U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (7505T)
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

NOTICE OF PESTICIDE:
_X_ Registration
___ Reregistration
(under FIFRA, as amended)

EPA Reg. Number:	Date of Issuance:
83100-63	8/22/24

Term of Issuance:
Unconditional

Name of Pesticide Product:
Rotam Copper Sulfate Pentahydrate 20.5% SC

Name and Address of Registrant (include ZIP Code):

Rotam Agrochemical Company Ltd.
c/o Wagner Regulatory Associates, Inc.
P.O. Box 640, 7217 Lancaster Pike, Suite A
Hockessin, DE 19707

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration/reregistration/registration review of your product when the Agency requires all registrants of similar products to submit such data.

Continues page 2

Signature of Approving Official:

Kristy Crews

Kristy Crews, Ph.D., Product Manager 22
Fungicide Branch, Registration Division (7505T)
Office of Pesticide Programs, USEPA

Date:
8/22/24

EPA Form 8570-6

2. Make the following label changes before you release the product for shipment:

    - Revise the EPA Registration Number to read, "EPA Reg. No. 83100-63."

3. Submit one copy of the final printed label for the record before you release the product for shipment.

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 FIFRA 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) lists examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should 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.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records.

The record for this product currently contains the following CSF(s):

- Basic CSF dated 01/06/2022

If you have any questions, please contact James Orrock by phone at 202-566-2862 or by email at orrock.james@epa.gov.

Enclosure- Stamped Label

{Note to reviewer: [Text] in brackets denotes optional text.}

[MASTER LABEL]

COPPER SULFATE PENTAHYDRATE	GROUP	M01	FUNGICIDE
COPPER SULFATE PENTAHYDRATE	GROUP	NOT CLASSIFIED	HERBICIDE

Copper Sulfate Pentahydrate 20.5% SC

Algaecide, Bactericide*, Fungicide

ACTIVE INGREDIENT:	**BY WT.**
Copper Sulfate Pentahydrate (CAS #7758-99-8)	20.5%
OTHER INGREDIENTS:	79.5%
TOTAL:	**100.0%**

5.21% Metallic Copper Equivalent.
Contains 0.51 lb./gal. metallic copper.
Copper Sulfate Pentahydrate 20.5% SC is a fully dissolved copper product.

*NON-PUBLIC HEALTH BACTERIA.

KEEP OUT OF REACH OF CHILDREN

DANGER / PELIGRO

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

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. • Call a poison control center or doctor for treatment advice.
IF SWALLOWED:	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a 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 a poison control center or doctor for treatment advice.

HOTLINE NUMBERS

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For non-emergency exposure information on this product, call 1-888-347-6732 (7 days/week, 24-hr). For medical emergencies, dial 911.

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage.

[*Optional referral statements when booklets and container labels are used:*]
[See [inside] booklet for [additional] [complete] [Precautionary Statements,] [Directions For Use,] [Storage and Disposal,] [and] [Conditions of Sale and Warranty].]

For 24-hour chemical spill, leak, fire, exposure or accident response information, call CHEMTREC toll free at 1-800-424-9300.

Manufactured [For][By]:
Albaugh, LLC
1525 NE 36th Street
Ankeny, IA 50021
[Product of XXXXXX]

ACCEPTED
08/22/2024
Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 83100-63

EPA Reg. No.: 83100-XX
EPA Est.No.: _____

Net Contents:_____ [Gallons/Liters] [Batch No.: _____] [Lot No.: ____]

{*Note to Reviewer: Either Batch or Lot No. will be selected and included on container label based on what method and container is used by manufacturer.}*

{Note to reviewer: [Text] in brackets denotes optional text.}

[Table of Contents to be added before the Precautionary Statements.]

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

Corrosive. Causes irreversible eye damage. Harmful if swallowed. Harmful if absorbed through skin. Do not get in eyes, on skin, or on clothing. Wear protective eyewear (goggles, face shield, or safety glasses). Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

All mixers, loaders, applicators, and other handlers must wear:

- Protective eyewear (goggles, face shield, or safety glasses)
- Long-sleeved shirt and Long pants
- Shoes and socks
- Waterproof or chemical-resistant gloves including barrier laminate, butyl rubber ≥14 mil, nitrile rubber ≥14 mil, neoprene rubber ≥14 mil, polyvinyl chloride (PVC) ≥14 mil, or Viton ≥14 mil
- For overhead exposure, wear chemical-resistant headgear

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

ENGINEERING CONTROL STATEMENTS

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

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands thoroughly after handling and 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. If pesticide gets on skin, wash immediately with soap and water.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Fish Advisory Statement: This copper 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.

Waters treated with this product may be hazardous to aquatic organisms. Treatment of aquatic weeds and algae can result in oxygen loss from decomposition of dead biomass. This oxygen loss can cause fish and invertebrate suffocation. To minimize this hazard, do not treat more than half of the water body (excluding water infrastructure and constructed conveyances including drainage canals, ditches and pipelines or intakes and aqueducts for drinking water or irrigation use) to avoid depletion of oxygen due to decaying vegetation. Wait at least 14 days between treatments. Begin treatment along the shore and proceed outward in bands to allow fish to move into untreated areas. Consult with the State or local agency with primary responsibility for regulating pesticides before applying to public waters to determine if a permit is required. Application of algaecides to high density blooms of cyanobacteria can result in the release of intracellular contents into the water. Some of these intracellular compounds are known mammalian hepato and nervous system toxins. Therefore, to minimize the risk of toxin leakage, manage cyanobacteria effectively in order to avoid applying this product when blooms of toxin-producing cyanobacteria are present at high density. In situations where rapidly reproducing toxic algal species pose a public health threat to drinking or recreational water resources, applicators must receive authorization from applicable State, local, or Tribal water resources authorities to apply copper at intervals shorter than 14 days should the circumstance demand.

Certain water conditions including low pH (≤6.5), low dissolved organic carbon (DOC) levels (3.0 mg/L or lower) and "soft" waters (i.e., alkalinity less than 50 mg/L) increases the potential acute toxicity to non-target aquatic organisms. The application rates on this label are appropriate for water with pH values > 6.5, DOC levels >3.0 mg/L, and alkalinity greater than 50 mg/L. Avoid treating waters with pH values <6.5, DOC levels >3.0, and alkalinity less than 50 ppm (e.g., soft or acid waters), as trout and other sensitive species of fish may be killed under such conditions if present.

Consult your State department of natural resources or fish and game agency before applying this product to public waters. Permits may be required before treating such waters.

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

{Note to reviewer: [Text] in brackets denotes optional text.}

PHYSICAL AND CHEMICAL HAZARDS

Do not use near or in containers composed of iron. Do not mix or allow coming in contact with reducing agent. Hazardous chemical reaction may occur.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Read entire label before using this product.

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 (WPS), 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval (REI). The requirements in this box only apply to uses of this product that are covered by the WPS.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 48 hours.

For greenhouse uses, the REI may be reduced to 24 hours provided that the following conditions are met:
For at least 7 days following the application of this product in greenhouses:

- At least one container or station designed specifically for flushing eyes is available in operating conditions with the WPS-required decontamination supplies for workers entering the area treated with this product.
- Workers are informed orally in a manner they can understand that, 1) residues in the treated area may be highly irritating to the eyes, 2) they must take precautions, including refraining from rubbing their eyes to keep the residues out of their eyes, 3) if they do get residues in their eyes, they must immediately flush their eyes with the eye flush container or in the eye flush station that is located with the decontamination supplies, and 4) how to operate the eye flush container or eye flush station.

PPE required for early entry to treated areas that is permitted under the WPS and that involves contact with anything that has been treated, including plants, soil or water is:

- Coveralls
- Waterproof or chemical-resistant gloves including barrier laminate, butyl rubber $\geq$14 mil, nitrile rubber $\geq$14 mil, neoprene rubber $\geq$14 mil, polyvinyl chloride (PVC) $\geq$14 mil, or Viton $\geq$14 mil
- Protective eyewear
- Shoes plus socks

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 WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. Do not allow people or pets to enter treated areas until sprays have dried.

PRODUCT INFORMATION

Copper Sulfate Pentahydrate 20.5% SC is used to control algae or bacteria (non-public health bacteria) in impounded waters, lakes, ponds, livestock watering systems, reservoirs, or irrigation canals.

Copper Sulfate Pentahydrate 20.5% SC is used to control algae or bacteria (non-public health bacteria) in non-sprinkler, non-drip irrigation conveyance and chemigation systems, and similar open irrigation conveyances.

Copper Sulfate Pentahydrate 20.5% SC is used to control algae or bacteria (non-public health bacteria) in sprinkler, drip, or other types of closed irrigation equipment.

Copper Sulfate Pentahydrate 20.5% SC is used for extending the shelf life of listed fruits, vegetables, and other plants by reduction of the bacteria (non-public health bacteria) and fungi that cause spoilage in post-harvest raw fruits, vegetables and other plants from nurseries, greenhouses, and fields.

Copper Sulfate Pentahydrate 20.5% SC is used to control algae and tadpole shrimp in rice fields.

Copper Sulfate Pentahydrate 20.5% SC is used for control of plant diseases in listed food and non-food crops, tropical foliage plants, annual/perennial plants, potted flowering plants, shrubs and vines, trees and turfgrass in nurseries, greenhouses, and fields.

Copper is a micronutrient, but its pesticidal application rate exceeds the amount of copper needed as a nutrient.

Use Precautions:

- This product may be reactive on masonry and metal surfaces including galvanized roofing. Avoid contact with metal surfaces.
- Environmental conditions including extended periods of wet weather, acid rain, etc., which alter the pH of the leaf surface may affect the performance of **Copper Sulfate Pentahydrate 20.5% SC** resulting in possible phytotoxicity or loss of effectiveness.

- It must be determined in the selection process if proper application equipment is available and if the waste associated with its use can be properly handled. Materials used on the construction of application equipment is also an important factor as agricultural chemicals are often reactive with soft metals including aluminum and even some synthetic materials including plastics, rubbers, etc. Therefore, it is necessary when working with equipment containing these materials, that they are thoroughly flushed with clean water after each day's use.

Use Restrictions:

- Do not mix **Copper Sulfate Pentahydrate 20.5% SC** with acidic compounds including products containing aluminum or apply to crops within 14 days before or after application of same.
- Do not spray on cars, houses, lawn furniture, etc.
- Do not mix with pot ash.
- Pilots must use an enclosed cab that meets the definition listed in the WPS for agricultural pesticides [40 CFR 170.305].

Aquatic Uses (Excluding Control of Tadpole Shrimp or Algae in Rice Fields):

This pesticide is toxic to fish and aquatic invertebrates. Waters treated with this product may be hazardous to aquatic organisms. Treatment of aquatic weeds and algae can result in oxygen loss from decomposition of dead algae and weeds. This oxygen loss can cause fish and invertebrate suffocation. To minimize this hazard, do not treat more than half of the water body (excluding water infrastructure and constructed conveyances including drainage canals, ditches and pipelines or intakes and aqueducts for drinking water or irrigation uses) to avoid depletion of oxygen due to decaying vegetation. Wait at least 14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Consult with the State or local agency with primary responsibility for regulating pesticides before applying to public waters, to determine if a permit is required. Application of algaecides to high density blooms of cyanobacteria can result in the release of intracellular contents into the water. Some of these intracellular compounds are known mammalian hepato- and nervous system toxins. Therefore, to minimize the risk of toxin leakage, manage cyanobacteria effectively in order to avoid applying this product when blooms of toxin-producing cyanobacteria are present at high density. In situations where rapidly reproducing toxic algal species pose a public health threat to drinking or recreational water resources, applicators must receive authorization from applicable State, local, or Tribal water resources authorities to apply copper at intervals shorter than 14 days should the circumstance demand.

Certain water conditions including low pH ($\leq$6.5), low dissolved organic carbon (DOC) levels (3.0 mg/L or lower), and "soft" waters (i.e., alkalinity less than 50 mg/L), increases the potential acute toxicity to non-target aquatic organisms. The application rates on this label are appropriate for water with pH values > 6.5, DOC levels >3.0 mg/L, and alkalinity greater than 50 mg/L. Avoid treating waters with pH values <6.5, DOC levels >3.0, and alkalinity less than 50 ppm (e.g., soft or acid waters), as trout and other sensitive species of fish may be killed under such conditions if present. Consult your State department of natural resources or fish and game agency before applying this product to public waters. Permits may be required before treating such waters. Consult your State department of natural resources or fish and game agency before applying this product to public waters. Permits may be required before treating such water.

Application and Handling Equipment

Application, handling, or storage equipment MUST consist of either fiberglass, PVCs, polypropylenes, Viton, most plastics, aluminum, or stainless steel. Never use mild steel, nylon, brass, or copper around full strength **Copper Sulfate Pentahydrate 20.5% SC**. Always rinse equipment free and clean of **Copper Sulfate Pentahydrate 20.5% SC** each night with plenty of fresh, clean water. Always store **Copper Sulfate Pentahydrate 20.5% SC** above 32°F. Freezing may cause product separation. Seller makes no warranty for the performance of product which has been frozen.

Frost Injury Protection Bacterial Ice Nucleation Inhibitor

Application of **Copper Sulfate Pentahydrate 20.5% SC** made to all crops listed on this label at rates and stages of growth indicated on this label, at least 24 hours prior to anticipated frost conditions, will afford control of ice nucleating bacteria (*Pseudomonas syringae*, *Erwinia herbicola*, and *Pseudomonas fluorescens*) and may therefore provide some protection against light frost. Not recommended for those geographical areas where weather conditions favor severe frost.

RESISTANCE MANAGEMENT

For resistance management, **Copper Sulfate Pentahydrate 20.5% SC** contains a Group M01 fungicide/bactericide (non-public health bacteria). Any fungal/bacterial population may contain individuals naturally resistant to **Copper Sulfate Pentahydrate 20.5% SC** and other Group M01fungicides/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 must be followed.

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

- Rotate the use of **Copper Sulfate Pentahydrate 20.5% SC** or other Group M01 fungicides/bactericides within a growing season sequence with different groups that control the same pathogens.
- Use tank mixtures with fungicide/bactericides 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/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.
- For further information or to report suspected resistance, contact your Albaugh, LLC representative. You can also contact your pesticide distributor or university extension specialist to report resistance.

The multi-site activity grouping, designated by the symbol "M01", comprises a collection of various chemicals that act as general toxophores with several sites of action. These sites may differ between group members.

Suspected herbicide-resistant weeds may be identified by these indicators:
- Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;
- A spreading patch of non-controlled plants of a particular weed species; and
- Surviving plants mixed with controlled individuals of the same species.

Water bodies or management units must be scouted prior to application to identify the weed species present and their growth stage to determine if the intended application will be effective. Water bodies or management units must be scouted after application to verify that the treatment was effective.

Report any incidence of non-performance of this product against a particular weed species to your retailer or representative. If resistance is suspected, treat weed escapes with an herbicide having a different mechanism of action and/or use non-chemical means to remove escapes, as practical, with the goal of preventing further reproduction.

Implement the Early Detection, Rapid Response practice and Maintenance Control by using the following practices where possible:
- Identify weeds present in a management unit through scouting or history of the water body and understand the biology of target species.
- Applications must target weeds when populations are small and there is low biomass, early in the season to maximize efficacy.
- Applications must be made so that the herbicide contacts the weed. Use the appropriate application method for the use site/weed/chemical combination.
- Weed escapes must not be allowed to go to seed or produce asexual vegetative propagules.
- Use a diversified approach toward weed management. Whenever possible incorporate multiple weed-control practices including mechanical control, biological management practices, and rotation of MOAs.
- Time applications to have the highest probability for control and minimize need for follow-up control measures. Apply during conditions that minimize herbicide degradation (light/temperature/microbes) and/or dissipation (water exchange).

Contact your local sales representative, local water management agency, or extension agent to find out if suspected resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds have been reported, use the application rates of this product specified for your local conditions. Tank mix products so that there are multiple effective mechanisms of actions for each target weed.

SPRAY DRIFT MANAGEMENT

A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, relative humidity) and the method of application (e.g., ground, aerial, chemigation) can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

Droplet Size: Applicators are required to use a medium or coarser droplet size (ASABE S572.1).

Wind Speed: Do not apply at wind speeds greater than 15 mph. Only apply this product if the wind direction favors on-target deposition (approximately 3 to 10 mph), and there are no sensitive areas within 250 feet downwind.

Temperature Inversions: If applying at wind speeds less than 3 mph, the applicator must determine if a) conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions or stable atmospheric conditions.

Other State and Local Requirements: Applicators must follow all State and local pesticide drift requirements regarding application of copper compounds. Where states have more stringent regulations, they must be observed.

Equipment: All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

{Note to reviewer: [Text] in brackets denotes optional text.}

SPRAY DRIFT

Aerial Application:

- Do not release spray at a height greater than 10 ft. 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 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 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 manufacturer's recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles must 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 must 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.

{Note to reviewer: [Text] in brackets denotes optional text.}

CHEMIGATION DIRECTIONS

Apply this product only through one or more of the following types of systems: Sprinkler including center pivot, lateral move, end row, side (wheel) roll, traveler, big gun, solid set, or hand move: flood (basin); furrow; border or drip (trickle) irrigation and system(s). Do not apply this product through any other type of irrigation systems.

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 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 the pesticide label prescribed safety device for public water systems is in place.
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. Posting areas to be chemigated is required when:

- Any part of a treated area is within 300 feet of sensitive areas including residential areas, labor camps, businesses, day care centers, hospitals, in-patient clinics, nursing homes or any public areas including schools, parks, playgrounds, or other public facilities not including public roads, or
- Chemigated area is open to the public including 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 area. When there are no usual points of entry, signs must be posted in the corners of the treated areas and any other locations affording maximum visibility to sensitive areas. The printed side of the sign must 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.

All words shall consist of letters of at least 2.5 inches tall, and all letters and the symbol shall be in a color which sharply contrasts with their immediate background. 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. This sign is in addition to any sign posted to comply with the Worker Protection Standard.

Chemigation Systems Connected to Public Water Systems
Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced pressure zone (RPZ), backflow preventer 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 must be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete break (air gap) between the flow outlet end of the fill pipe and the top of the 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 liquid back toward the injection. The pesticide injection pipeline must contain a functional, normally closed, solenoid: operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

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 the pesticide distribution is adversely affected.

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

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

When mixing, agitation is not necessary. Adjust the pH of the water to 7 or below. If using stickers, spreaders, insecticides, nutrients, etc., add **Copper Sulfate Pentahydrate 20.5% SC** last. If compatibility is in question, use a compatibility jar test before mixing a whole tank. Because of a wide variety of possible combinations which can be encountered, observe all cautions and limitations on the label of all products used in the mixtures.

Copper Sulfate Pentahydrate 20.5% SC may be added through a traveling system continuously or at the last 30 minutes of solid set or hand moved irrigation systems. **Copper Sulfate Pentahydrate 20.5% SC** readily disperses and needs no agitation.

Sprinkler and Drip (Trickle) Chemigation
The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.

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

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

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, including a positive displacement pump (i.e., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. Do not apply when wind speed favors drift beyond the area intended for treatment.

When mixing, agitation is not necessary. Adjust the pH of the carrier water to 7 or below. If using stickers, spreaders, insecticides, nutrients, etc., add the **Copper Sulfate Pentahydrate 20.5% SC** last. If compatibility is in question, use a compatibility jar test before mixing a whole tank. Because of a wide variety of possible combinations which can be encountered, observe all cautions and limitations on the label of all products used in the mixtures.

Copper Sulfate Pentahydrate 20.5% SC may be added through a traveling irrigation system or at the last 30 minutes of solid set or hand moved irrigation systems. **Copper Sulfate Pentahydrate 20.5% SC** readily disperses and needs no agitation.

Flood (Basin), Furrow, and Border Chemigation
Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity including a drop structure or weir box to decrease potential for water source contamination from back flow if water flow stops.

Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:

- 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 back flow.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must also contain a functional, normally closed, solenoid operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- 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, including a positive displacement pump (i.e., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

When mixing, agitation is not necessary. Adjust the pH of the carrier water to 7 or below. If using stickers, spreaders, insecticides, nutrients, etc., add the **Copper Sulfate Pentahydrate 20.5% SC** last. If compatibility is in question, use a compatibility jar test before mixing a whole tank. Because of a wide variety of possible combinations which can be encountered, observe all cautions and limitations on the labels of all products used on the mixtures. **Copper Sulfate Pentahydrate 20.5% SC** may be added through a traveling irrigation system continuously or at the last 30 minutes of solid set or hand moved irrigation systems. **Copper Sulfate Pentahydrate 20.5% SC** readily disperses and needs no agitation.

FOR SPRAY AND SOIL DRENCH APPLICATIONS

Always spray for total foliage coverage. When re-spraying, the rates and severity of the disease vary with unforeseen conditions. However, in the event of severe disease, spraying intervals can be shortened, see the **Minimum Retreatment Interval** column for the shortest interval between applications. At times, lower rates can be as effective as higher rates and must be tried first. Usually, preventive programs may be maintained at lower rates. Use of low volume spraying is effective against Botrytis but not effective against established powdery mildew and Xanthomonas infections. Also, applications on actively growing tissue may be more effective than applications on dormant tissue.

{Note to reviewer: [Text] in brackets denotes optional text.}

Minimum Spray Volume per Acre When Applying Copper Sulfate Pentahydrate 20.5% SC

Ground			
Crop	**Aerial (Gals.)**	**Dilute (Gals.)**	**Concentrate (Gals.)†**
Citrus	10	125	30
Field Crops	3	20	30
Small Fruits	5	150	30
Tree Crops	10	400	50
Vegetables	3	20	30
Vines	5	150	30
†Pesticide application equipment including Curtec™ or other similar sprayers which are capable of obtaining coverage at low volumes may be used as low as 20 gals. per acre of spray volume.			

The following specific directions are based on general application procedures. The Recommendations of the State Extension Service must be closely followed as to timing, frequency, and numbers of sprays per season. Do not exceed the specified use rates or apply at different intervals than specified in the use directions.

APPLICATION DIRECTIONS

Pre-Application Dose Determination: For algae treatments, applicators should conduct initial dose determination tests simulating a full-scale treatment program to determine the minimum efficacious concentrations for eliminating the target species, unless an effective dose is already known for the given target pest population.

Maximum Annual Application Rates for Aquatic Uses in Impounded Waters, Ponds, Lakes, and Reservoirs: Maximum annual application rate of 21.9 lbs. of metallic copper per acre-foot (8 applications per year at up to 1 ppm). This rate/frequency is calculated based on staggering the treatment of each half of the water body every 14 days (at a rate of 2.74 lbs. metallic copper per acre-foot = 1 ppm) for eight months (244 days). In situations where rapidly reproducing toxic algal species pose a public health threat to drinking or recreational water resources, applicators must receive authorization from applicable state, local or tribal water resources authorities to apply copper in excess of 21.9 lbs. of metallic copper per acre-foot (8 applications per year at up to 1 ppm).

For Large Bodies of Water Separated Into Sections (Water Management Units):
Maximum annual application rate of 46.6 lbs. of metallic copper per acre-foot per year (17 applications per year at up to 1 ppm). This rate/frequency is calculated based on the maximum number of possible applications allowed based on a 14-day minimum (at a rate of 2.74 lbs. metallic copper per acre-foot = 1 ppm) retreatment interval for eight months (244 days). Do not apply more than 46.6 lbs. of metallic copper to a water management unit, regardless of the pest(s) targeted by applications. In situations where rapidly reproducing toxic algal species pose a public health threat to drinking or recreational water resources, applicators must receive authorization from applicable state, local or tribal water resources authorities to apply copper in excess of 46.6 lbs. of metallic copper per acre-foot per year for a single water management unit.

FOR ALGAE AND BACTERIA* CONTROL IN IMPOUNDED WATERS, LAKES, PONDS, RESERVOIRS AND CANALS FOR IRRIGATION AND CHEMIGATION SYSTEMS:
Apply Copper Sulfate Pentahydrate 20.5% SC for 3 acres or less by pouring directly into ponds, small lakes or reservoirs. Copper Sulfate Pentahydrate 20.5% SC application for 3 acres or more should be applied at several points into ponds, lakes or reservoirs. Larger bodies of water can be treated through metering pump, dragging a feeder hose behind a boat across a body of water or dispensing via conventional spray equipment mounted to a boat, helicopter or airplane onto the surface. Copper Sulfate Pentahydrate 20.5% SC will quickly diffuse throughout the water body in several hours, broad distribution will speed dispersal. No more than ½ of the body of water may be treated in a single application. For small ponds or for spot treatments around shoreline, such as on private piers and docks, apply Copper Sulfate Pentahydrate 20.5% SC by directly pouring 1.9 fluid ounces per 125 cubic feet (¼ tsp or .0002 lbs. per 20 gallons) of water for 1 ppm of copper into the water around half of the perimeter of the body of water or at the spot to be treated. When applying from boat, use minimal speed to allow the prop wash to disperse and mix the product into the treated waters. Dispense up to 2.72 lbs. metallic copper (5.33 gals. of Copper Sulfate Pentahydrate 20.5% SC) per acre-foot of water (see use rate chart below). Apply in late spring or early summer when algae/bacteria* first appear. For best results, disperse Copper Sulfate Pentahydrate 20.5% SC evenly to warm, still water on a sunny day when algae are near the surface. Several application points speed up dispersal.

For irrigation systems via slug delivery, maximum annual application rate is 13 lbs. metallic copper (25.49 gals. of Copper Sulfate Pentahydrate 20.5% SC) per year per 5 miles of conveyance. Apply copper into irrigation conveyance system or lateral at up to a maximum rate of 0.5 lbs. metallic copper (0.98 gals. of Copper Sulfate Pentahydrate 20.5% SC) per cubic foot per second of water per 5 to 30-mile treatment depending on water hardness, alkalinity and algae concentration. This method may only be used in constructed irrigation conveyance systems, laterals and aqueducts.

Use rates vary, depending on algae/bacteria species, water hardness, water temperature, and amount of algae/bacteria present; as well as whether water is clear, turbid, flowing or static. Preferably, the water should be clear with temperatures above 60ºF (15.6º C). Higher dosages are required at lower water temperatures, higher algae/bacteria concentrations, and for hard waters. Static water requires less chemical for algae/bacteria control than does flowing water. Use higher dosages for chara, nitella, and filamentous algae (pond scum), and lower dosages for planktonic algae. If there is uncertainty about the

dosage, begin with a lower dose and increase until control is achieved or until the maximum allowable level has been reached (see the use rate chart below).

USE RATES

Gallons of Product per acre/ft (lbs. Cu^{2+}/Acre Foot)	Equivalent Metallic Copper (ppm)
0.32 (.16 lbs.)	**0.06**
0.49 (.25 lbs.)	**0.09**
3.20 (1.63 lbs.)	**0.60**
5.33 gals. (2.72 lbs.)	**1.00**

***NON-PUBLIC HEALTH BACTERIA**

Useful formulas for calculating water volume and flow rates:

To find the capacity of water storage containment in gallons:
Multiply the water volume in cubic feet times 7.5
Note: 1 Cubic Foot per Second of Flow = 27,000 gallons per hour
1 Acre Foot = 326,000 gallons

CONTROL OF ALGAE / BACTERIA* IN LIVESTOCK WATERING PONDS, TANKS AND TROUGHS AND DRIP SYSTEMS IN LIVESTOCK WATERING TANKS:
Stock watering ponds, tanks, and troughs:
For the control of algae/bacteria* in stock water ponds, tanks, and troughs, add ¼ tsp. of Copper Sulfate Pentahydrate 20.5% SC .0002 lbs. of Copper Sulfate Pentahydrate 20.5% SC to 30 gallons of water for a final ppm of 0.7 ppm. Do not exceed 1 ppm (¼ tsp. or .0002 lbs. per 20 gallons). Apply by boat or from side of pond at equal intervals or directly to tanks or troughs.

*NON-PUBLIC HEALTH BACTERIA

For drip-system use in livestock watering tanks:
Tanks fed by a continuous flow of spring or well water may be equipped with a chemical drip-system designed to meter-in Copper Sulfate Pentahydrate 20.5% SC based upon water flow rates. Systems should be adjusted to maintain a concentration of 0.7 ppm copper in incoming stock water (0.145 fl. oz. of product per minute to a water flow of 100 gallons per minute). Treat continuously or as needed to control and prevent algae re-growth.

IN NON-SPRINKLER, NON-DRIP IRRIGATION CONVEYANCE SYSTEMS AND CHEMIGATION SYSTEMS, DITCHES, CANALS, AND SIMILAR OPEN IRRIGATION CONVEYANCES:
For continuous addition, add 1.94 fl. oz. per hour of Copper Sulfate Pentahydrate 20.5% SC for each 1,000 gallons of water per hour. For conveyance systems longer than 30 miles, dispense this rate among injection points every 30 miles. Do not exceed the total dosage of 1 Gallon Copper Sulfate Pentahydrate 20.5% SC in 61,000 gallons of water (1 ppm metallic copper).

When using the slug application method, the maximum annual application rate of 13 lbs. metallic copper (25.47 gals. of Copper Sulfate Pentahydrate 20.5% SC) per year per 5 miles of conveyance. Apply copper into irrigation conveyance system or lateral at up to a maximum rate of 0.5 lbs. metallic copper (0.97 gals of Copper Sulfate Pentahydrate 20.5% SC) per cubic foot per second of water per 5 to 30-mile treatment depending on water hardness, alkalinity and algae concentration. This application method may only be used in constructed irrigation conveyance systems, laterals and aqueducts.

TO CONTROL ALGAE OR BACTERIA* IN SPRINKLER, DRIP OR OTHER TYPES OF CLOSED IRRIGATION EQUIPMENT:
Use 15.5 ounces of Copper Sulfate Pentahydrate 20.5% SC per 7,500 to 300,000 gallons of water. Agitation is not required. Do not mix with basic substances. Copper Sulfate Pentahydrate 20.5% SC must be applied continuously for the duration of the water application.

*NON-PUBLIC HEALTH BACTERIA

{Note to reviewer: [Text] in brackets denotes optional text.}

EXAMPLE CALCULATION

CHEMIGATION AND IRRIGATION FLOW RATES
(0.06 ppm Cu^{2+})

Water Flow Rate (Gals./Min./Ac./ft.) (GPM)	Water Flow Rate (Cu. Ft./Min/) (cfm)	Dosage Rate (ppm Metallic Cu^{2+})	Copper Sulfate Pentahydrate 20.5% SC (Fl. Oz./Min.)	Feeder Pump Setting Copper Sulfate Pentahydrate 20.5% SC (mL/Min.)
3,000	401	0.06	0.38	11.2
6,000	802	0.06	0.76	22.5
9,000	1,203	0.06	1.11	32.8
12,000	1,604	0.06	1.50	44.4

CHEMIGATION AND IRRIGATION FLOW RATES
(1.0 ppm Cu^{2+})

Water Flow Rate (Gals./Min./Ac./ft.) (GPM)	Water Flow Rate (Cu. Ft./Min/) (cfm)	Dosage Rate (ppm Metallic Cu^{2+})	Copper Sulfate Pentahydrate 20.5% SC (Fl. Oz./Min.)	Feeder Pump Setting Copper Sulfate Pentahydrate 20.5% SC (mL/Min.)
3,000	401	1.0	6.2	183.4
6,000	802	1.0	12.4	366.7
9,000	1.203	1.0	18.5	547.1
12,000	1,604	1.0	24.7	730.5

***NON-PUBLIC HEALTH BACTERIA**

BIOLOGICAL FISH PONDS AND AQUACULTURE SYSTEMS:
Before treating ponds containing fish with Copper Sulfate Pentahydrate 20.5% SC, measure total alkalinity (not hardness or pH). The toxicity of copper to fish increases as the total alkalinity decreases. Sensitivity to copper varies between fish species. For copper sensitive species, do not exceed 0.06 ppm metallic copper. When algae concentrations are high, to avoid suffocation of fish after treatment, either treat in a series of smaller doses over time or have emergency aeration available. Apply at the rate of 1/4 to 1/2 gallon of Copper Sulfate Pentahydrate 20.5% SC per acre foot (325,853 gallons) of water to yield concentrations ranging from 0.05 ppm to .094 ppm metallic copper, respectively. Metallic copper concentration is directly proportional to amount of Copper Sulfate Pentahydrate 20.5% SC added per acre foot. A maintenance dose of 3.9 to 7.8 ounces per acre foot may be used every 14 days. The rate is dependent on water temperature, fish density arid the degree of suppression targeted.

Amount of Copper Sulfate Pentahydrate 20.5% SC in Aquacultural Ponds Applied One Acre Foot (12 Inches Deep)		
Copper Sulfate Pentahydrate 20.5% SC (Gals.)	Water (Gals.)	Metallic Copper ppm
0.24	326,000	0.05
0.48	326,000	0.09
0.61	326,000	0.11

For use in controlling algae in catfish ponds, copper can be applied throughout the spring and summer when water temperatures are consistently above 70° F when total alkalinity and hardness concentrations fall between 100 and 300 ppm as CaCO3.
Applications are no longer needed in the fall after fish are harvested or the average water temperatures fall below 70°F.
Apply mid-morning at a rate of 0.61 Gallons of Copper Sulfate Pentahydrate 20.5% SC (0.31 lbs. metallic copper) per acre-foot (0.11 ppm metallic copper). Use copper only if you plan to harvest fish before fall and anticipate problems with off-flavoring algae. Do not make routine copper treatments for algae control in fingerling ponds or in broodfish ponds because off-flavors are not a problem in those fish. Do not use this
treatment regimen in waters of low hardness and alkalinity (less than 50 ppm as CaCO3) because copper may stress or kill fish.

TO CONTROL ALGAE IN RICE (Domestic and Wild) FIELDS: Application should be made when algae have formed on the soil surface in the flooded field. Applications are most effective when made prior to the algae's leaving the soil surface and rising to the water surface. Depending on water depth, 1 quart to 1 gallon per acre is normally sufficient. Use the lower rate at minimum water depth and the higher rate at maximum water depth. Higher use rates are acceptable, but never above a concentration of 1ppm metallic copper. The maximum use rate per acre should be determined by the water depth, as shown in the table below, and flow. Copper Sulfate Pentahydrate 20.5% SC can be metered into the rice field as water is being applied or slug fed into each paddy when water is being held.

{Note to reviewer: [Text] in brackets denotes optional text.}

DO NOT exceed a maximum application rate of 5.48 lbs. metallic copper per acre-foot per year for control of algae control in water-seeded rice.

Water depth (inches)	Maximum application rate of Copper Sulfate Pentahydrate 20.5% SC (Gals./A)
2	0.87
3	1.31
4	1.75
5	2.18
6	2.62
12	5.24

TO CONTROL TADPOLE SHRIMP IN RICE (Domestic and Wild) FIELDS: Application should be made to the flooded fields any time the pest appears from planting time until the seedlings are well rooted and have emerged through the water. Depending on depth, 1-4 gallons per acre is normally sufficient. Use the lower rate at minimum water depth and the higher rate at maximum water depth. Higher use rates are acceptable, but never use more than 2.5 ppm metallic copper. Maximum use rate per acre should be determined by the water depth, as shown below.

DO NOT exceed a maximum application rate of 26.86 gallons of Copper Sulfate Pentahydrate 20.5% (13.7 lbs. metallic copper) per acre-foot per year for control of Tadpole shrimp.

For simultaneous control of both tadpole shrimp and algae:

Water depth (inches	Maxim application rate of Copper Sulfate Pentahydrate 20.5% SC (Gals./A/Yr.)
2	2.18
3	3.3
4	4.37
5	5.43
6	6.55
12	13.1

For aerial applications, ensure all aircraft mounted components used to hold or distribute and spray Copper Sulfate Pentahydrate 20.5% SC are constructed of materials outlined in the Application and Handling section (see pg. 5) of this label. Never use materials for this application which are inconsistent with this labeling. Ensure all distribution connections are tight and free of leaks. Failure to follow these instructions could result in the compromise of air frame integrity. In this case air frame failure could result, See the Spray Drift Management section of this label for further restrictions on spraying Copper Sulfate Pentahydrate 20.5% SC.

Extension Of Shelf Life Of Fruits And Vegetables By Reduction Of The Bacteria* And Fungi That Cause Spoilage In Post-Harvest Raw Fruits And Vegetables:

Copper Sulfate Pentahydrate 20.5% SC is a post-harvest wash/spray to reduce spoilage and extend the shelf life of the raw agricultural commodities on this label. Apply with any type of application equipment that gives uniform and thorough coverage. Devices may include but are not limited to, dunk and dip tanks, spray applicators or fogging.

Add between 0.60 fl. oz. (1¼ tablespoons) and 1.80 fl. oz. (3¾ tablespoons) of **Copper Sulfate Pentahydrate 20.5% SC** per 100 gallons of water to clean and control bacteria* and fungi that cause spoilage and contamination. This results in an application concentration of between 3 ppm and 9 ppm copper. Several application points speed up dispersal. Wash fruit or vegetables in solution by immersion, spraying, soaking or other similar method. Drain solution from fruit or vegetables. Fruits and vegetables must remain refrigerated to ensure effectiveness.

For Control Of Listed Plant Diseases In Food And Non Food Crops, Tropical Plants, Annual / Perennial Plants, Potted Flowering Plants, Shrubs And Vines, Trees And Turfgrass In Nurseries, Greenhouses And Fields:

Refer to the tables below for: Crop, disease, application rate/acre range per application and maximum allowable load per growing season per acre, minimum treatment interval and application instructions.

Each gallon of **Copper Sulfate Pentahydrate 20.5% SC** contains 0.51 lbs. of metallic copper.

{Note to reviewer: [Text] in brackets denotes optional text.}

Use Rates

PPMs of A.I.	30 Gallons per Acre	50 Gallons per Acre	100 Gallons per Acre	125 Gallons per Acre	250 Gallons per Acre	500 Gallons per Acre
50	3.14 fl. oz.	5.24 fl. oz.	10.47 fl. oz.	13.09 fl. oz.	26.18 fl. oz.	52.36 fl. oz.
75	4.71 fl. oz.	7.85fl. oz.	15.71 fl. oz.	19.64 fl. oz.	39.27 fl. oz.	78.54 fl. oz.
100	6.28 fl. oz.	10.47 fl.oz.	20.95 fl. oz.	26.18 fl. oz.	52.36 fl. oz.	104.73 fl. oz.
125	7.85 fl. oz.	13.09 fl. oz.	26.18 fl. oz.	32.73 fl. oz.	65.45fl. oz.	130.90 fl. oz.
150	9.43 fl. oz.	15.71 fl. oz.	31.42 fl. oz.	39.27 fl. oz.	78.54 fl. oz.	157.09 fl. oz.

Low volume sprayers should use a minimum of 16 ounces for complete coverage.

The chart above is used to calculate correct ppm of active ingredient (A.I.) per volume of carrier water. These volumes can be used for either conventional or concentrated sprays.
To find the capacity of water storage containment in gallons:
Multiply the water volume in cubic feet times 7.5

Note: 1 Cubic Foot per Second of Flow = 27,000 gallons per hour
1 Acre Foot = 325,853gallons

CITRUS
Grapefruit, Kumquat, Lemon, Lime, Orange, Pomelo, Tangelo and Tangerine

- Maximum annual rate for citrus is 24.7 gals. of product (12.6 lbs. of metallic copper).

Disease	Copper Sulfate Pentahydrate 20.5% SC Rate - Fl. Oz. (Lb. Cu^{2+}) per Acre	Minimum Retreatment Interval (Days)	Directions
Alternaria Brown Rot	29.1 to 67.9 (.116 to .271)	7	Apply at first indication of rain or first appearance of Brown Rot.
Greasy Spot Pink Pitting*	24.8 to 62.1 (.099 to .248)	7	Apply during mid-summer.
Scab*	24.8 to 62.1 (.099 to .248)	7	Apply shortly before trees begin to flush. Re-apply at two thirds petal fall. Re-apply 4 weeks later if necessary
Melanose (*Diaporthe citri*)* Algal Spot*	12.4 to 62.1 (.049 to .248)	7	Apply 2 times per year (applications must be 7 days apart) before onset of spring and autumn rains.
Citrus Canker (*Xanthomonas citri*) (Suppression) *Phytophthora* Brown Rot*	12.4 to 62.1 (.049 to .248)	7	Spray flushes 7 to 14 days after shoots begin to grow. Young fruit may require additional applications. Number and timing of applications will be dependent on disease pressure. Under heavy pressure, each new flush of growth must be sprayed. Heavily infected trees must be sprayed with a minimum concentration of 250 ppm with a follow up spray after 7 to 14 days.
*Not Registered for Use By California.			

{Note to reviewer: [Text] in brackets denotes optional text.}

FIELD CROPS

Crop	Disease	Copper Sulfate Pentahydrate 20.5% SC Rate - Fl. Oz. (Lb. Cu^{2+}) per Acre	Minimum Retreatment Interval (Days)	Directions
Alfalfa* 2.19 gals. (1.12 lbs.)	*Cercospora* Leaf Spot *Leptosphaerulina* Leaf Spot	18.6 to 31 (.074 to .124)	30	Apply 30 days before each harvest or earlier if disease threatens. **Note:** Spray injury may occur with sensitive varieties including Lahontan. Do not apply more than 2.20 gals. (1.12 lbs. metallic copper) of product per acre per year.
Cereal Grains (Barley, Wheat, Oats*) 2.08 gals. (1.06 lbs.)	Blotch *Helminthosporium* Spot *Septoria* Leaf Blotch	18.6 to 24.8 (.074 to.10)	10	Make first application at early heading and follow with a second spray 10 days later. Use the higher rates when conditions favor disease. Do not apply more than 2.08 gals. (1.06 lbs. metallic copper) of product per acre per year.
Corn* (Field Corn, Popcorn, Sweet Corn) 8.23 gals. (4.2 lbs.)	Bacterial Stalk Rot	18.6 to 24.8 (.074 to.10)	7	Begin treatment when disease first appears and repeat every 7 to 10 days. Use the higher rates and shorter spray intervals when conditions favor disease. Do not apply more than 8.24 gals. (4.2 lbs. metallic copper) of product per acre per year.
Peanut* 9.28 gals. (4.74 lbs.)	*Cercospora* Leaf Spot Foliar Diseases of Peanut	18.6 to 24.8 (.074 to.10)	7	Begin spraying at 35 to 40 days after planting or when disease symptoms first appear and repeat at 7- to 14-day intervals during humid weather. Use the higher rates when conditions favor disease. Do not apply more than 9.29 gals. (4.74 lbs. metallic copper) of product per acre per year.
Potato* 49 gals. (25.0 lbs.)	Dry Rot (*Sclerotium rolfsii*) Early Blight (*Alternaria solani)* Grey Mold (*Botrytis cinerea*) Late Blight (*Phytophthora infestans*)	18.6 to 31 (.074 to .124)	5	Apply at 5- to 10-day intervals starting when plants are 2 to 6 inches high in locations where disease is light. Apply up to 32 fl. oz. per acre when disease is more severe. Do not apply more than 49.02 gals. (25 lbs. metallic copper) of product per acre per year.
Sugar Beet* 15.39 gals. (7.86 lbs.)	*Alternaria* Leaf Spot Bacterial Leaf Spot *Cercospora* Leaf Spot Fusarium Powdery Mildew Rhizoctonia Rhizomania, Crown and Root rot	18.6 to 55.3 (0.074 to 0.221)	10	Begin applications when conditions first favor disease development and repeat at 10- to 14-day intervals. Use higher rates when conditions favor disease. Addition of a sticker/spreader is recommended. Do not apply more than 15.41 gals. (7.86 lbs. metallic copper) of product per acre per year.
*Not Registered for Use By California.				

SMALL FRUITS

Crop	Disease	Copper Sulfate Pentahydrate 20.5% SC Rate - Fl. Oz. (Lb. Cu^{2+}) per Acre	Minimum Retreatment Interval (Days)	Directions
Blackberry (Aurora, Boysen, Cascade, Chehalem, Logan, Marion, Santiam, Thornless Evergreen) 19.59 gals. (10 lbs.)	Anthracnose Cane Spot* Leaf Spot Pseudomonas Blight Purple Blotch* Yellow Rust*	31 (.124)	7	Make fall application after harvest. Apply delayed dormant spray after pruning/training in the spring. If needed, agricultural type spray oil may be added. Do not apply more than 19.61 gals. (10 lbs. metallic copper) of product per acre per year.
	Anthracnose Cane Spot* Leaf Spot Purple Blotch* Yellow Rust*	18.6 (.074)	7	Apply when leaf buds begin to open and repeat when flower buds show white. If needed, agricultural-type spray oil may be added. **Note:** Crop injury may occur in environmental conditions including hot or prolonged moist periods. Discontinue applications if signs of crop injury appear. Do

				not apply more than 19.61 gals. (10 lbs. metallic copper) of product per acre per year.
Blueberry 16.45 gals. (8.4 lbs.)	Bacterial Canker	32 to 49.7 (.128 to .198)	7	Make application before fall rains and a second application 4 weeks later. Use the higher rates when conditions favor disease. Do not apply more than 16.47 gals. (8.4 lbs. metallic copper) of product per acre per year.
	Fruit Rot* Phomopsis Twig Blight*	24.8 to 49.7 (.10 to .198)	7	**Dormant Application:** Begin applications when bloom buds begin to swell. Make additional applications at 7- to 14-day intervals before blooms open. Do not apply more than 16.47 gals. (8.4 lbs. metallic copper) of product per acre per year.
Cranberry* 24.69 gals. (12.6 lbs.)	Fruit Rot	49.7 (.198)	7	Make application in late bloom. Apply 1 or 2 additional applications at 7- to 14-day intervals depending on disease severity. Do not apply more than 24.71 gals. (12.6 lbs. metallic copper) of product per acre per year.
	Rose Bloom	49.7 (.198)	7	Apply 3 sprays on 7- to 14-day schedule as soon as symptoms are observed. Do not apply more than 24.71 gals. (12.6 lbs. metallic copper) of product per acre per year.
	Bacterial Stem Canker, Rose Blossom	49.7 (.198)	7	Apply post-harvest and again in spring at bud swell. Apply 1 or 2 additional applications at 7- to 14-day intervals depending on disease severity. Do not apply more than 24.71 gals. (12.6 lbs. metallic copper) of product per acre per year.
	Leaf Blight Red Leaf Spot Stem Blight Tip Blight (*Monilinia*)	49.7 (.198)	7	Apply delayed dormant spray the spring. Repeat at 7- to 14-day intervals through pre-bloom. Do not apply more than 24.71 gals. (12.6 lbs. metallic copper) of product per acre per year.
Currant*, Gooseberry* (Ribes) 31.35 gals. (16 lbs.)	Anthracnose Leaf Spot	62 (.248)	10	Make initial application after first leaves have expanded. Continue on a 10- to 14-day schedule during wet conditions in the spring. Make an additional application after harvest. Do not apply more than 31.37 gals. (16 lbs. metallic copper) of product per acre per year.
Raspberry 19.59 gals. (10 lbs.)	Anthracnose Cane Spot Leaf Spot Pseudomonas Blight Purple Blotch* Yellow Rust*	31 (.124)	7	Make fall application after harvest. Apply delayed dormant spray after training in the spring. If needed, agricultural-type spray oil may be added. Do not apply more than 19.61 gals. (10 lbs. metallic copper) of product per acre per year.
	Anthracnose Cane Spot Leaf Spot Purple Blotch* Yellow Rust*	18.6 ((.074)	7	Apply when leaf buds begin to open and repeat when flower buds show white. If needed, agricultural-type spray oil may be added. **Note:** Crop injury may occur if applied to foliage under certain environmental conditions including hot or prolonged moist periods. Discontinue applications if signs of crop injury appear. Do not apply more than 19.61 gals. (10 lbs. metallic copper) of product per acre per year.
Strawberry 11.76 gals. (6 lbs.)	Angular Leaf Spot (*Xanthomonas*) Downy Mildew Leaf Blight* Leaf Scorch* Leaf Spot	18.6 to 24.8 (.074 to .10)	7	Begin application when plants are established and continue on a weekly schedule throughout the season. Minimum retreatment interval is 7 days. Apply in at least 20 gals. of water. Use the higher rates when conditions favor disease. **Note:** Discontinue applications if signs of crop injury appear. Do not apply more than 11.76 gals. (6 lbs. metallic copper) of product per acre per year.
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{Note to reviewer: [Text] in brackets denotes optional text.}

TREE CROPS

Crop	Disease	Copper Sulfate Pentahydrate 20.5% SC Rate - Fl. Oz. (Lb. Cu^{2+}) per Acre	Minimum Retreatment Interval (Days)	Directions
Almond, Apricot, Cherry, Plum, Prune	Bacterial Blast (*Pseudomonas*) Bacterial Canker Blossom Cherry Brown Rot Coryneum Blight (Shot Hole) Xanthomonas	49.7 to 62 (.198 to .248) on Almond, all others 58.2 to 87.3 (.232 to .348)	7	Make first application before fall rains and a second at late dormant. Use higher rates when conditions favor disease. If needed, agricultural-type spray oil may be added. For Cherries: Where disease is severe, an additional application shortly after harvest may be required. **Note:** Foliar injury may occur from post-bloom sprays on almonds, especially on NePlus varieties. Do not apply more than 36.36 gals. (18 lbs. metallic copper) of product per acre per year.
35.27 gals. (18 lbs.)	Blossom Brown Rot* Coryneum Blight (Shot Hole)	49.7 to 62 (.198 to .248) on Almond, all others 58.2 to 87.3 (.232 to .348)	5	Apply during early bloom. Do not apply after full bloom or injury may occur. Use the higher rates when rainfall is heavy and disease pressure is high. Do not apply more than 35.29 gals. (18 lbs. metallic copper) of product per acre per year.
	Black Knot (Plum)*	31 to 62 (.124 to .248)	5	Make application at bud swell up to early bloom for early disease suppression. Apply before full bloom. Use higher rates when rainfall is heavy and disease pressure is high. **Note:** To avoid plant injury, do not use after full bloom. Do not apply more than 35.29 gals. (18 lbs. metallic copper) of product per acre per year.
	Cherry Leaf Spot (Sour Cherries Only)*	37.2 to 62 (.149 to .248)	7	Apply at petal fall as well as 1 to 2 times after petal fall. Use the lower rates where disease infection is light and use the higher rates for a dormant application or where disease infection is moderate to heavy. Do not apply to sweet cherry or the English Morello variety as severe injury will result. **Note:** Moderate to severe injury including leaf spotting and defoliation may occur from post-bloom applications. Do not apply more than 35.29 gals. (18 lbs. metallic copper) of product per acre per year.
Apple	Anthracnose Blossom Blight European Canker (*Nectria*)* Shoot Blast (*Pseudomonas*)*	49.7 to 62 (.198 to .248)	N/A only 1 application permitted per season.	Apply before fall rains. Use the higher rates when conditions favor disease. **Note:** Use on yellow varieties may cause discoloration. To avoid discoloration, pick before spraying. Do not apply more than 31.37 gals. (16 lbs. metallic copper) of product per acre per year.
	Apple Scab Fire Blight Phytophthora Root Rot Verticillium Wilt	3 49.7 to 862 (.198 to .248)(0.012 to 0.032)	N/A only 1 application permitted per season.	Make 1 application between silver-tip and green-tip. Apply as a full cover spray for early season disease suppression. **Note:** Moderate to severe crop injury may occur from late application; discontinue use when green-tip reaches 0.5 inch. Do not apply more than 31.37 gals. (16 lbs. metallic copper) of product per acre per year.
31.35 gals. (18 lbs.)	Apple Scab	18.6 to 24.8 (.074 to .10)	5	Extended spray schedule where fruit finish is not a concern. Continued applications may be made at 5- to 7-day intervals between 0.5 inch green-tip and first cover spray. **Note:** Moderate to severe crop injury may result from this extended spray schedule. It is not intended for fresh market apples or for apples where fruit finish is a concern as it is likely to cause fruit russeting. Do not apply more than 31.37 gals. (16 lbs. metallic copper) of product per acre per year.
	Fire Blight	18.6 to 24.8 (.074 to .10)	5	

	Collar Rot* Crown Rot*	31 (.124)	N/A only 1 application permitted per season.	Apply as a drench on the lower trunk area of each tree. Apply in early spring or in fall after harvest for best results. Do not apply to foliage or fruit. Only 1 application per year. Do not apply more than 31.37 gals. (16 lbs. metallic copper) of product per acre per year.
Avocado 37.03 gals. (18.9 lbs.)	Anthracnose or Black Spot Cercospora Blotch or Spot* Scab*	49.7 to 62 (.198 to .248)	14	Apply when bloom buds begin to swell and continue application at bi-monthly intervals for 5 to 6 applications. Use the higher rates when conditions favor disease. Do not apply more than 37.06 gals. (18.9 lbs. metallic copper) of product per acre per year.
Banana* 37.02 gals. (18.9 lbs.)	Sigatoka (Black and Yellow)	18.6 (.074)	7	Apply by air in 3 gals. of water. If needed, agricultural-type spray oil may be added. Apply on a 7- to 14-day schedule throughout the wet season. Apply at 21-day intervals during dry periods. Do not apply more than 37.06 gals. (18.9 lbs. metallic copper) of product per acre per year.
	Black Pitting	31 (.124)	7	Mix product in 100 gals. of water. Apply by spray to the fruit stem and the basal portion of the leaf crown. Apply during the first and second weeks after fruit emergence. Do not apply more than 37.06 gals. (18.9 lbs. metallic copper) of product per acre per year.
Cacao* 30.86 gals. (15.75 lbs.)	Black Pod	18.6 to 62 (.074 to .248)	14	Begin applications at the start of the rainy season and continue while infection conditions persist. Do not apply more than 30.88 gals. (15.75 lbs. metallic copper) of product per acre per year.
Chestnut 16.45 gals. (8.4 lbs.)	Chestnut Blight Leaf Spot (*Mycosphaerella maculiformis*) Phytophthora Root Rot Powdery Mildew (*Sphaerotheca fuliginea*)	27.2 (.108)	14	Apply first spray after flowering and before onset of long rains and then at 14- to 28-day intervals until picking. Do not apply more than 16.47 gals. (8.4 lbs. metallic copper) of product per acre per year.
Coffee* 24.69 gals. (12.6 lbs.)	Coffee Berry Disease (*Colletotrichum coffeanum*)	37.2 to 62 (.149 to .248)	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 conditions favor disease. Do not apply more than 24.71 gals. (12.6 lbs. metallic copper) of product per acre per year.
	Bacterial Blight (*Pseudomonas syringae*)	37.2 to 62 (.149 to .248)	14	Begin spray program before the onset of long rainy periods and continue throughout the rainy season at 14- to 21-day intervals. The critical time for spraying to control 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. Do not apply more than 24.71 gals. (12.6 lbs. metallic copper) of product per acre per year.
	Leaf Rust (*Hemileia vastatrix*)	18.6 to 31 (.074 to .124)	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. Do not apply more than 24.71 gals. (12.6 lbs. metallic copper) of product per acre per year.
	Iron Spot (*Cercospora coffeicola*) Pink Disease (*Corticium salmonicolor*)	18.6 (.074)	14	Use concentrate or dilute spray. Begin treatment at the start of wet season and continue at monthly intervals for 3 applications. Do not apply more than 24.71 gals. (12.6 lbs. metallic copper) of product per acre per year.
Filbert* (OR and WA only)	Bacterial Blight	62 to 150.4 (.248 to .60)	14	Apply as a post-harvest spray. In seasons of heavy rainfall, apply a second spray when three-fourths of the leaves have dropped. Use the higher rates when rainfall is heavy and disease pressure is high. If needed,

				agricultural type spray oil may be added. Do not apply more than 35.29 gals. (18 lbs. metallic copper) of product per acre per year.
35.27 gals. (18 lbs.)	Eastern Filbert Blight	62 to 150.4 (.248 to .60)	14	Apply as a dilute spray in adequate water for thorough coverage. Make applications starting at bud swell to bud break and continue at 14-day intervals or as needed until early May. Thorough coverage is essential. Use the higher specified rates when rainfall is heavy and disease pressure is high. If needed, agricultural type spray oil may be added. Do not apply more than 35.29 gals. (18 lbs. metallic copper) of product per acre per year.
Mango* 94.05 gals. (48 lbs.)	Anthracnose Bacterial Spot (*Xanthomonas campestris*) Black Banded Disease (*Rhinocladium corticolum*) Mango Bacterial Canker Disease (*Xanthomonas campestris*) Phoma Blight (*Phoma glomerata*) Powdery Mildew Red Rust of Mango (*Cephaleuros* spp.) Scab (*Elsinoe mangiferae*)	37.2 to 62 (.149 to .248)	7	Apply bi-monthly after fruit set until harvest. Use higher rates when rainfall is heavy and disease pressure is high. Do not apply more than 96.12 gals. (48 lbs. metallic copper) of product per acre per year.
Olive 35.27 gals. (18 lbs.)	*Cercospora* Leaf Spot Olive Knot Peacock Spot *Phytophthora* Crown and Root Rot	50.4 to 83.4 (.201 to .333)	30	Make first application before winter rains begin. A second application in early spring must be made if disease is severe. Apply the higher rates for heavy disease pressure or when conditions favor disease development. Do not apply more than 35.29 gals. (18 lbs. metallic copper) of product per acre per year.
Papaya 41.54 gals. (21.2 lbs.)	Anthracnose* Corynespora Leaf Spot Phytophthora Blight Powdery Mildew	25.2 to 50.4 (.101 to .201)	7	Apply before disease appears. Repeat at 10 to 14-day intervals under light disease pressure. Shorten spray intervals to 7 days under heavy disease pressure. Addition of a spreader is desirable. Use the higher specified rates when disease is severe. Do not apply more than 41.57 gals. (21.2 lbs. metallic copper) of product per acre per year.
Persimmon 10.78 gals. (5.5 lbs.)	Anthracnose Armillaria Root Rot (*Armillaria mellea*) Canker Gray Mold (*Botrytis cinerea*) Leaf Spots and Blights, Root, and Crown Rot (*Phytophthora* spp.) Verticillium Wilt	15.5 (.062)	14	Apply every 14 days after beginning of fruit set until harvest. Do not apply more than 10.78 gals. (5.5 lbs. metallic copper) of product per acre per year.
Peach, Nectarine 35.27 gals. (18 lbs.)	Anthracnose Bacterial Leaf Spot Black Spot Blossom Brown Rot Fire Blight Peach Leaf Curl Powdery Mildew Rust	49.7 to 99.9 (.198 to .399)	7	Post-bloom application applied at first and second cover sprays. **Note:** Do not spray 3 weeks prior to harvest. Use only labeled rates. Spotting of leaves and defoliation may occur from use in cover sprays. Do not apply more than 35.29 gals. (18 lbs. metallic copper) of product per acre per year.
Pear	Blossom Blight (*Pseudomonas*)	18.6 (.074)	7	Apply before Fall rains and again during dormancy before Spring growth starts. Do not apply more than 12.12 gals. (6 lbs. metallic copper) of product per acre per year.
  11.76 gals. (6 lbs.)	Fire Blight	18.6 (.074)	5	Apply at 5-day intervals throughout the bloom period. **Note:** Russeting may occur in copper sensitive varieties. Excessive dosages may cause fruit russet on any variety. Do not

				apply more than 11.76 gals. (6 lbs. metallic copper) of product per acre per year.
Pecan*	Kernel Rot Shuck Rot (*Phytophthora cactorum*) Zonate Leaf Spot (*Cristulariella pyramidalis*)	18.6 to 31 (.074 to .124)	14	For suppression, apply in sufficient water to ensure complete spray coverage at 2- to 4-week intervals starting at kernel growth and continue until shucks open. Use the higher rates and shorter spray intervals if frequent rainfall occurs. Do not apply more than 12.35 gals. (6.3 lbs. metallic copper) of product per acre per year.
12.34 gals. (6.3 lbs.)	Ball Moss Spanish Moss	37.2 to 62 (.149 to .248)	14	Apply in 100 gals. of water in the spring when ball moss is actively growing, using 1.5 gals. of spray per foot of tree height. Make sure to wet ball moss tufts thoroughly. The addition of a non-ionic surfactant will improve control. A second application will be required after 12 months. Do not apply more than 12.35 gals. (6.3 lbs. metallic copper) of product per acre per year.
Pistachio 16.45 gals. (8.4 lbs.)	Botryosphaeria Panicle and Shoot Blight* Botrytis Blight* Late Blight (*Alternaria alternata*) Septoria Leaf Blight	31 to 62 (.124 to .248)	14	Make initial application at bud swell and repeat on a 14- to 28-day schedule. If disease conditions are severe, use the higher rates and shorter spray intervals. Do not apply more than 16.47 gals. (8.4 lbs. metallic copper) of product per acre per year.
Quince* 31.35 gals. (16 lbs.)	Fire Blight	18.6 (.074)	5	Apply at 5-day intervals throughout the bloom period. Apply in adequate water for thorough coverage. Do not apply more than 31.37 gals. (16 lbs. metallic copper) of product per acre per year.
Walnut 62.70 gals. (32 lbs.)	Walnut Blight	37.2 to 62 (.149 to .248)	7	Apply at first spray at early pre-bloom prior to or when catkins are partially expanded. Make additional applications during bloom and early nutlet stage or as needed when frequent rainfall or extended periods of moisture occur. Thorough coverage of catkins, leaves and nutlets is essential for effective control. **Note:** Adequate control may not be obtained when copper tolerant species of *Xanthomonas* bacteria are present. Do not apply more than 62.75 gals. (32 lbs. metallic copper) of product per acre per year.
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VEGETABLES
(Non-Leafy and Leafy)

Crop	Disease	Copper Sulfate Pentahydrate 20.5% SC Rate - Fl. Oz. (Lb. Cu^{2+}) per Acre	Minimum Retreatment Interval (Days)	Directions
Artichoke (Globe) 5.19 gals. (2.65 lbs.)	Botrytis Blight Powdery Mildew	8.23 (.033)	7	For protective sprays, make first application when plants are 6 inches high; repeat on a 7- to 10-day schedule depending on environmental conditions. Do not apply more than 5.19 gals. (2.65 lbs. metallic copper) of product per acre per year.
Asparagus 9.80 gals. (5.0 lbs.)	Anthracnose *Cercospora* Blight Fusarium Stem and Crown Rot Fusarium Wilt and Root Rot Rust (P*uccinia asparagi*) Grey Mold Leaf Spot Shoot Blight	15.5 (.062)	10	Begin applications when conditions first favor disease development and repeat at 10- to 14-day intervals. Do not apply more than 9.80 gals. (5 lbs. metallic copper) of product per acre per year.
Bean (Dry, Green)	Brown Spot Common Blight Halo Blight	18.6 to 24.8 (.074 to .10)	7	For protective sprays, make first application when plants are 6 inches high; repeat on a 7- to 10-day schedule depending on

9.28 gals. (4.74 lbs.)				environmental conditions. Use the higher rates for more severe disease. Do not apply more than 9.29 gals. (4.74 lbs. metallic copper) of product per acre per year.
Beet (Table Beet, Beet Greens) 15.39 gals. (7.86 lbs.)	*Cercospora* Leaf Spot Downey Mildew Leaf Blight	18.6 to 31 (.074 to .124)	10	Begin applications when conditions first favor disease development and repeat at 10- to 14-day intervals. Use the higher rates when conditions favor disease. Do not apply more than 15.41 gals. (7.86 lbs. metallic copper) of product per acre per year.
Carrot 9.80 gals. (5 lbs.)	*Alternaria* Leaf Spot *Cercospora* Leaf Spot	18.6 (.074)	7	Begin applications when disease first threatens and repeat at 7- to 14-day intervals depending on disease severity. Do not apply more than 9.80 gals. (5 lbs. metallic copper) of product per acre per year.
Celery, Celeriac 10.38 gals. (5.3 lbs.)	Bacterial Blight *Cercospora* Early Blight Septoria Late Blight	18.6 (.074)	7	Begin applications as soon as plants are first established in the field, repeating at 7-day intervals depending on disease severity and environmental conditions. Do not apply more than 10.39 gals. (5.3 lbs. metallic copper) of product per acre per year.
Crucifers (Broccoli, Brussel Sprout, Cabbage, Cauliflower, Collard Greens, Mustard Greens, Turnip Greens) 5.19 gals. (2.65 lbs.)	Black Leaf Spot (*Alternaria*) Black Rot (*Xanthomonas*) *Cercospora* Leaf Spot Downy Mildew	18.6 to 24.8 (.074 to .10)	7	Begin application after transplants are set in the field or shortly after emergence of field seeded crops or when conditions favor disease development. Use the higher rates when conditions favor disease. **Note:** Reddening of older leaves may occur on Broccoli and a flecking of wrapper leaves may occur on cabbage. Do not apply more than 5.20 gals. (2.65 lbs. metallic copper) of product per acre per year.
Cucurbits (Cantaloupe, Cucumber, Honeydew, Muskmelon, Pumpkin, Squash, Bitter Gourd, Melon Gourd (Summer and Winter), Watermelon 10.30 gals. (5.25 lbs.)	Alternaria Leaf Spot Angular Leaf Spot Anthracnose Downey Mildew Gummy Stem Blight* Phomopsis Powdery Mildew Watermelon Bacterial Fruit Blotch (Suppression)	18.6 to 24.8 (.074 to .10)	5	Begin applications prior to disease development and continue while conditions are favorable for disease development. Repeat at 5- to 7-day intervals. Use the higher rates when conditions favor disease. **Note:** crop injury may occur from application at higher rates and shorter intervals. Discontinue use if injury occurs. Do not apply more than 10.29 gals. (5.25 lbs. metallic copper) of product per acre per year.
Eggplant 15.47 gals. (7.9 lbs.)	Alternaria Blight Anthracnose Phomopsis* Phytophthora Blight	18.6 (.074)	7	Begin applications prior to development of disease symptoms. Repeat sprays at 7- to 10-day intervals depending on disease severity. Do not apply more than 15.49 gals. (7.9 lbs. metallic copper) of product per acre per year.
Leek 11.76 gals. (6.0 lbs.)	Leek Rust Mildew (*Peronospora destructor*) White Tip (*Phytophthora porri*)	15.5 (.062)	7	Begin applications prior to development of disease symptoms. Repeat sprays at 7- to 10-day intervals depending on disease severity. Do not apply more than 11.76 gals. (6 lbs. metallic copper) of product per acre per year.
Lettuce (Endive, Escarole) 15.68 gals. (8.0 lbs.)	Anthracnose Alternaria Bacterial Leaf Spot Cercospora and Septoria Leaf Spot Damping Off Head Rot and Soft Rot Downy Mildew (*Bremia lactucae*) Gray Mold Rust Powdery Mildew Ring Spot Southern Blight	15.5 (.062)	5	Begin treatment when disease first threatens and repeat every 5 to 10 days depending on disease severity. Do not apply more than 15.69 gals. (8 lbs. metallic copper) of product per acre per year.

	Wilt			
Okra* 10.29 gals. (5.25 lbs.)	Anthracnose Bacterial Leaf Spot Cercospora Leaf Spot Fusarium Wilt Leaf Spots Pod Spot Powdery Mildew	18.6 to 31 (.074 to .124)	5	Begin treatment when disease first threatens and repeat every 5 to 10 days depending on disease severity. Use the higher rates and shorter spray intervals when conditions favor disease. Do not apply more than 10.29 gals. (5.25 lbs. metallic copper) of product per acre per year.
Onion, Garlic 11.76 gals. (6.0 lbs.)	Bacterial Blight Downy Mildew Purple Blotch*	18.6 (.074)	7	Begin when plants are 4 to 6 inches high and repeat at weekly intervals. Minimum retreatment interval is 7 days. Use the higher rates when conditions favor disease. Do not apply more than 11.76 gals. (6 lbs. metallic copper) of product per acre per year.
Pea 7.73 gals. (3.95 lbs.)	Powdery Mildew Downey Mildew Leaf Spot	18.6 to 24.8 (.074 to .10)	7	Begin application when disease symptoms first appear and repeat at weekly intervals. Minimum retreatment interval is 7 days. Use the higher rates when conditions favor disease. Do not apply more than 7.74 gals. (3.95 lbs. metallic copper) of product per acre per year.
Pepper (Bell, Chili) 23.21 gals. (11.85 lbs.)	Anthracnose* Bacterial Spot Cercospora Leaf Spot	15.1 to 29.1 (.060 to .116)	3	Begin application when conditions favor disease development and repeat at 3- to 10-day intervals depending on disease severity. Use the higher rates when conditions favor disease. Do not apply more than 23.24 gals. (11.85 lbs. metallic copper) of product per acre per year.
Rhubarb 7.73 gals. (3.95 lbs.)	Crown Rot Downy Mildew (*Peronospora jaapiana*) Leaf Spot Rust	12.2 (.049)	7	Begin application when disease symptoms first appear and repeat at weekly intervals. Minimum retreatment interval is 7 days. Do not apply more than 7.75 gals. (3.95 lbs. metallic copper) of product per acre per year.
Rutabaga 15.39 (7.86 lbs.)	*Alternaria* Blight Anthracnose Club Root Downey Mildew Powdery Mildew Root Knot White Rust White Rot	20.3 (.081)	10	Begin applications when conditions first favor disease development and repeat at 10- to 14-day intervals. Do not apply more than 15.41 gals. (7.86 lbs. metallic copper) of product per acre per year.
Soybean 9.28 gals. (4.74 lbs.)	Brown Spot *Cercospora* Leaf Spot Downy Mildew Frogeye Leaf Spot *Phytophthora* Stem and Root Rot Pod and Stem Blight Stem Rot	12.2 (.049)	7	For protective sprays, make first application when plants are 6 inches high; repeat on a 7- to 10-day schedule depending on environmental conditions. Do not apply more than 9.29 gals. (4.74 lbs. metallic copper) of product per acre per year.
Spinach 7.73 gals. (3.95 lbs.)	Anthracnose Blue Mold* *Cercospora* Leaf Spot Downey Mildew White Rust	18.6 to 24.8 (.074 to .10)	7	Begin application when disease first appears or when conditions favor disease development. Repeat at 7- to 10-day intervals. Use the higher rates when conditions favor disease **Note:** Flecking may occur in spinach leaves. Do not apply more than 7.75 gals. (3.95 lbs. metallic copper) of product per acre per year.
Tomato (For Fresh Market 15.68 gals. (8 lbs.)	Anthracnose Bacterial Spot Bacterial Speck Early Blight Gray Leaf Mold Late Blight Septoria Leaf Spot	24.8 (.10)	3	Begin applications when disease first appears and repeat at 3- to 10-day intervals depending on disease severity. Do not apply more than 15.69 gals. (8 lbs. metallic copper) of product per acre per year.
Tomato (For Processing) 34.09 gals.	Anthracnose Bacterial Spot Bacterial Speck Early Blight Gray Leaf Mold	18.6 to 31 (.074 to .124)	3	Begin applications when disease and repeat at 3- to 10-day intervals depending on disease severity. Use the higher rates when conditions favor disease. Do not apply more

(17.4 lbs.)	Late Blight Septoria Leaf Spot			than 34.12 gals. (17.4 lbs. metallic copper) of product per acre per year.
Watercress* 4.15 gals. (2.12 lbs.)	*Cercospora* Leaf Spot	18.6 (.074)	7	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.
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VINES

Crop	Disease	Copper Sulfate Pentahydrate 20.5% SC Rate - Fl. Oz. (Lb. Cu^{2+}) per Acre	Minimum Retreatment Interval (Days)	Directions
Grape 39.19 gals. (20 lbs.)	Black Rot* Downy Mildew Phomopsis Powdery Mildew	18.6 to 31 (.074 to .124)	3	Begin applications at bud break with subsequent applications throughout the season depending on disease severity. Use the higher rates when conditions favor disease. **Note:** Foliage injury may occur on copper sensitive varieties such as Concord, Delaware, Niagara, and Rosette. Do not apply more than 39.22 gals. (20 lbs. metallic copper) of product per acre per year.
Hops* 12.34 gals. (2.65 lbs.)	Downy Mildew Powdery Mildew (*Podosphaera macularis*)	18.6 (.074)	10	Make crown treatments after pruning, but before training. Additional treatments are needed on 10-day intervals. **Note:** Discontinue use 2 weeks before harvest. Do not apply more than 5.20 gals. (2.65 lbs. metallic copper) of product per acre per year.
Kiwi*	Bacterial Diseases *(Erwinia herbicola, Pseudomonas fluorescens, Pseudomonas syringae)*	37.2 (.148)	30	Apply with 200 gals. of water per acre. Make applications in a monthly basis. A maximum of 3 applications may be made per 12-month period. Do not apply more than 12.35 gals. (6.3 lbs. metallic copper) of product per acre per year.
Passion Fruit 18.49 gals. (6.3 lbs.)	Anthracnose Fusarium Wilt Root, Crown, and Collar Rot	36.7 (.146)	7	Begin application when plants are established in the field. Repeat every 7 to 10 days depending on disease conditions. Do not apply more than 18.51 gals. (9.44 lbs. metallic copper) of product per acre per year.
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MISCELLANEOUS

Crop	Disease	Copper Sulfate Pentahydrate 20.5% SC Rate - Fl. Oz. (Lb. Cu^{2+}) per Acre	Minimum Retreatment Interval (Days)	Directions
Atemoya*, Sugar Apple (Annona)* 24.69 gals. (12.6 lbs.)	Anthracnose	24.8 to 37.2 (.10 to .149)	7	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Minimum retreatment interval is 7 days. Apply in sufficient water for thorough coverage. Use the higher rates for severe disease. Do not apply more than 24.71 gals. (12.6 lbs. metallic copper) of product per acre per year.
Carambola (Star Fruit)* 20.58 gals.	Anthracnose	37.2 to 62 (.149 to .248)	7	Make initial application before flowering and repeat on a weekly schedule until just before harvest. Minimum retreatment interval is 7 days. Apply in sufficient water for thorough coverage. Use the higher rates for severe

(10.5 lbs.)				disease. Do not apply more than 20.59 gals. (10.5 lbs. metallic copper) of product per acre per year.
Chives 5.19 gals. (2.65 lbs.)	Downy Mildew	18.6 (.074)	7	Begin application when plants are established in the field. Repeat every 7 to 10 days depending on disease conditions. Do not apply more than 5.20 gals. (2.65 lbs. metallic copper) of product per acre per year.
Coriander (Cilantro) 5.19 gals. (2.65 lbs.)	Bacterial Leaf Spot Powdery Mildew	8.23 (.033)	10	Begin applications when conditions first favor disease development and repeat at 10- to 14-day intervals. Do not apply more than 5.20 gals. (2.65 lbs. metallic copper) of product per acre per year.
Dill 7.73 gals. (3.95 lbs.)	Phoma Leaf Spot Rhizoctonia Foliage Blight	18.6 to 24.8 (.074 to .10)	7	Begin application when plants are first established in the field and repeat at 7- to 10-day intervals depending on disease severity and environmental conditions. Use the higher rates for severe disease. Do not apply more than 7.75 gals. (3.95 lbs. metallic copper) of product per acre per year.
Ginseng 10.29 gals. (5.25 lbs.)	Alternaria Leaf Blight Damping Off Fusarium Wilt Phytophthora Blight Stem Blight	16.3 (.065)	7	Begin application when plants are first established in the field and repeat at 7- to 10-day intervals depending on disease severity and environmental conditions. Do not apply more than 10.29 gals. (5.25 lbs. metallic copper) of product per acre per year.
Guava 9.63 gals. (4.92 lbs.)	Anthracnose Red Algae	24.8 to 37.2 (.10 to .149)	7	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Minimum retreatment interval is 7 days. Apply in sufficient water for thorough coverage. Use the higher rates for severe disease. Do not apply more than 9.65 gals. (4.92 lbs. metallic copper) of product per acre per year.
Litchi* 9.63 gals. (4.92 lbs.)	Anthracnose	24.8 to 37.2 (.10 to .149)	7	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Minimum retreatment interval is 7 days. Use the higher rates for severe disease. Do not apply more than 9.65 gals. (4.92 lbs. metallic copper) of product per acre per year.
Macadamia 18.49 gals. (9.44 lbs.)	Anthracnose	37.2 to628 (.149 to .248)	7	Initiate sprays at first sign of flowering and repeat on a weekly schedule until just before harvest. Minimum retreatment interval is 7 days. Apply in sufficient water for thorough coverage. Use the higher rates for severe disease. Do not apply more than 18.51 gals. (9.44 lbs. metallic copper) of product per acre per year.
	Phytophthora Blight (*P. capsici*) Raceme Blight (*Botrytis cinerea*)	37.2 to 62 (.149 to .248)	7	Apply during Raceme development and bloom periods. Apply in sufficient water for thorough coverage. Use the higher rates when conditions favor disease. Do not apply more than 18.51 gals. (9.44 lbs. metallic copper) of product per acre per year.
Mamey Sapote 16.45 gals. (8.4 lbs.)	Algal Leaf Spot Anthracnose	37.2 to 62 (.149 to .248)	14	Apply when conditions favor disease development. Repeat on a 14- to 30-day schedule as disease severity and environmental conditions dictate. Use the higher rates when conditions favor disease. Do not apply more than 16.96 gals. (8.4 lbs. metallic copper) of product per acre per year.
Mint 5.19 gals. (2.65 lbs.)	*Alternaria* Leaf Spot Anthracnose Fusarium Wilt Powdery Mildew Rust Verticillium Wilt	8.23 (.033)	10	Begin applications when conditions first favor disease development and repeat at 10- to 14-day intervals. Do not apply more than 5.20 gals. (2.65 lbs. metallic copper) of product per acre per year.

Papaya* 41.54 gals. (21.2 lbs.)	Anthracnose	25.2 to 50.4 (.101 to .201)	7	Apply before disease appears. Repeat at 10- to 14-day intervals under light disease pressure. Shorten spray intervals to 7 days under heavy disease pressure. Addition of a spreader is desirable. Use the higher specified rates when disease is severe. Do not apply more than 42.82 gals. (21.2 lbs. metallic copper) of product per acre per year.
Parsley 3.92 gals. (2 lbs.)	*Alternaria* and Bacterial Leaf Spot Bacterial Blight* *Pseudomonas* sp. Crown and Root Rot Downey Mildew Fusarium Root Rot Gray Mold Leaf Spot Powdery Mildew Septoria Leaf spot	15.5 (.062)	10	Begin applications when conditions first favor disease development and repeat at 10- to 14-day intervals. Do not apply more than 3.92 gals. (2 lbs. metallic copper) of product per acre per year.
Rosemary 5.19 gals. (2.65 lbs.)	Botrytis Blight Powdery Mildew Root Rot	8.23 (.033)	10	Begin applications when conditions first favor disease development and repeat at 10- to 14-day intervals. Do not apply more than 5.20 gals. (2.65 lbs. metallic copper) of product per acre per year.
Tobacco 7.84 gals. (4 lbs.)	Angular Leaf Spot Brown Spot/Red Rust (*Alternaria longipes*) Gray Mold (*Botrytis cinerea*) Downy Mildew (*Peronospora tabacina*) Powdery Mildew Frog Eye (*Cercospora nicotianae*) *Fusarium* Wilt Leaf Spot (*Ascochyta nicotianae*) Southern Blight Verticillium Wilt Wildfire	31 (.124)	10	Make initial application just before flowering and repeat 10- to 14-day intervals until just before harvest. Apply in sufficient water for thorough coverage. Do not apply more than 7.84 gals. (4 lbs. metallic copper) of product per acre per year.
*Not Registered for Use By California.				

ORNAMENTALS

Spray foliage thoroughly for good coverage. Re-application rates and intervals can vary according to disease severity and adversity of environmental conditions. Lower rates may be as effective as higher rates and must be tried first. Routine preventive programs may be maintained using lower rates.

Use of low volume equipment is effective against Botrytis but may not be effective against established Powdery mildew and/or Xanthomonas infections.

Applications on actively growing tissues may be more effective than applications on dormant tissues.

USE PRECAUTION:

- Rates above 14.6 fl. oz. (0.058 lb. metallic copper) of this product per 100 gals. of water may damage some tender, open blooms.

USE RESTRICTIONS:

- **On Easter Lilies:**
  - Do not apply more than 2.5 lbs. of copper (4.90 gals. of this product) per acre per application.
  - Do not apply more than 75 lbs. of copper (146.96 gals. of this product) per acre per year.
  - Minimum retreatment interval is 7 days.
  - Do not apply any additional pesticide containing copper to this land for 36 months.
- **On All Other Ornamentals:**
  - Do not apply more than 2 lbs. of copper (3.88 gals.) of this product) per per acre application.
  - Do not apply more than 20 lbs. of copper (39.19 gals. of this product) per acre per year.
  - Minimum retreatment interval is 7 days.

{Note to reviewer: [Text] in brackets denotes optional text.}

ANNUAL AND PERENNIAL BEDDING PLANTS

Plant	Disease(s)/Pathogens	Copper Sulfate Pentahydrate 20.5% SC Rate - Fl. Oz. (Lb. Cu^{2+}) per Arce
Alyssum	Botrytis, Downy Mildew	12.6 to 19.4 (.050 to .078)
Argyranthemum*	Botrytis, Erwinia	12.6 to 19.4 (.050 to .078))
Begonia	Botrytis	12.6 to 19.4 (.050 to .078)
	Powdery Mildew, Xanthomonas	14.6 to 29.1 (.058 to .116)
Chrysanthemum	Botrytis, Pseudomonas	14.6 to 24.3 (.058 to .097)
Daylily	Botrytis	12.6 to 19.4 (.050 to .078)
	Erwinia, Powdery Mildew	14.6 to 24.3 (.058 to .097)
Dusty Miller	Alternaria	14.6 to 24.3 (.058 to .097))
	Botrytis	12.6 to 19.4 (.050 to .078)
Fuchsia	Botrytis	12.6 to 19.4 (.050 to .078)
	Powdery Mildew	12.6 to 24.3 (.050 to .097)
Geranium	Botrytis, Rust (Preventative)	14.6to 819.4(.058 to .078)
	Preventative: Pseudomonas, Xanthomonas	14.6 to 43.7 (.058 to .174)
	Therapeutic: Pseudomonas, Xanthomonas	48.5 (.194)
	Therapeutic: Rust	24.3 to 38.8 (.097 to .155)
Hollyhock*	Botrytis	12.6 to 19.4 (.050 to .078)
	Powdery Mildew, Rust	14.6 to 24.3 (.058 to .097)
Hosta*	Botrytis	14.6 to 19.4 (.058 to .078)
	Erwinia	14.6 to 29.1 (.058 to .116)
Impatiens	Alternaria	14.6 to 34 (.058 to .136)
	Botrytis	12.6 to 14.6 (.050 to .058)
	Phytophthora	14.6 to 19.4 (.058 to .078)
	Powdery Mildew	12.6 to 24.3 (.050 to .097)
	Pseudomonas	14.6 to 34 (.058 to .136)
Lisianthus	Botrytis	12.6 to 19.4 (.050 to .078)
	Erwinia, Pseudomonas, Xanthomonas	3 to 8 (.050 to .097)
New Guinea Impatiens	Botrytis	12.6 to 24.3 (.050 to .058)
	Powdery Mildew	12.6 to 19.4 (.050 to .078)
Pachysandra*	Botrytis	12.6 to 14.6 (.050 to .058)
	Volutella	12.6 to 24.3 (.050 to .097)
Pansy	Botrytis	3 to 8 (.050 to .078)
	Cercospora, Phytophthora	14.6 to 19.4 (.058 to .078)
Periwinkle	Botrytis	12.6 to 19.4 (.050 to .078)
	Phytophthora	14.6 to 19.4 (.058 to .078)
Ranunculus	Bacterial Blight, Botrytis	12.6 to 19.4 (.050 to .078)
	Powdery Mildew	14.6 to 24.3 (.058 to .097)
Snapdragon	Botrytis	12.6 to 19.4 (.050 to .078)
	Downy Mildew, Rust	12.6 to 24.3 (.050 to .097)
Zinnia	Botrytis	12.6 to 19.4 (.050 to .078)
	Powdery Mildew	14.6 to 29.1 (.058 to .116)
	Pseudomonas, Xanthomonas	12.6 to 24.3 (.050 to .097)
Additional annuals and perennials[1]*	Botrytis	12.6 to 19.4 (.050 to .078)
	Downy Mildew	14.6 to 29.1 (.058 to .116)
	Powdery Mildew, Pseudomonas	14.6 to 24.3 (.058 to .097)

[1]Additional annuals and perennials include: Anemone, Aster, Bacopa, Baptista, Carnation, Coleus, Columbine, Coneflower, Coreopsis, Cuphea, Dahlia, Daisy, Dianthus, Delphinium, Echinacea, Ipomoea, Lantana, Lead Plant, Liatris, Lobelia, Lupine, Marigold, Monarda, Ornamental Grasses, Pentas, Petunia, Phlox, Poppy, Prairie Smoke, Primrose, Pulmonaria, Rudbeckia, Salvia, Scabiosa, Sedum, Silphium, Verbena, Veronica, and Vinca, Viola.

*Not Registered for Use By California.

{Note to reviewer: [Text] in brackets denotes optional text.}

CUT FLOWERS

Plant	Disease	Copper Sulfate Pentahydrate 20.5% SC Rate - Fl. Oz. (Lb. Cu^{2+}) per Arce
Alstroemeria*	Botrytis	12.6 to 14.6 (.050 to .058)
Carnation*	Botrytis	12.6 to 19.4 (.050 to .078)
Chrysanthemum*	Botrytis	14.6 to 24.3 (.058 to .097)
Delphinium*	Botrytis	3 to 8 (.050 to .058)
Freesia*	Botrytis	12.6 to 14.6 (.050 to .058)
Gerbera	Botrytis	12.6 to 24.3(.050 to .097)
Gladiola	Botrytis	12.6 to 14.6 (.050 to .058)
Lisianthus	Botrytis	12.6 to 19.4 (.050 to .078)
Orchid	Botrytis	12.6 to 14.6 (.050 to .058)
Rose[1]	Botrytis	14.6 to 48.5 (.050 to .194)
Snapdragon*	Botrytis	12.6 to 19.4 (.050 to .078)
Sweetpea*	Botrytis	12.6 to 14.6 (.050 to .058)

[1]On Roses, rates up to 70 fl. oz. (0.252 lb. metallic copper) of this product per 100 gals. of water may be used against Powdery mildew if no blooms are open.
*Not Registered for Use By California.

NURSERY PLANTS

Plant	Disease(s)/Pathogens	Copper Sulfate Pentahydrate 20.5% SC Rate - Fl. Oz. (Lb. Cu^{2+}) per Arce
Azalea	Anthracnose	14.6 to 24.3 (.058 to .097)
	Botrytis	12.6 to 24.3 (.050 to .097)
	Cylindrocladium	14.6 to 34.0 (.058 to .136)
	Phytophthora	19.4 to 24.3 (.078 to .097)
Buxus	Volutella	14.6 to 24.3 (.058 to .097)
Cherry Laurel*	Xanthomonas	14.6 to 34.0 (.078 to .136)
Conifers*	Botrytis	12.6 to 24.3 (.050 to .097)
	Diplodia	9.7 to 12.6 (.038 to .050)
Crape Myrtle*	Botrytis	12.6 to 24.3 (.050 to .097)
	Powdery Mildew	19.4 to 29.1 (.078 to .116)
Dogwood	Anthracnose, Powdery Mildew	19.4 to 29.1 (.078 to .116)
	Botrytis	12.6 to 24.3 (.050 to .097)
Elm*	Erwinia	19.4 to 38.8 (.078 to .155)
Euonymus	Anthracnose	14.6 to 29.1 (.058 to .116)
	Botrytis	12.6 to 24.3 (.050 to .097)
Hawthorn	Cedar Apple Rust	14.6 to 24.3 (.058 to .097)
Hydrangea	Botrytis, Powdery Mildew	12.6 to 24.3 (.050 to .097)
	Cercospora	14.6 to 24.3 (.058 to .097)
Indian Hawthorn	Botrytis	12.6 to 24.3 (.050 to .097)
	Cercospora	14.6 to 24.3 (.058 to .097)
	Entomosporium	14.6 to 29.1 (.058 to .116)
Japanese Maple	Botrytis	12.6 to 24.3 (.050 to .097)
	Pseudomonas, Verticillium	14.6 to 24.3 (.058 to .097)
Juniper	Phomopsis	12.6 to 24.3 (.050 to .097)
Leland Cypress	Cercospora	12.6 to 24.3 (.050 to .097)
Lilac	Botrytis, Pseudomonas	12.6 to 24.3 (.050 to .097)
	Powdery Mildew	14.6 to 24.3 (.058 to .097)
Nandina*	Xanthomonas	14.6 to 24.3 (.058 to .097)
Oak*	Anthracnose	34.0 (.136)
	Botrytis	12.6 to 24.3 (.050 to .097)
Oak (Trunk Spray)*	Phytophthora	29.1 to 43.7 (.058 to .174)
Photinia*	Entomosporium	14.6 to 29.1 (.058 to .116)
Rhododendron	Botrytis	12.6 to 24.3 (.050 to .097)
	Cylindrocladium	14.6 to 34.0 (.058 to .136)
	Phytophthora	19.4 to 34.0 (.078 to .136)
Rosaceae: Cotoneaster (Malus), Mountain Ash, Ornamental Crabapple, Ornamental Pear, Pyracantha	Apple Scab	38.8 (.155)
	Botrytis	12.6 to 24.3 (.050 to .097)
	Fireblight	19.4 to 38.8 (.078 to .155)
	Cylindrocladium	14.6 to 34.0 (.058 to .136)
	Phytophthora	14.6 to 29.1 (.058 to .116)
Rose[1]	Preventative: Black Spot, Powdery Mildew	14.6 to 29.1 (.058 to .116)
	Therapeutic: Black Spot, Powdery Mildew	34.0 to 48.5 (.136 to .194)
	Preventative: Botrytis, Cylindrocladium*, Downy Mildew	14.6 to 19.4 (.058 to .078)

{Note to reviewer: [Text] in brackets denotes optional text.}

	Therapeutic: Botrytis, Cylindrocladium*, Downy Mildew	24.3 to 48.5 (.097 to .194)
Ruscus*	Pseudomonas	12.6 to 24.3 (.050 to .097)
Sycamore*	Anthracnose	34.0 (.136)
	Botrytis	12.6 to 24.3 (.050 to .097)
Viburnum*	Botrytis	12.6 to 24.3 (.050 to .097)
	Cercospora	14.6 to 24.3 (.058 to .097)
	Phytophthora	19.4 to 24.3 (.078 to .097)
Additional Nursery Plants[2]	Botrytis, Rhizoctonia	12.6 to 24.3 (.050 to .097)
	Fireblight	19.4 to 38.8 (.078 to .155)
	Dothistroma*	19.4 to 38.8 (.078 to .155)
	Powdery Mildew	19.4 to 24.3 (.078 to .097)
	Pseudomonas	14.6 to 24.3 (.058 to .097)

[1]On Roses, rates up to 70 fl. oz. (0.252 lb. metallic copper) of this product per 100 gals. of water may be used against Powdery mildew if no blooms are open.

[2]Additional Nursery Plants include: **Shrubs/Vines*** - Barberry, Bougainvillea, Clematis, Cornus, Cotinus, Forsythia, Gardenia, Holly, Paeonia, Philadelphus, Physocarpus, Potentilla, Ribes, Rosa, Spirea, Weigela, Wisteria; **Deciduous*** - Acer, Amelanchier, Betula, Celtis, Cercis, Crataegus, Ficus, Fraxinus, Ginkgo, Gleditsia, Magnolia, Malus, Populus, Prunus, Pyrus, Tilia; **Conifers*** - Abies, Juniper, Picea, Pinus, Pittosporum, Pseudotsuga, Taxus, Thuja, Tsuga; **Non-Bearing Fruit Trees and Vines** – Apple (In California, Fireblight only), Pear, Grape (In California, Botrytis only), Citrus*.

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POTTED FLOWERING PLANTS

Plant	Disease(s)/Pathogens	Copper Sulfate Pentahydrate 20.5% SC Rate - Fl. Oz. (Lb. Cu^{2+}) per Arce
African Violet	Botrytis, Powdery Mildew	12.6 to 14.6 (.050 to .058)
Azalea	Botrytis	12.6 to 14.6 (.050 to .058)
	Colletotrichum	14.6 to 24.3 (.058 to .097)
	Cylindrocladium	14.6 to 34.0 (.058 to .136)
Calla Lily	Botrytis, Erwinia	12.6 to 19.4 (.050 to .078)
Chrysanthemum	Botrytis, Crown Gall, Erwinia, Powdery Mildew	14.6 to 24.3 (.058 to .097)
Cineraria*	Botrytis	12.6 to 19.4 (.050 to .078)
Cyclamen	Botrytis	14.6 to 19.4 (.058 to .078)
	Erwinia	14.6 to 19.4 (.058 to .078)
Daffodil*	Botrytis	12.6 to 19.4 (.050 to .078)
Easter Lily	Botrytis	12.6 to 19.4 (.050 to .078)
Exacum*	Botrytis	12.6 to 19.4 (.050 to .078)
Gerbera	Botrytis, Powdery Mildew	14.6 to 24.3 (.058 to .097)
Gloxinia*	Botrytis	12.6 to 19.4 (.050 to .078)
Holiday Cactus*	Botrytis	12.6 to 24.3 (.050 to .097)
	Erwinia, Pseudomonas, Xanthomonas	14.6 to 48.5 (.058 to .194)
Hyacinth*	Botrytis	12.6 to 19.4 (.050 to .078)
Hydrangea	Botrytis	12.6 to 24.3 (.050 to .097)
	Powdery Mildew	11.6 to 24.3 (.047 to .097)
Iris*	Botrytis	12.6 to 19.4 (.050 to .078)
	Erwinia	14.6 to 19.4 (.058 to .078)
Kalanchoe	Botrytis	14.6 to 24.3 (.058 to .097)
	Erwinia, Powdery Mildew	14.6 to 34.0 (.058 to .136)
Lisianthus	Botrytis	12.6 to 19.4 (.050 to .078)
Orchid	Botrytis	12.6 to 14.6 (.050 to .058)
	Erwinia, Pseudomonas, Xanthomonas	14.6 to 38.8 (.058 to .155)
Poinsettia	Botrytis	14.6 to 19.4 (.058 to .078)
	Scab	19.4 to 34.0 (.078 to .136)
	Powdery Mildew (Preventative)	14.6 to 19.4 (.058 to .078)
	Powdery Mildew (Therapeutic)	19.4 to 8 (.078 to .136)34.0
Primula	Botrytis	12.6 to 19.4 (.050 to .078)
	Erwinia	14.6 to 19.4 (.058 to .078)
Rose Bush[1]	Preventative: Black Spot, Powdery Mildew	14.6 to 29.1 (.058 to .116)
	Therapeutic: Black Spot, Powdery Mildew	34.0 to 48.5 (.136 to .194)
	Preventative: Botrytis, Cylindrocladium*, Downy Mildew	14.6 to 19.4 (.058 to .078)
	Therapeutic: Botrytis, Cylindrocladium*, Downy Mildew	24.3 to 48.5 (.097 to .194)
Tulip	Botrytis	12.6 to 19.4 (.050 to .078)

[1]On Roses, rates up to 70 fl. oz. (0.252 lb. metallic copper) of this product per 100 gals. of water may be used against Powdery mildew.
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{Note to reviewer: [Text] in brackets denotes optional text.}

TROPICAL FOLIAGE PLANTS

Plant	Disease(s)/Pathogens	Copper Sulfate Pentahydrate 20.5% SC Rate - Fl. Oz. (Lb. Cu^{2+}) per Arce
Dracaena	Rust	12.6 to 14.6 (.050 to .058)
Ferns*	Botrytis, Erwinia, Rhizoctonia	12.6 to 19.4 (.050 to .078)
Hibiscus	Botrytis	12.6 to 24.3 (.050 to .097)
	Pseudomonas	14.6 to 24.3 (.058 to .097)
	Xanthomonas	14.6 to 48.5 (.058 to .194)
Ivy	Botrytis	12.6 to 19.4 (.050 to .078)
	Xanthomonas	14.6 to 48.5 (.058 to .194)
Palms*	Botrytis, Erwinia	12.6 to 19.4 (.050 to .078)
	Pseudomonas, Xanthomonas	12.6 to 24.3 (.050 to .097)
Philodendron Selloum*	Fireblight	19.4 to 38.8 (.078 to .155)
Spathiphyllum	Botrytis	12.6 to 24.3 (.050 to .097)
	Cylindrocladium	14.6 to 24.3 (.058 to .097)
	Phytophthora	14.6 to 29.1 (.058 to .116)
Tropical Foliage	Botrytis, Powdery Mildew	12.6 to 48.5 (.050 to .097)
	Erwinia, Pseudomonas, Xanthomonas	19.4 to 48.5 (.078 to .194)
*Not Registered for Use By California.		

SPRAY AND DIP APPLICATIONS DURING PROPAGATION

Harvesting Cuttings on Site

When harvesting cuttings on site, spray or fog stock plants using the rates in the following table 1 to 2 days prior to taking cuttings. Spray cuttings to drench again at same rate 2 to 3 days after sticking in rooting medium or dip cuttings for a few seconds prior to sticking.

Delivered Rooted, Callused or Unrooted Cuttings

When using shipped-in rooted, callused or unrooted cuttings, spray cuttings to drench using the rates in the following table 2 to 3 days after planting or sticking, or dip cuttings for few seconds prior to sticking. Under severe disease pressure, repeat application in 7 to 10 days.

HERBACEOUS AND WOODY STOCK PLANTS AND CUTTINGS

Plant	Disease(s)/Pathogens	Copper Sulfate Pentahydrate 20.5% SC Rate - Fl. Oz. (Lb. Cu^{2+}) per Arce
Azalea	Botrytis*	12.6 to 24.3 (.050 to .097)
	Cylindrocladium	14.6 to 34 (.058 to .136)
Chrysanthemum	Botrytis*, Erwina	14.6 to 24.3 (.058 to .097)
Geranium	Botrytis	14.6 to 19.4 (.058 to .078)
	Xanthomonas	14.6 to 48.5 (.058 to .194)
Holiday Cactus*	Botrytis	12.6 to 24.3 (.050 to .097)
	Erwina	14.6 to 19.4 (.058 to .078)
Hydrangea	Botrytis*	12.6 to 24.3 (.050 to .097)
	Xanthomonas	14.6 to 24.3 (.058 to .097)
Lavender*	Botrytis	14.6 to 19.4 (.058 to .078)
Mini-Rose	Botrytis	14.6 to 19.4 (.058 to .078)
	Cylindrocladium	14.6 to 48.5 (.058 to .194)
Poinsettia	Botrytis	14.6 to 19.4 (.058 to .078)
	Erwina, Scab, Xanthomonas*	19.4 to 34 (0.78 to .136)
Tropical Foliage	Botrytis*	12.6 to 24.3 (.050 to .097)
	Cylindrocladium	14.6 to 24.3 (.058 to .097)
	Erwina	19.4 to 48.5 (.078 to .194)
*Not Registered for Use By California.		

{Note to reviewer: [Text] in brackets denotes optional text.}

POST-HARVEST DIP APPLICATIONS ON CUT FLOWERS

Dip cut flowers and buds for a few seconds soon after cutting.		
Plant	**Disease**	**Copper Sulfate Pentahydrate 20.5% SC Rate – tsp./5 gals. (lbs. Cu^{2+}/5 gals.)**
Alstromeria	Botrytis	0.73 to .97 (.0029 to .0038)
Carnation*	Botrytis	1.9 to 2.9 (.0078 to .0116)
Chrysanthemum*	Botrytis	.97 to 1.9 (.0038 to .0078)
Delphinium*	Botrytis	.97 to 1.9 (.0038 to .0078)
Freesia	Botrytis	0.73 to .97 (.0029 to .0038)
Gerbera*	Botrytis	1.9 to 2.9 (.0078 to .0116)
Gladiola	Botrytis	1.5 to 2.9 (.0058 to .0116)
Orchid*	Botrytis	1.9 to 2.9 (.0078 to .0116)
Rose	Botrytis	2.9 to 3.6 (.0116 to .0145)
Snapdragon*	Botrytis	.97 to 1.9 (.0038 to .0078)
Sweet Pea	Botrytis	.97 to 1.9 (.0038 to .0078)
*Not Registered for Use By California.		

BULB APPLICATIONS

Dip bulbs for 5 minutes or spray bulbs to drip, then allow to dry before planting.		
Plant	**Disease**	**Copper Sulfate Pentahydrate 20.5% SC Rate – tsp./5 gals. (lbs. Cu^{2+}/5 gals.)**
Calla Lilly	Erwina	29.1 (.116)

SOIL DRENCH APPLICATIONS (GREENHOUSE, FIELD, LANDSCAPE AND INTERIOR)Plant	**Disease(s)/Pathogens**	**Copper Sulfate Pentahydrate 20.5% SC Rate fl. oz./100 gals. (lbs. Cu^{2+}/100 gals)**
African Violet	Phytophthora	12.6 to 19.4 (.050 to .078)
Aster	Phytophthora	19.4 to 29.1 (.078 to .116)
Azalea	Cylindrocladium	19.4 to 34 (.078 to .136)
	Rhizoctonia	19.4 to 34 (.078 to .136)
Calla Lilly*	Erwina	14.6 to 29.1 (.058 to .116)
Cyclamen	Erwina	14.6 (.058)
Ferns	Rhizoctonia	14.6 to 29.1 (.058 to .116)
Geranium	Botrytis	19.4 to 34 (.078 to .136)
Hosta	Erwina	14.6 to 24.3 (.058 to .097)
Impatiens	Phytophthora	19.4 to 34 (.078 to .136)
Japanese Maple	Verticillium	24.3 (.097)
Pansy	Phytophthora	14.6 to 24.3 (.058 to .097)
	Pythium	14.6 to 24.3 (.058 to .097)
Periwinkle	Phytophthora	14.6 to 19.4 (.058 to .050)
Pittosporum	Rhizoctonia	14.6 to 19.4 (.058 to .050)
Poinsettia	Phytophthora	14.6 to 24.3 (.058 to .097)
	Rhizoctonia	19.4 to 34 (.078 to .136)
Rhododendron	Rhizoctonia	19.4 to 34 (.078 to .136)
Rose	Black spot	19.4 to 34 (.078 to .136)
	Cylindrocladium	19.4 to 34 (.078 to .136)
Spathiphyllum	Cylindrocladium	19.4 to 34 (.078 to .136)
	Phytophthora	19.4 to 34 (.078 to .136)
Vinca Minor*	Rhizoctonia	14.6 to 24.3 (.058 to .097)

{Note to reviewer: [Text] in brackets denotes optional text.}

GREENHOUSE AND SHADEHOUSE CROPS

Notice to Users: Copper Sulfate Pentahydrate 20.5% SC may be used in greenhouses and shade houses to control diseases on crops which appear on this label, and specific instructions have been developed for crops listed. The grower should bear in mind the sensitivity of crops grown in greenhouses and shadehouses differs greatly from crops grown under field conditions. Neither the manufacturer nor the seller has determined whether or not Copper Sulfate Pentahydrate 20.5% SC can be used safely on all greenhouse and shadehouse grown crops. Consequently, injury arising from the use of Copper Sulfate Pentahydrate 20.5% SC on these types of greenhouse and shadehouse crops is the responsibility of the user. The user should determine if Copper Sulfate Pentahydrate 20.5% SC can be used safely prior to commercial use. In a small area, apply the recommended rates to the plants in question, i.e. foliage, fruit etc., and observe for 7 to 10 days for symptoms of phytotoxicity prior to commercial use.

Apply Copper Sulfate Pentahydrate 20.5% SC according to specific rates given for those crops in ounces (lbs. Cu2+) per acre.

One fluid ounce = 29.6 milliliters = 6 teaspoons per 1,000 square feet is equivalent to 42.3 ounces (.168 lbs.) per acre.

Copper Sulfate Pentahydrate 20.5% SC should be applied in adequate water for thorough coverage of plant parts. Begin application at first sign of disease and repeat at 7 to 14 day intervals or as needed; use shorter spray intervals during periods when severe disease conditions persist.

NOTE: Phytotoxicity may occur on young tender flush when Copper Sulfate Pentahydrate 20.5% SC is applied to citrus seedlings grown in greenhouses or shadehouses.

Crop	Disease	Rate ml. fl. oz. (lbs. Cu^{2+}) per 1,000 sq. ft.	Directions
Citrus (Non-Bearing Nursery)	Brown rot, Citrus canker, Greasy Spot, Melanose, Pink pitting, Scab*	14.6 ml. .492 fl. oz. (.0020)	Begin applications when disease first threatens. Repeat at 30 day intervals or as needed depending on disease severity. Minimum retreatment interval is 7 days.
Cucumber	*Alternaria* leaf spot, Angular leaf spot, Anthracnose, Downey mildew, Gummy stem blight*, Phomopsis, Powdery mildew	4.9 to 11.6 ml. .164 to .393 fl. oz. (.0007 to .0016)	Apply weekly when plants begin to vine. Use the higher rates when conditions favor disease.
Eggplant	*Alternaria* blight, Anthracnose, Phomopsis*, Phytophthora blight	8.7 ml. .295 fl. oz. (.0012)	Begin applications prior to development of disease symptoms. Repeat at 7 to 10 day intervals or as needed depending on disease pressure. Minimum retreatment interval is 7 days.
Pepper	Anthracnose*, Bacterila spot, Cercospora leaf spot	8.7 to 14.6 ml. .295 to .492 fl. oz. (.0012 to .0020)	Begin applications when conditions favor disease development and repeat at 7 to 10 day intervals or as needed depending on severity. Use the higher rates when conditions favor disease. Minimum retreatment interval is 7 days.
Tomato	Anthracnose*, Bacterila spot, Early blight, Gray leaf mold, Late blight, Septoria leaf spot	8.7 to 14.6 ml. .295 to .492 fl. oz. (.0012 to .0020)	Begin applications when disease first threatens and repeat at 7 to 10 day intervals or as needed depending on disease severity. Use the higher rates when conditions favor disease. Minimum retreatment interval is 7 days.
*Not Registered for Use By California			

{Note to reviewer: [Text] in brackets denotes optional text.}

SPRAY APPLICATION (SHADE AND ORNAMENTAL TREES)
Sycamore

Disease(s)	Rate/A fl. oz. (lbs. Cu^{2+})	Maximum Rate Per Acre Per Application fl. oz. (lbs. Cu2+)	Directions
Anthracnose	8.7 to 17.5 (.035 to .070)	17.5 (.070)	Apply as a full cover spray in 100 gals. of water or sufficient volume for thorough coverage at bud crack. Repeat 7 to 10 days later at 10% leaf expansion. Use the higher rates when disease is severe.
Do not apply more than 0.36 lbs. metallic copper (0.75 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

TRUNK INJECTION APPLICATIONS (SHADE AND ORNAMENTAL TREES)
Elm for Dutch Elm disease and Cankers (Botryodiplodia, Cytospora, Tubercularia)

Inject once during the growing season for control or prevention. Injection sites should be six inches or less above the soil line. Injection should not be done against Dutch Elm disease if the Elm appears more than 20% diseased or if the disease may have entered through root grafts from another diseased tree or stump. Remove dead and diseased limbs within 10 days after treatment.

Elm Size (diameter at chest height)	Copper Sulfate Pentahydrate 20.5% SC fl. oz. (lbs. Cu^{2+})	Water (gals.)
19 to 25 inches	1.9	2
26 to 29 inches	2.9	3
30 to 33 inches	3.9	4
34 to 40 inches	4.9	5
41 to 48 inches	5.8	6

On Red Elm, use the dosage specified below for Red Oak.

Oak and Sycamore* (Anthracnose, Oak Wilt, Phytophthora)
On Red Oak, use as preventative treatment only. Follow the injection directions in the "ELM" section, taking care that holes are not too deep on shallow-barked Oaks.

Treatment is best in the month before Fall color in northern climates.

Elm Size (diameter at chest height)	Copper Sulfate Pentahydrate 20.5% SC fl. oz. (lbs. Cu^{2+}) Red Elm/Red Oak	Copper Sulfate Pentahydrate 20.5% SC fl. oz. (lbs. Cu^{2+}) Oak/Sycamore	Water (gals.)
12 to 18 inches	.97 (.004)	1.5 (.006)	3.0
19 to 26 inches	1.5 (.006)	1.9 (.008)	4.5
27 to 33 inches	1.9 (.008)	2.9 (.012)	6.0
34 to 40 inches	2.4 (.010)	3.4 (.014)	7.5
41 to 48 inches	2.9 (.012)	4.4 (.017)	9.0
*Not Registered for Use By California			

Shade Trees (Cankers: Cytospora on Cottonwood, Green Ash, Paper Birch; Botryodiplodia and Cytospora on Hackberry, Silver Maple; Nectria on Honey Locust)

Follow injection directions in the "Elm" section.

Elm Size (diameter at chest height)	Copper Sulfate Pentahydrate 20.5% SC fl. oz. (lbs. Cu^{2+})	Water (gals.)
10 inches	1.3 (.005)	1.0
20 inches	2.4 (.010)	2.0

TURFGRASS

Crop	Copper Sulfate Pentahydrate 20.5% SC Maximum Rate - Fl. Oz. (Lb. Cu^{2+}) per Acre per Application	Copper Sulfate Pentahydrate 20.5% SC Maximum Annual Rate - Fl. Oz. (Lb. Cu^{2+}) per Acre	Minimum Retreatment Interval (Days)	Directions
Turfgrass	5.88 (.023)	41.15 (.164)	10	Treat turfgrass for black algae and moss with 5.88 fl. oz. of product per acre.

{Note to reviewer: [Text] in brackets denotes optional text.}

STORAGE AND DISPOSAL

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

Pesticide Storage

Store in a safe place away from PETS AND KEEP OUT OF THE REACH OF CHILDREN. Store between 40° and 120° F, away from excessive heat. This product will freeze. Always keep container closed. Store this product in its original container only. Bulk product shall be stored and handled in stainless steel, fiberglass, polypropylenes, PVCs, or plastic equipment. Keep away from galvanized pipe and any nylon storage or handling equipment.

Pesticide Disposal

Excess product must be disposed of through use. Do not contaminate lakes, rivers, or streams as this may cause fish kills. 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 directions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance. In the event of a spill, neutralize with limestone or baking soda before disposal. May deteriorate concrete.

Container Handling

[[less than 5 gallons] Non-refillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use and disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.]

[[greater than 5 gallons] Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the person refilling. To clean container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by State and local authorities.]

[Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by State and local authorities. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tan or store rinsate for later use or disposal. Repeat this procedure two more times. Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.]

DO NOT USE CONTAINERS FOR THE STORAGE OF FOOD, FEED, OR DRINKING WATER!

{Note to reviewer: [Text] in brackets denotes optional text.}

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions For Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened and the purchase price will be refunded.

The Directions For Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of Albaugh, LLC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold Albaugh, LLC and Seller harmless for any claims relating to such factors.

Albaugh, LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions or Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or Albaugh, LLC, and Buyer and User assume the risk of any such use. **TO THE EXTENT CONSISTENT WITH APPLICABLE LAW ALBAUGH, LLC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.**

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[Albaugh, LLC Trademark information to be added.]

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{Note to reviewer: [Text] in brackets denotes optional text.}

[LABEL HISTORY]

[(Not included in final printed labeling)]

File Name	Version Mark	Comment
083100-000XX.20230216.DRAFT	02162023	Label Revisions from EPA Comments
083100-000XX.20230329.DRAFT	032923	Label Revisions from EPA Comments
083100-000XX.20230808.DRAFT	080823	Label Revisions from EPA Comments
083100-000XX.20230808.DRAFT	042524	Label Revisions from EPA Comments
083100-000XX.20240822.DRAFT	082224	Label Revisions from EPA Comments