> Make first application when kernel growth begins and repeat at 2 to 4 week intervals through shuck opening. Apply in sufficient water to ensure thorough coverage.

## TREE CROPS (continued)

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
<b>PECAN (continued)</b>	Ball Moss, Spanish Moss	2.5-3.5 (in 100 gallons of water)	21	14	Apply in the spring when moss is actively growing. Use 1½ gallons of spray per foot of tree height. Wet moss tufts thoroughly. The addition of a non-ionic surfactant may improve control. Make a second application 12 months later if needed.
<b>PISTACHIO</b>	Botrytis Blight, Botryosphaeria Panicle and Shoot Blight, Septoria Leaf Blight, Late Blight ( <i>Alternaria alternata</i> )	1.75-3.5	28	14	Apply beginning at bud swell. Repeat at 14 to 28 day intervals depending on disease conditions. If disease pressure is severe, use the high rate and the short spray interval.
<b>QUINCE</b>	Fire Blight	0.5	53.3	5	Apply throughout the bloom period. Use sufficient water volume to provide thorough coverage.
<b>WALNUT</b>	Walnut Blight	3.5-7.0	107	7	Begin applications at early pre-bloom prior to or when catkins are partially expanded. Make additional applications during bloom and early nutlet stage as needed. Additional applications may be necessary during extended periods of high humidity or frequent rainfalls. Thorough coverage of catkins, leaves, and nutlets is essential for effective control.  <b>NOTE:</b> When applied as a dilute spray, 1 pint of Summer oil emulsion may be added per 100 gallons of spray. Adequate control may not be obtained when copper tolerant species of <i>Xanthomonas</i> bacteria are present.

## TROPICAL CROPS

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
<b>BANANA PLANTAIN</b>	Sigatoka (Black & Yellow)	0.75	63	7	Apply at 7 to 14 day intervals if needed.
	Black Pitting	1.75 (in 100 gallons of water)			Apply directly to the fruit stem and include the basal portion of the leaf crown. Apply during the first and second weeks after fruit emergence.
<b>CACAO</b>	Black Pod	0.75-3.75	52.5	14	Begin applications at the start of the rainy season and continue while infection conditions persist. Spray at 14 to 21 day intervals depending on disease severity. For drier areas, make 2 to 4 applications of 2.5 to 3.75 pounds/acre during critical infection periods. Adjust rate according to disease pressure and planting density.
<b>COFFEE</b>	Coffee Berry Disease ( <i>Collectotrichum coffeanum</i> )	2.5-3.5	42	14	Apply first spray after flowering and before onset of long rains and then at 14 to 28 day intervals until picking. Use the higher rates when rainfall is heavy and disease pressure is high.
	Bacterial Blight ( <i>Pseudomonas syringae</i> )	2.5-3.5			Begin spray program before onset of the long rains and continue throughout the rainy season at 14 to 21 day intervals. The critical application period to control this disease is just before, during, and after flowering(s), especially when coinciding with wet weather. Use the higher rates when rainfall is heavy and disease pressure is high.

(continued)

**TROPICAL CROPS (continued)**

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
<b>COFFEE</b> (continued)	Leaf Rust ( <i>Hemileia vastatrix</i> )	0.75-1.75	42	14	Apply before the onset of rain and then at 14 to 21 day intervals while the rains continue. Use the higher rates when rainfall is heavy and disease pressure is high.
	Iron Spot ( <i>Cercospora coffeicola</i> ) Pink Disease ( <i>Corticium salmonicolor</i> )	0.75			Begin treatment at the start of wet season and continue at monthly intervals for 3 applications. Apply as a concentrate or dilute spray.
<b>GUAVA</b>	Anthracnose, Red Algae	1.25-2.0	16.4	7	Apply beginning just prior to flowering and repeat at 7-day intervals until just prior to harvest. Use sufficient water for thorough coverage.
<b>LITCHI</b>	Anthracnose	1.25-2.0	16.4	7	Apply beginning just prior to flowering and repeat at 7-day intervals until just prior to harvest. Use sufficient water for thorough coverage.
<b>MAMEY SAPOTE</b>	Anthracnose, Algal Leaf Spot	2.5-3.5	28	14	Apply when conditions favor disease development. Repeat at 14 to 30 day intervals as needed.
<b>MANGO</b>	Anthracnose	2.0-6.0	160	7	Begin applications after fruit set and continue at 7-day intervals until harvest.

(continued)

**TROPICAL CROPS (continued)**

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
PAPAYA	Anthrachnose	1.75-4.25	70.7	7	Begin applications before disease symptoms appear. Repeat at 10 to 14 day intervals under light disease pressure or at 7 day intervals during periods of heavy rainfall and severe disease pressure. The addition of a spreader-sticker may improve control during periods of heavy rains.
PASSION FRUIT	Anthrachnose	2.5-4.0	31.5	7	Begin applications just prior to flowering and repeat weekly. Use sufficient water for thorough coverage.
SUGAR APPLE (Annona)	Anthrachnose	5.25-7.75	42	7	Begin applications just prior to flowering and repeat weekly. Use sufficient water for thorough coverage.

## VEGETABLE CROPS

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
<b>BEAN (Dry, Green)</b>	Brown Spot, Bacterial Blight (Halo & Common), Downy Mildew *	0.5-1.25	15.8	7	For protective sprays, make the first application when plants are 6 inches high and continue at 7 to 14 day intervals depending on local conditions. Adjust rates depending on disease pressure. * Not registered for use in California
<b>BEET</b> (Table Beet and Beet Greens)	Cercospora Leaf Spot	0.75-2.0	26.2	10	Apply when conditions first favor disease development. Repeat treatment at 10 to 14 day intervals if needed.
<b>CARROT</b>	Alternaria Leaf Blight, Cercospora Leaf Blight	0.75-1.5	16.7	7	When disease threatens apply at 7 to 14 day intervals if needed depending on disease severity.
<b>CELERY, CELERIAC</b>	Cercospora Early Blight, Septoria Late Blight, Bacterial Blight	0.75-1.5	17.7	7	Apply as soon as plants are first established in the field, then every 7 days if needed depending on disease severity and weather.
<b>CRUCIFERS</b> Broccoli, Brussels Sprout, Cabbage, Cauliflower, Chinese Cabbage, Collard Greens, Kale, Kohlrabi, Mustard Greens, Turnip Greens	Black Rot ( <i>Xanthomonas</i> ), Black Leaf Spot ( <i>Alternaria</i> ), Downy Mildew	0.5-0.75	8.8	7	Apply at 7-10 day intervals beginning after transplants are set in the field or shortly after emergence of field seeded crop. Use the higher rate when conditions favor disease development. <b>NOTE:</b> Reddening of older leaves may occur on broccoli at the higher rate and flecking of wrapper leaves may occur on cabbage.

## VEGETABLE CROPS (continued)

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
<b>CUCURBITS</b> Cantaloupe, Casaba, Chayote, Cucumber, Gourd, Honeydew, Muskmelon, Pumpkin, Squash, Watermelon	Alternaria Leaf Spot, Angular Leaf Spot, Anthracnose, Downy Mildew, Powdery Mildew, Gummy Stem Blight, Watermelon Bacterial Fruit Blotch (Suppression)	0.5-1.25	17.5	5	Begin treatments before disease symptoms appear and repeat at 5 to 7 day intervals if conditions are favorable for disease development.  <b>NOTE:</b> Crop injury may occur from application at shorter intervals or higher rates. Discontinue use if injury occurs.
<b>EGGPLANT</b>	Alternaria Blight, Anthracnose, Phomopsis	0.75-1.5	26.3	7	Treat before disease appears. Repeat applications at 7 to 10 day intervals as needed depending on disease pressure.
<b>ENDIVE ESCAROLE</b>	Downy Mildew	0.75-1.5	26.6	5	Begin treatment at first appearance of disease or when conditions favor disease development. Repeat every 5 to 10 days as needed.  <b>NOTE:</b> Before application, determine if there is varietal sensitivity to copper. Injury may occur to sensitive varieties or under adverse weather conditions. Discontinue use if injury occurs.

(continued)



## VEGETABLE CROPS (continued)

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
LETTUCE*	Downy Mildew	0.75-1.5	26.6	5	Begin treatment at first appearance of disease or when conditions favor disease development. Repeat every 5 to 10 days as needed.  <b>NOTE:</b> Before using on lettuce, determine if there is varietal sensitivity to copper. Injury may occur to sensitive lettuce varieties or under adverse weather conditions. Discontinue use if injury occurs.  *Not registered for use in California and Arizona
OKRA	Anthrachnose, Bacterial Leaf Spot, Leaf Spots, Pod Spot, Powdery Mildew	0.75-1.75	17.5	5	Begin applications when disease threatens. Continue applications at 5 to 10 day intervals depending on disease severity.
ONION GARLIC LEEK	Purple Blotch, Downy Mildew, Bacterial Blight	0.75-1.5	20	7	Apply when plants are 4 to 6 inches high and repeat at 7 to 10 day intervals if needed. This product can be phytotoxic to leaves.
PEA	Powdery Mildew	0.5-1.25	13.2	7	Begin spray treatment when disease symptoms first appear. Adjust rates according to disease severity. Repeat applications at weekly intervals.
PEPPER	Anthrachnose, Bacterial Spot, Cercospora Leaf Spot	0.75-1.25	39.5	3	Begin spray treatment when conditions favor disease development. Repeat applications at 3 to 10 day intervals as needed depending on disease severity.

(continued)

**VEGETABLE CROPS (continued)**

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
<b>SPINACH</b>	Anthrachnose, Cercospora Leaf Spot, Downy Mildew*, White Rust, Blue Mold	0.75-1.25	13.2	7	Begin treatment when conditions favor disease development. Repeat applications every 7 to 10 days as needed.  <b>NOTE:</b> Flecking may occur on spinach leaves. * Not registered for use in California
<b>TOMATO</b> (for processing)	Early Blight, Late Blight Bacterial Speck, Bacterial Spot, Anthrachnose, Gray Leaf Mold, Septoria Leaf Spot	0.75-1.75	58	3	Begin treatment when disease threatens and repeat applications at 3 to 10 day intervals if needed depending on disease pressure. Use the higher rate when conditions favor disease development.
<b>TOMATO</b> (for fresh market)			26.7		
<b>WATERCRESS</b>	Cercospora Leaf Spot	0.75-1.5	7.1	7	Apply when plants are first established in the field. Make ground applications in a minimum spray volume of 50 gallons per acre. Repeat applications at 7 to 14 day intervals as needed. Make up to four applications per crop.  For applications made to watercress, production fields must be drained of water at least 24 hours prior to each application and water must not be reapplied to the field for a minimum of 24 hours following each application.  Copper must not to be applied to watercress during the aquatic production phase.

## MISCELLANEOUS

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
<b>ATEMOYA</b>	Anthraco nose	1.25-2.0	42	7	Apply just prior to flowering and repeat weekly until just prior to harvest. Use sufficient water for thorough coverage.
<b>CARAMBOLA</b>	Anthraco nose	2.5-3.5	35	7	Apply just prior to flowering and repeat weekly until just prior to harvest. Use sufficient water for thorough coverage.
<b>CHIVES</b>	Downy Mildew	0.75-1.5	8.8	7	Apply when plants are established in the field. Repeat at 7 to 10 day intervals as needed.
<b>DILL</b>	Phoma Leaf Spot, Rhizoctonia Foliage Blight	0.75-1.25	13.2	7	Apply when plants are established in the field. Repeat at 7 to 10 day intervals as needed.
<b>GINSENG</b>	Alternaria Leaf Blight, Alternaria Stem Blight	1.0-1.75	17.5	7	<p>Apply as a tank mix with an iprodione-containing fungicide at the rate of 1 lb iprodione a.i./Acre. Use a spray volume of 100 gallons per acre. Begin applications as soon as plants have emerged in the spring and repeat as needed until plants become dormant in the fall. Apply at least 8 hours before rainfall. The use of a spreader-sticker is recommended.</p> <p><b>NOTE:</b> <i>Alternaria Leaf &amp; Stem Blight</i> is most severe in humid conditions such as those found in the dense canopies of 2 to 4 year old ginseng. Complete and thorough spray coverage is required for control.</p>

**MISCELLANEOUS (continued)**

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
<b>PARSLEY</b>	Bacterial Blight ( <i>Pseudomonas</i> spp.)	1.25-2.0	6.7	10	Apply when plants are first established in the field and repeat at 10 day intervals.
<b>PERSIMMON</b>	Cercospora Leaf Spot	0.75	20	14	Apply beginning in May/June, during leaf flush, and repeat at 14 day intervals throughout the season depending on disease severity.
<b>LIVE OAK *</b>	Ball Moss, Spanish Moss	2.5-3.5	66.7	- -	<p>Apply in the spring when moss is actively growing. Use a spray volume of 100 gallons and apply 1-1/2 gallons of spray per foot of tree height. Make sure to wet tufts thoroughly. The addition of a non-ionic surfactant may improve control. Make a second application after 12 months if needed.</p> <p><b>NOTE:</b> This product may be injurious to ornamentals grown under live oaks.</p> <p>* Not registered for use in California</p>
<b>PHILODENDRON*</b>	Bacterial Leaf Spot	0.75	66.7	7	<p>Apply in a spray volume of 100 gallons before disease appears. Repeat applications weekly if needed.</p> <p>*Not registered for use by California</p>
<b>SYCAMORE</b>	Anthrachnose	0.75-1.25	66.7	7	Apply as a full cover spray. Use a spray volume of 100 gallons or sufficient water to obtain thorough coverage. Make the first application at bud crack and second application 7 to 10 days later at 10% leaf expansion.

## CONIFERS

(Christmas Tree Plantings, Forest Stands, and Silviculture Nurseries)

CROP	DISEASE	RATE / ACRE (LBS OF PRODUCT)		Minimum Retreatment Interval (days)	USE INSTRUCTIONS
		Per Application	Maximum Annual		
DOUGLAS FIR ( <i>Pseudotsuga menziesii</i> )	Rhabdocline Needlecast	0.75-1.75	66.7	7	Begin applications in the spring at the initiation of new growth and repeat at 1 to 4 week intervals or as needed depending on disease pressure.
FIR ( <i>Abies</i> spp.), PINE ( <i>Pinus</i> spp.), SPRUCE ( <i>Picea</i> spp.)	Needlecasts				
JUNIPER ( <i>Juniperus</i> spp.)	Anthracnose, Phomopsis Twig Dieback				
LEYLAND CYPRESS ( <i>X Cupressocyparis leylandii</i> )					
	Cercospora Needle Blight				

**To control lichens** on any of the conifers above, apply 3.5 lb of product per acre as a dormant spray before new growth emerges in the spring. The addition of a non-ionic surfactant may improve control. Make a second application 12 months later if needed.

**NOTE:** Do not buffer or combine with emulsifiable concentrate (EC) insecticides.

## GREENHOUSE AND SHADEHOUSE CROPS

This product may be used in greenhouses and shadehouses to control diseases on crops listed on this label. Specific directions are provided below for certain crops and the grower should be aware that the sensitivity of crops grown under such conditions differs greatly from crops grown under field conditions. The sensitivity of all varieties of greenhouse/shadehouse crops to this product has not been determined. The user must determine if this product can be used safely prior to commercial application by testing a small area and observing the results for 7 to 10 days.

Begin application at first sign of disease and repeat as instructed in the table below if needed. Apply in sufficient water to obtain thorough coverage.

CROP	DISEASE	PRODUCT RATE / 1000 ft <sup>2</sup>		USE INSTRUCTIONS
		Per Application (Tablespoons)	Maximum Seasonal (LB)	
<b>CITRUS (Non-Bearing Nursery)</b>	Brown Rot, Citrus Canker, Greasy Spot, Melanose, Pink Pitting, Scab	1.5	0.96	Begin applications when disease first threatens and repeat at 7 to 30-day intervals or as needed depending on disease pressure. <b>NOTE:</b> This product has the potential for being phytotoxic to young tender flush when it is applied to citrus seedlings grown in greenhouses or shadehouses.
<b>CUCUMBER</b>	Angular Leaf Spot, Downy Mildew	0.5-1.5	0.4	Apply at 5 to 7 day intervals when plants begin to vine.
<b>EGGPLANT</b>	Alternaria Blight, Anthracnose, Phomopsis	0.5	0.6	Apply when disease first threatens and repeat at 7 to 10 day intervals as needed.
<b>PEPPER</b>	Bacterial Spot	0.5-1.5	0.9	Apply when conditions first favor disease and at 3 to 10 day intervals as needed.
<b>TOMATO</b>	Anthracnose, Bacterial Speck, Bacterial Spot, Early Blight, Grey Leaf Mold, Late Blight, Septoria Leaf Spot	0.5-1.5	0.6	Apply when conditions first favor disease and at 3 to 10 day intervals as needed.

## ORNAMENTALS\*

**FOR CONTROL OF BACTERIAL<sup>†</sup> AND FUNGAL DISEASES ON FOLIAGE, FLOWERS, AND STEMS OF ORNAMENTALS** grown in Greenhouses, Shadehouses, Fields and Nurseries (container, bench or bed-grown) **and on ornamentals grown in indoor and outdoor landscapes:** apply this product at 0.8 pound per 100 gallons as a full cover spray beginning at first sign of disease. Do not apply more than 800 gallons solution per acre dilute per application depending on the size of the ornamental (equivalent to 2 lb metallic copper per acre). Do not make more than 10 applications at these rates per year (maximum of 20.0 lb metallic copper per acre per year). Note: Compact flowers may take as little as 20 gallons solution per acre while large trees may take as much as 800 gallons solution per acre.

Repeat at intervals of 7 to 14 days (minimum spray interval permitted is 7 days) depending on rainfall and disease severity. Due to the large number of species, widely varying growth conditions, and varieties of ornamentals and nursery plants it is impossible to test every one for sensitivity to this product. The user should apply the recommended rate of this product in a small area and check for any symptoms of phytotoxicity in 7 to 10 days prior to large-scale application.

Do not tank mix with Aliette® fungicide without buffering the spray solution.

1/4 Tablespoon of this product per gallon of water is equivalent to 0.8 pound per 100 gallons.

<sup>†</sup>Non-public health bacteria

\*Not Registered for Use by California

ORNAMENTAL	DISEASE
<b>AGLAONEMA</b>	Bacterial Leaf Spot
<b>ALTHEA (Rose of Sharon)</b>	Bacterial Leaf Spot
<b>ARALIA</b>	Xanthomonas & Cercospora Leaf Spots, Alternaria
<b>ARBORVITAE</b>	Alternaria Twig Blight, Cercospora Leaf Spot
<b>AZALEA (1)</b>	Cercospora Leaf Spot, Botrytis Blight, Phytophthora Dieback, Powdery Mildew
<b>BEGONIA</b>	Bacterial Leaf Spot ( <i>Xanthomonas</i> spp., <i>Erwinia</i> spp., <i>Pseudomonas</i> spp.)
<b>BOSTON FERN</b>	Bacterial Leaf Spot

(continued)

ORNAMENTAL	DISEASE
BOUGAINVILLEA	Anthrachnose, Bacterial Leaf Spot
BULBS (Easter Lily (2), Tulip)	Botrytis Blight, Anthracnose
CAMELLIA	Anthrachnose, Bacterial Leaf Spot
CAMPHOR TREE	Pseudomonas Leaf Spot
CANNA	Pseudomonas Leaf Spot
CARNATION (1)	Alternaria Blight, Pseudomonas Leaf Spot & Botrytis Blight
CHINESE TALLOW TREE	Bacterial Leaf Spot ( <i>Xanthomonas spp.</i> , <i>Pseudomonas spp.</i> )
CHRYSANTHEMUM (1)	Septoria Leaf Spot, Botrytis Blight
COTONEASTER	Botrytis Blight
DAHLIA	Alternaria Leaf Spot, Cercospora Leaf Spot, Botrytis Grey Mold
DATE PALM	Pestalotia Leaf Spots
DIANTHUS	Bacterial Spot, Bacterial Soft Rot
DOGWOOD	Anthrachnose
DRACAENA	Bacterial Leaf Spot
DUMB CANE	Bacterial Leaf Spot
DUSTY MILLER	Bacterial Leaf Spot ( <i>Pseudomonas cichorii spp.</i> )
ECHINACEA	Botrytis Blight
ELM (Drake)	Xanthomonas Leaf Spot
EUONYMUS	Botrytis Blight, Anthracnose
EUROPEAN FAN PALM	Pestalotia Leaf Spot
GARDENIA	Alternaria Leaf Spot, Cercospora Leaf Spot, Botrytis Bud Rot

(continued)



ORNAMENTAL	DISEASE
GERANIUM	Alternaria Leaf Spot, Cercospora Leaf Spot, Botrytis Grey Mold
GLADIOLUS	Alternaria Leaf Spot, Botrytis Grey Mold, Bacterial Leaf Blight, Botrytis Blight, Anthracnose
GOLDEN RAIN TREE	Alternaria Leaf Spot, Botrytis Grey Mold, Bacterial Leaf Blight
GRAPE IVY	Bacterial Leaf Spot
HIBISCUS (3)	Bacterial Leaf Spot
HOLLY FERN	Pseudomonas Leaf Spot
HONEY LOCUST	Bacterial Leaf Spot
IMPATIENS	Bacterial Leaf Spot
INDIA HAWTHORN (4)	Anthracnose, Entomosporium Leaf Spot
IRIS	Bacterial Leaf Spot
IVY (English, Algerian) (1)	Xanthomonas Leaf Spots
IXORA	Xanthomonas Leaf Spots
JUNIPER (Eastern Red Cedar)	Anthracnose
LANTANA	Bacterial Leaf Spot
LILAC	Cercospora Leaf Spot
LOBLOLLY BAY	Anthracnose
LOQUAT	<i>Entomosporium maculata</i> , <i>Colletotrichum spp.</i>
MAGNOLIA (Southern)	Anthracnose, Bacterial Leaf Spot, Algal Leaf Spot
MAGNOLIA (Sweet Bay)	Anthracnose
MAGNOLIA	Bacterial Leaf Spot

(continued)

ORNAMENTAL	DISEASE
MAN DEVILLAS	Anthravnose
MARIGOLD	Alternaria Leaf Spot, Botrytis Leaf Rot, Flower Rot, Cercospora Leaf Spot
MULBERRY - CONTORTED	Bacterial Leaf Spot
MULBERRY - WEEPING	Bacterial Leaf Spot
NEPHTHYTIS	Bacterial Leaf Spot
OLEANDER	Bacterial Leaf Spot, Fungal Leaf Spot
OAK, LAUREL	Algal Leaf Spot, ( <i>Cephaleuros virescens spp.</i> )
PACHYSANDRA	Volutella Leaf Blight
PANSY	Downy Mildew
PARLOR PALM	Bacterial Leaf Spot
PEAR (flowering)	Fire Blight, Leaf Spot
PENTAS (Egyptian Star)	Bacterial Leaf Spot ( <i>Xanthomonas spp.</i> )
PEONY	Botrytis Blight
PERIWINKLE	Phomopsis Stem Blight
PHLOX	Alternaria Leaf Spot
PHOTINIA (Red Tip, Red Leaf)	Anthravnose, Entomosporium
PISTACHIO	Anthravnose
PLANTAIN LILY	Bacterial Leaf Spot
POTHOS	Bacterial Leaf Spot
POWDER PUFF PLANT	Bacterial Leaf Spot
PURPLE OSIER WILLOW	Anthravnose

(continued)

ORNAMENTAL	DISEASE
<b>PYRACANTHA</b>	Fireblight, Scab
<b>QUEEN PALM</b>	Exosporium Leaf Spot, Phytophthora Bud Rot
<b>RHODODENDRON</b>	Alternaria Flower Spot
<b>ROSE (1)</b>	Powdery Mildew, Black Spots
<b>SNAPDRAGON</b>	Anthrachnose, Dieback, Downy Mildew
<b>SPATHE FLOWER</b>	Bacterial Leaf Spot
<b>TATARIAN HONEYSUCKLE</b>	Bacterial Leaf Spot
<b>UMBRELLA TREE</b>	Bacterial Leaf Spot
<b>VERBENA</b>	Xanthomonas Leaf Spot
<b>VIBURNUM</b>	Anthrachnose
<b>WASHINGTON PALM</b>	Pestalotia Leaf Spot
<b>WEeping FIG</b>	Bacterial Leaf Spot
<b>WEeping WILLOW</b>	Anthrachnose
<b>YUCCA (ADAMS NEEDLE)</b>	Cercospora & Septoria Leaf Spots

- (1) On some varieties a discoloration may occur in foliage or blooms. To prevent residues on commercial plants; Do not spray just before selling season.
- (2) Apply 2-5 to 45 pounds of this product in 20 to 100 gallons of water per acre. The minimum interval between treatments is 7 days.  
Do not apply more than 250 lb product per acre (75 lb metallic copper/A) per year. Do not apply any additional copper pesticide to this land for 36 months.
- (3) Hibiscus – Do not apply to plants in flower.
- (4) For India Hawthorn use 1.75 to 3.5 pounds per 100 gallons or 0.5 to 1 tablespoon per gallon. Apply up to 2.6 lb of product per acre per application (equivalent to 2.0 lb metallic copper per acre). Do not exceed a total of 26 lb of product per year (maximum of 20 lb metallic copper per acre per year).

## STORAGE AND DISPOSAL

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

**STORAGE:** Store in a cool dry place.

**PESTICIDE DISPOSAL:** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest Environmental Protection Agency Regional Office for guidance.

**CONTAINER HANDLING:** Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Offer for recycling, if available or dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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