UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

April 24, 2023

Timothy Joseph
Senior Project Manager
Old Bridge Chemicals, Inc.
c/o Landis International, Inc.
P.O. Box 5126
Valdosta, GA 31603

Subject: Registration Review Label Mitigation for Copper Compounds
Product Name: OLD BRIDGE BASIC COPPER SULFATE
EPA Registration Number: 46923-9
Application Date: February 5, 2019
Decision Number: 591374

Dear Timothy Joseph:

The Agency, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, has completed reviewing all the information submitted with your application to support the Registration Review of the above referenced product in connection with the Copper Compounds Interim Decision, and has concluded that your submission is acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list 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 the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the 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 12 months from the date of this letter. After 12 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.

If you have any questions about this letter, please contact DeMariah Koger by phone at (202)-566-2288, or via email at koger.demariah@epa.gov.

Sincerely,

Linda Arrington, Branch Chief
Risk Management and Implementation Branch 4
Pesticide Re-Evaluation Division
Office of Pesticide Programs

Enclosure

Old Bridge Chemicals, Inc.

BASIC COPPER SULFATE

Net Weight: 50 pounds (22.7 kg) EPA Reg. No. 46923-9 EPA Est. No. 46923-NJ-01

ACTIVE INGREDIENT
Basic Copper Sulfate*: CAS # 1344-73-6 ..... 94.34%
OTHER INGREDIENTS 5.66%
TOTAL 100.00%
* Metallic Copper Equivalent: 53.0%

KEEP OUT OF REACH OF CHILDREN
WARNING/AVISO

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).
ATTENTION: This product contains chemicals known to the State of California to cause cancer and birth defects.

FIRST AID	
If in Eyes:	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If Swallowed:	• Call poison control center or doctor immediately for treatment advice. • Have a person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If on Skin or Clothing:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call the poison control center or doctor for treatment advice.
If Inhaled:	• Move the person to fresh air. • If person is not breathing call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. • Call the poison control center or doctor for further treatment advice.
HOT LINE SERVICE	
Have the product container or label with you when calling a poison control center or doctor, or for going for treatment. You may contact CHEMTREC for emergency medical information: 800-424-9300.	
NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.	

ACCEPTED
Apr 24, 2023
Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 46923-9

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
WARNING/AVISO

Causes substantial but temporary eye injury. Do not get in the eyes or on clothing. Harmful if swallowed. Harmful if absorbed through the skin. Avoid contact with skin. Harmful if inhaled. Avoid breathing dusts or sprays.

PERSONAL PROTECTIVE EQUIPMENT

Mixers, Loaders, Applicators and other handlers must wear the following:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks
- Goggles or face shield

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow 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 CONTROL

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 requirements for PPE may be reduced or modified as specified in the WPS.

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

USER SAFETY RECOMMENDATIONS

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

ENVIRONMENTAL HAZARDS

This product is toxic to fish and aquatic organisms. Unlike most organic pesticides, copper is an element and will not break down in the environment and will therefore accumulate in sediment with repeated applications. Copper is a micronutrient, but its pesticidal application rate exceeds the amount of copper needed as a nutrient. This product has a potential for runoff for several months or more after application. Poorly draining 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, or to areas where the surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water 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 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. The requirements in this box 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 provided the following instructions are followed.

Notify workers of the application by warning them orally and by posting warning signs at entrances to the treated areas. PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that is treated such as plants, soil, or water is:

- Coveralls over long sleeved shirt and pants
- Waterproof gloves
- Chemical resistant footwear plus socks
- Chemical resistant headgear if overhead exposure
- Protective eyewear (goggles)

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 for agricultural pesticides (40 CFR Part 170). The 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.

MANDATORY SPRAY DRIFT MANAGEMENT

For aerial applications:

- Do not release spray at a height greater than 10 feet above the vegetative canopy 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 15mph at the application site. If the windspeed is greater than 10mph, 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.

For ground boom application:

- 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 miles per hour 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 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 aerially 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.

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

RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, Copper Sulfate Fine Crystals contains a Group M1 fungicide. Any fungal population may contain individuals naturally resistant to Copper Sulfate Crystals and other Group M1 fungicides. A gradual or total loss of pest control may occur over time if these fungicides are use repeatedly in the same fields. Appropriate resistance-management strategies should be followed.

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

- Rotate the use of Copper Sulfate Fine Crystals or other Group M1 fungicides within a growing season sequence with different groups that control the same pathogens.
- Use tank mixtures with fungicides from a 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 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 developments, disease thresholds, as well as cultural, biological and other chemical control practices.
- Where possible, make use of predictive disease models to effectively time fungicide applications. Note that using predictive models alone is not sufficient to manage resistance.
- Monitor treated fungal 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.
- For further information or to report suspected resistance contact your pesticide distributor or university extension specialist to report resistance. (Old Bridge Contact Number: 732-727-2225)

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.
Pesticide Storage: Keep in a cool and dry place. Do not store at temperatures below 32°F. Open dumping is prohibited. Do not reuse empty container.
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 EPA Regional Office for guidance.
Container Handling: Non-refillable container. Do not reuse or refill this container. Completely empty liner by shaking and tapping the sides and bottom to loosen clinging particles. Empty residues into

application equipment. Then offer for recycling if available. If not, then dispose of liner in a sanitary landfill or by incineration if permitted by State and local authorities. If burning, stay out of smoke.

CHEMIGATION

Apply this product only through a sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move. 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 nonuniform distribution of treated water.

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

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless pesticide label prescribed safety devices for public water systems are in place.

A person knowledgeable about the chemigation system and responsible for its operation or under the supervision if the responsible person, shall shut the system down and make necessary adjustments should the need arise.

If the product is to be applied via a sprinkler system, 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.

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 regular serves an average of at least 25 individuals daily at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, back flow 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 the pesticide introduction. There shall be a complete physical break (air gap) between the flow 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,

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back towards the injection pump.

The pesticide injection pipeline must also contain a functional, normally close, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock, to prevent fluid from being withdrawn for the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

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.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials compatible with pesticides and capable of being fitted with a system interlock.

Do not apply product when wind speed favors drift beyond the area intended for treatment.

Keep the agitators running in the spray tank until spraying is completed. Apply Basic Copper Sulfate continuously for the duration of the water application. If this is impractical, apply this product at the end of the application cycle. Stop injection equipment after treatment has been completed but continue operating irrigation system until all Basic Copper Sulfate has been cleaned through the most distant sprinkler head for the injection equipment.

Posting of areas to be chemigated is required when 1) any part of a treated area is within 300 feet of sensitive areas such as residential area, labor camps, businesses, day care centers, hospitals, in-patient clinics, nursing homes or any public areas such as schools, parks, playgrounds, or other public facilities not including public

roads, or 2) when the chemigated area is open to the public such as golf courses or retail greenhouses. Posting must conform to the following requirements. Treated areas shall be posted with signs at all usual points of entry and along likely routes of approach from the listed sensitive areas. When there are no usual points of entry, signs must be posted in the corners of the treated areas and in any other location affording maximum visibility to sensitive areas. The printed side of the sign should face away from the treated area towards the sensitive area. The signs shall be printed in English. Signs must be posted prior to application and must remain posted until foliage has dried and soil surface water has disappeared. Signs may remain in place indefinitely as long as they are composed of materials to prevent deterioration and maintain legibility for the duration of the posting period. At the top of the sign shall be the words "KEEP OUT", followed by an octagonal stop sign symbol at least 8 inches in diameter containing the word "STOP". Below the symbol shall be the words "PESTICIDES IN IRRIGATION WATER". All words shall consist of letters at least 2 ½ inches tall, and all letters and the symbol shall be a color that sharply contrasts with their immediate background. This sign is in addition to any sign posted to comply with the Worker Protection Standard.

NOTE: Basic Copper Sulfate may be corrosive to aluminum equipment. Follow directions on the primary label covering the crop to be treated. In no case should the recommended concentrations per acre be exceeded.

USE INSTRUCTIONS

Notice: Follow all instructions carefully. Old Bridge Basic Copper Sulfate is adaptable to spraying from all types of spray equipment. Depending on the equipment used and the specific crop, the volume applied per acre will differ. Timing and methods of application, weather, crop conditions, mixtures with other chemicals not specifically labeled and other influencing factors in the use of this product are beyond the control of the seller. To the extent consistent with applicable law, buyer assumes all risks if use, storage or handling of this material are not in strict accordance with the directions on this label.

Mixing Directions: Fill the spray tank about half full with water and with the agitator running, slowly add the required amount of Basic Copper Sulfate, Add water to fill the tank to ¾ full with the agitator running and when spreader stickers insecticides or nutrients are recommended they should be added according to the manufacturer's recommendations. Fill the spray tank and keep the agitator running until spraying has been completed. Observe the most restrictive of the labeling limitations and precautions of all products used in the mixture.

Note to user: In some cases, it will be desirable to omit oil from the spray mixture or use an alternate product other than dormant flowable oil. Consult the recommendations on the back panel are based on general applications. The recommendations of local Agricultural Experiment Stations should be closely followed as to timing, frequency and number of sprays. Basic Copper Sulfate is intended for use in a range of spray volumes. If it is desirable to use spray volumes other than dilute in situations not specifically addressed on this label do so only after developing direct knowledge prior to utilization or test of effect on target crop. Basic Copper Sulfate should not be applied in a spray solution having a pH of less than 6.5 to minimize phytotoxicity risk. Sprays containing Basic Copper Sulfate may be harmful to masonry and metal surfaces such as galvanized roofing. Avoid contact with metal surfaces such as cars, houses, lawn furniture.

Minimum Recommended Spray Volume (Gallons) per Acre when Applying Basic Copper Sulfate:

	AERIAL	**GROUND**	
		Dilute	**Concentrate**
Row Crops	5	20	-
Vines	5	100	50

Tree Crops	10	400	50
Citrus	10	400	100

SPECIFIC INSTRUCTIONS

NOTE: The rates provided in the following chart are all calculated in pounds of Basic Copper Sulfate

CROP	Application Rate (lbs/A) (lbs Cu^{2+}/A)	Maximum Annual Rate (lbs/A) (lbs Cu^{2+}/A)	Minimum Retreatment Interval	Comment
FRUITS & NUTS				
Almonds	Dormant, Late Dormant: 3.8-15.1 (2.01-8.0)	34.0 (18.0)	7 days	Bacterial Blast, Bacterial Canker, Shot Hole: Make the first application before fall rains and a second at late dormant. Use higher rates when rain fall is heavy and disease pressure is high. One pint of superior-type oil per 100 gallons of water may be added. Do not apply after 50% bloom or when trees are in leaf. Bacterial Blast: In sprinkler irrigated orchards or where disease is severe, apply at 2-week intervals or just before irrigation.
	Bloom, Growing Season: 1-2.83 (0.53-1.5)		5 days	
Pome Fruit: Apple, Pear, Quince	Fall, Late Dormant: 11.3 (6.0)	30.2 (16.0)	Only 1 application per season permitted	Quince use not permitted in California Anthracnose: Apply after harvest before rains. Brooks Spot, Black Rot, Black Pox, Powdery Mildew, Sooty Blotch, Flyspeck, Summer Scab, and White Rot: Recommended for processing apples only as fruit russeting and leaf spotting are likely to occur. Fire Blight: Make application between silver-tip and green-tip. **Note:** Phytotoxicity may occur from late application. **Pears-** Fire Blight: Apply at 5-day intervals throughout bloom period. **NOTE**: Do not apply to d'Anjou pears. Excessive dosages may cause fruit russet.
	Between Silver-Tip and Green Tip: 11.3 (6.0)		Only 1 application per season permitted	
	Bloom, Growing Season: 1-2.83 (0.53-1.5)		5 days	
Avocados	3.0-5.94 (1.59-3.15)	35.7 (18.9)	14 days	Anthracnose, Blotch, Scab: Spray first when in blossom buds open. Make applications at 2 to 4 intervals. Use higher rates when conditions favor disease development. Lime- 30 to 40 lbs per acre.
Brambles: Blackberries Boysenberries Dewberries Loganberries Raspberries, etc.	0.9-3.77 (0.48)	18.9 (10.0)	7 days	Anthracnose, Cane Spot, Leaf Spot Blight, Purple Blotch, Yellow Rust: Make fall application after harvest. Apply delayed dormant spray after training in the spring. **NOTE:** Crop injury may occur under certain environmental conditions such as hot or prolonged moist conditions. If noticed, discontinue applications.

CROP	Application Rate (lbs/A) (lbs Cu^{2+}/A)	Maximum Annual Rate (lbs/A) (lbs Cu^{2+}/A)	Minimum Retreatment Interval	Comment
Citrus	1.0-5.94 (0.53-3.15)	23.8 (12.6)	7 days	Brown Rot, Alternaria, Scab, Pink Pitting, Greasy Spot, Melanose: Apply as pre-bloom and post-bloom sprays. May be used in dilute or concentrate sprays at equivalent rates. For concentrate applications use a minimum of 10 gallons per acre. California- use a minimum of 4 pounds of product per acre. For Scab suppressions make two applications, one just before trees begin to flush and repeat at 2/3 petal fall. Wettable Sulfur may be included in the spray. For Greasy Spot and Pink Pitting: make summer spray. Melanose: make application 1-3 weeks after petal fall and repeat 14 days later if necessary. **NOTE:** Do not use in areas where copper injury is known to occur.
Cranberries	2.0-3.96 (1.06-2.1)	23.8 (12.6)	7 days	Bacterial Canker: Make first application in late bloom. Make one or two additional applications at 10 to 14 days intervals depending on disease severity. Rose Bloom: Apply 3 sprays on a 10-14-day schedule as soon as symptoms are observed. Bacterial Stem Canker: Apply post-harvest and again in spring before bud burst. Make one or two additional applications at 10-14-day intervals depending on disease severity. Leaf Blight, Red Leaf Spot, Stem Blight, Tip Blight: Apply delayed dormant spray in spring and repeat at 10-14 -day intervals as needed through pre-bloom.
Currants	3.75-7.55 (1.99-4.0)	30.2 (16.0)	10 days	Anthracnose, Leaf Spot: Make applications starting after harvest, before bloom and after petal fall. Repeat on 10-14-day intervals during wet conditions in the spring. Make an additional application after harvest.
Filberts (Only permitted in WA or OR)	3.75-11.3 (1.99-5.99)	45.3 (24.0)	14 days	Bacterial Blight: Apply as post -harvest spray. If heavy rainfall, apply a second spray when 75% of the leaves have dropped. Apply higher rates when rainfall is heavy and disease pressure is high. Add one pint superior-type oil per 100 gallons of water. Easter Filbert Blight: Apply as a dilute spray for thorough coverage. Make initial spray after harvest in October before winter rains. Next application in February to early March and again in April. If desired, add 1 pint of a sticking agent or superior-type oil per 100 gallons of water. Se higher rates when rainfall is heavy and disease pressure is high.
Gooseberries	3.75-7.55 (1.99-4.0)	30.2 (16.0)	10 days	Leaf Spot: Apply at full bloom two weeks later and after harvest.
Grapes	0.25-5.66 (0.13-3.0)	37.7 (19.98)	3 days	Black Rot, Downey Mildew, Phomopsis, Powdery Mildew: Apply at late dormant to bud break. Repeat depending on disease severity. **NOTE:** Foliage injury may occur on Concord Delaware, Niagara and Rosetta.

CROP	Application Rate (lbs/A) (lbs Cu^{2+}/A)	Maximum Annual Rate (lbs/A) (lbs Cu^{2+}/A)	Minimum Retreatment Interval	Comment
Mango	2.4-6.0 (1.27-3.18)	90.6 (48.0)	7 days	Anthracnose: Begin sprays when panicles are about 2 inches long. One gallon of spreader per 100 gallons of spray may increase effectiveness. Consult the Extension Service for local recommendations.
Olives	3.76-11.3 (1.99-5.99)	34.0 (18.02)	30 days	Peacock Spot, Olive Knot: Apply post-harvest before winter rains. A second application in early spring should be made if disease is severe. Apply at the high rate if heavy disease pressure or when conditions favor disease development.
Peanuts	0.5-1.49 (0.27-0.79)	8.94 (4.74)	7 days	Cercospora, Leaf Spot: Begin spraying 35-40 days after planting or when disease symptoms first appear. Use sufficient water for adequate coverage. Continue applications at 10-14-day intervals. Reduce interval to 7 days when weather is humid
Pecans	1.0-3.96 (0.53-2.10)	11.89 (6.3)	14 days	Shuck and Kernel Rot: Apply in sufficient water for good coverage at 2-4-week intervals staring at kernel growth and continue until shucks open. Zonate Leaf Spot: Use higher rate and shorter intervals if frequent rainfall.
Stone Fruit: Apricot, Cherry, Nectarine, Peach, Plum, Prune	Dormant, Late Dormant: 3.75-15.1 (1.99-8.0)	34.0 (18.02)	7 days	**Apricots**: Blossom Blight, Shot Hole: Apply as a dormant spray. Use higher rate when rainfall is heavy or when disease pressure is high. **Cherry**: Dead Bud, Coryneum Blight: Where disease is severe a second spray should be applied shortly after harvest. **Peaches & Nectarines**: Bacterial Blast, Bacterial Canker, Bacterial Spot, Leaf-Curl, Shot-Hole: Make dormant application after leaf drop and/or prior to bud swell. Can be used with superior type oils. **Plums and Prunes**: Shot Hole: Apply as a dormant spray. Use higher rate when rainfall is heavy and/or disease pressure is high.
	Bloom, Growing Season: 1.0-2.83 (0.53-1.50)		5 days	**Apricots:** Blossom Brown Rot, Shot Hole: Apply at popcorn to full bloom spray as a full cover spray. Do not apply after bloom to avoid crop injury. **Cherry:** Brown Rot: Apply at popcorn and full bloom. **Peaches & Nectarines**: Brown Rot, Blossum Blight: Apply as a full cover spray at pink bud. **NOTE:** Do not apply later than 3 weeks prior to harvest. **Plum and Prunes**: Brown Rot, Blossum Blight: Apply full cover application at pink, red or early white bud stage. Do not spray after trees are in leaf as injury may occur. Use higher rate when disease pressure is heavy, or conditions favor disease development.
Strawberries	1.88-2.83 (1.0-1.50)	11.3 (6.0)	7 days	Leaf Spot, Leaf Blight, Downey Mildew: Apply when plants are established and continue weekly throughout the season. **NOTE:** Discontinue if phytotoxicity occurs.

CROP	Application Rate (lbs/A) (lbs Cu^{2+}/A)	Maximum Annual Rate (lbs/A) (lbs Cu^{2+}/A)	Minimum Retreatment Interval	Comment
Walnuts	2.5-7.55 (1.33-4.0)	60.4 (32.0)	7 days	Blight: Apply first spray at early pre-bloom prior to or when catkins are partially expanded. Additional applications at 7-10-day intervals during bloom and early nutlet stage. Thorough coverage of catkins, leaves, and nutlets is essential for effective control. When applied as a dilute spray, one pint if summer oil may be added per 100 gallons of water.
VEGETABLES				
Beans	0.5-1.49 (0.27-0.79)	8.94 (4.74)	7 days	Angular Leaf Spot, Brown Spot, Bacterial Blight, Downey Mildew: Begin treatment when plants are about 6 inches tall and repeat at 7-14-day intervals depending on environmental conditions. Use highest rates when conditions favor disease development.
Beets	2.47 (1.31)	14.8 (7.84)	10 days	Downey Mildew, Leaf Blight, Leaf Spot: Apply when disease first appears and repeat every 10 days.
Broccoli, Brussel Sprouts, Cabbage, Cauliflower	0.25-1.0 (0.13-0.53)	5.0 (2.65)	7 days	Downey Mildew: Apply at minimum of 25 gallons of water per acre at 7-10-day intervals. Alternaria, Black Rot: Begin applications after transplants are set in the field or when conditions favor disease development. Use higher rates when conditions favor disease development. **NOTE**: Reddening if older leaves may occur on broccoli and flecking if wrapper may occur on cabbage.
Carrots	0.5-1.89 0.27-1.0)	9.43 (5.0)	7 days	Alternaria, Cercospora: Begin treatment when disease first appears and repeat at 7 days intervals as needed. Use on yellow varieties may cause discoloration. Avoid discoloration by picking before spraying. Fireblight: Apply before silver-tip and green-tip. **NOTE**: Phytotoxicity may occur from late application. Discontinue when green-tip is ½ inch. Crown or Collar Rot: Apply either in early spring or in fall after harvest each year. Do not use if soil pH is below 5.5 or toxicity may occur.
Celery	0.475-1.89 (0.25-1.0)	10.0 (5.3)	7 days	Early, Late & Bacterial Blight: Begin applications when plants are first established in the field. Repeat every 7 days depending on disease severity.
Cucurbits: Cantaloupe, Cucumbers, Melons, Pumpkins, Squash	0.5-1.98 (0.27-1.05)	9.91 (5.25)	5 days	Angular Leaf Spot, Anthracnose, Leaf Alternaria, Downey, Mildew, Powdery Mildew, Gummy Stem Blight: Begin treatment when conditions are favorable for disease development and repeat every 5 to 10 days. A ground application before emergence may help decrease disease pressure after emergence. **NOTE:** Crop injury may occur from higher rates and shorter intervals. Consult Local experiment station regarding the use of Hydrated Lime.
Eggplant	0.5-1.49 (0.27-0.79)	14.9 (7.9)	7 days	Anthracnose, Phomopsis, Alternaria: Apply to plant beds or fields before disease appears. Repeat at 7 days intervals.
Lettuce	0.475-1.89 (0.25-1.0)	15.1 (8.0)	5 days	Anthracnose, Downey Mildew, Leaf Spot: Begin treatment when disease appears. Repeat at 5 to 10-day intervals as needed.

CROP	Application Rate (lbs/A) (lbs Cu^{2+}/A)	Maximum Annual Rate (lbs/A) (lbs Cu^{2+}/A)	Minimum Retreatment Interval	Comment
Onions, Garlic	0.475-1.89 (0.25-1.0)	11.3 (5.99)	7 days	Downey Mildew, Purple Blotch: Apply when plants are 4 to 6 inches at 7-10-day intervals depending in disease pressure. **NOTE:** Can cause phytotoxicity to leaves.
Peas	0.75-1.49 (0.4-0.79)	7.45 (3.95)	7 days	Downey Mildew, Leaf Spot: Begin spraying when disease first appears and repeat at 7 to 10-day intervals as needed.
Pepper	0.5-1.49 (0.27-0.79)	22.4 (11.87)	3 days	Bacterial Spot: Start treatment when conditions favor disease development and continue at 3-10-day intervals as needed.
Potato	1.0-4.72 (0.53-2.5)	47.2 (25.0)	5 days	Early and Late Blight: Begin treatment when plants are 6 inches high and repeat at 5 to 10-day intervals until 2 weeks before harvest.
Spinach	0.5-1.49 (0.27-0.79)	7.45 (3.95)	7 days	Anthracnose, Downey Mildew, White Rust, Cercospora Leaf Spot: Begin treatment when disease first appears and repeat as 7 to 10-day intervals as needed. **NOTE:** Flecking may occur on leaves.
Sugar Beets	1.0-2.47 (0.53-1.31)	14.8 (7.84)	10 days	Cercospora and Leaf Spot: Apply when disease conditions favor disease development and repeat at 10-14-day intervals.
Tomato, Fresh Market	1.5-3.02 (0.8-1.6)	15.1 (8.0)	3 days	Anthracnose, Bacterial Spot, Leaf Mold, Leaf Spot, Late Blight: When disease threatens apply at 3-10-day intervals. Early Blight: Apply before it rains. May cause discoloration on yellow varieties. Bacterial Speck: Apply at 10-30 days intervals beginning when disease threatens. Use more frequently when disease pressure is high.

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