



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

September 13, 2017

Carolyn Miter
Registrations Specialist
Albaugh, LLC
PO Box 2127
Valdosta, GA 31604

Subject: Notification per PRN 98-10 – Page 2- revises company name to Albaugh, LLC
Product Name: Copper Hydroxide 20% DF
EPA Registration Number: 42750-218
Application Date: 6/13/2017
Decision Number: 530561

Dear Ms. Miter:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

The label submitted with the application has been stamped “Notification” and will be placed in our records.

Should you wish to add/retain a reference to the company’s website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA’s Office of Enforcement and Compliance.

If you have any questions, please contact Lindsay Roe by phone at 703-347-0506, or via email at roe.lindsay@epa.gov.

Sincerely,

A handwritten signature in black ink that reads "Tony Kish".

Tony Kish, Product Manager 22 Fungicide Branch
Registration Division (7505P)
Office of Pesticide Programs

NOTIFICATION

42750-218

The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:

09/13/2017

COPPER HYDROXIDE 20% DF

FUNGICIDE/BACTERICIDE

ACTIVE INGREDIENT:

Copper Hydroxide* 30.7%

INERT INGREDIENTS: 69.3%

TOTAL: 100.0%

(*Metallic Copper Equivalent - 20%)

*CAS No. 20427-59-2

KEEP OUT OF REACH OF CHILDREN

WARNING/AVISO

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

FIRST AID

IF IN EYES:

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

IF INHALED:

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.
- Call a poison control center or doctor for further 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 the poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

IF ON SKIN OR CLOTHING:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

In case of medical or transport emergency, contact CHEMTREC toll free at 1-800-424-9300.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate use of gastric lavage.

SEE BACK PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA Reg. No. 42750-218

EPA Est. No. 45002-MEX-02

NET CONTENTS:

Manufactured For:
Albaugh LLC
1525 NE 36th Street
Ankeny, IA

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING

Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear protective clothing and goggles. Harmful if swallowed, absorbed through the skin, or inhaled. Do not get in eyes, on skin, or on clothing. Avoid inhaling dust or spray mists. 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)

Some materials that are chemical-resistant to this product are barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, PVC and viton. If you want more options, follow the instructions for category A on an EPA chemical-resistance category selection chart.

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

1. Long-sleeved shirt and long pants
2. Chemical resistant gloves made of any waterproof material
3. Shoes plus socks
4. Protective eyewear

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

USER SAFETY RECOMMENDATIONS

Users should:

1. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
2. Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and change into clean clothing.
3. Remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates and may contaminate water through runoff. This product has a potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

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.

DIRECTIONS FOR USE

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

For questions regarding the use of this product, contact Albaugh, Inc. LLC at 1-800-247-8013

AGRICULTURAL USE REQUIREMENTS

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

Do not enter or allow worker entry into treated areas during the restricted entry interval of 48 hours provide the following instructions are followed.

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

- Coveralls
- Chemical resistant gloves made of any waterproof material
- Shoes plus socks
- Protective eyewear

NON-AGRICULTURAL USE REQUIREMENTS

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

Do not enter treated areas without protective clothing until sprays have dried.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store in a cool, secure, dry area in original container.

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

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

GENERAL INSTRUCTIONS

COPPER HYDROXIDE 20% DF may be applied by Air, or by Dilute or Concentrated Ground Sprayers, or Chemigation on crops and at rates given on this label unless specifically prohibited for that crop use. When selecting a use rate for COPPER HYDROXIDE 20% DF, do not apply less than the label recommended minimum amount. Under heavy disease pressure or when conditions favor such, use the higher rate and shorter spray intervals specified for each crop. Use the higher rates for large mature tree crops. The per acre use rate is applicable for both dilute and concentrate spraying.

Sufficient spray volume and spray pressure are essential to thoroughly penetrate the plant canopy and give thorough spray coverage. On crops sensitive to copper fungicides use the higher volumes of spray water per acre. When making a concentrate or aerial application without specific experience, it is advisable to test for crop tolerance prior to full scale use.

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

When using adjuvants or other pesticides in combination with this product, always observe the precautionary statements on the product's label and required days before harvest. Sprays of COPPER HYDROXIDE 20% DF may be applied up to 24 hours preharvest due to REI for Worker Protection Standard. Before mixing with other products in spray tank, be sure that products are compatible. If compatibility is in question, use the compatibility jar test before mixing a whole tank.

COPPER HYDROXIDE 20% DF should not be applied in spray water having a pH of less than 6.5 as phytotoxicity may result. Use a buffering agent to increase the pH to 6.5-7.0 if your water source is below 6.5. Also avoid using water having a pH of greater than 9.0 as effectiveness may be reduced. Environmental conditions such as extended periods of wet weather, acid rain, etc. which alter the pH of the leaf surface may affect the performance of COPPER HYDROXIDE 20% DF resulting in possible phytotoxicity or loss of effectiveness.

Agricultural chemicals may perform in an unpredictable manner when tank mixed, especially where several products are involved. Reduced effect on pests or crop injury may occur. Unless recommended on this label or by state/local expert, it is advisable to test for compatibility and tolerance to crop injury prior to full scale commercial utilization of a new tank mix or tank mixing should not be undertaken.

This product may be reactive on metal and masonry surfaces such as galvanized roofing. Avoid contact with metal surfaces. Do not spray cars, houses, lawn furniture, etc.

MIXING INSTRUCTIONS FOR SPRAY APPLICATION

Fill the spray tank three-fourths to four-fifths full with clean water. Start agitation (NOTE: Proper agitation creates a rippling or rolling action on the liquid surface). Add COPPER HYDROXIDE 20% DF at the recommended rate.

Mix thoroughly and then add enough water to fill spray tank. Maintain sufficient agitation during mixing and during application of sprays to ensure a uniform spray mixture. When tank mixing with other products, follow the mixing sequence below: (1) micronutrients and fertilizers, (2) wettable powders, dry flowables, and water dispersible granules, (3) liquid flowables, (4) emulsifiable concentrates, and (5) adjuvants. Before adding the second pesticide, be sure that the prior product is well mixed and suspended before adding the next ingredient.

MINIMUM RECOMMENDED SPRAY VOLUME IN GALLONS PER ACRE (GPA)

A full dilute spray on tree crops means the maximum amount of spray when uniformly applied that an acre of such trees will hold to the point that excess spray begins to drip off. Thus the dilute spray volume per acre will depend on tree size and leaf surface per acre. The following listed dilute spray volumes is the volume that will generally provide such coverage on average size of full leafed trees. A concentrate spray is a spray applied in less volumes than a dilute. The extent of the concentration varies by equipment used. Thus the following spray volumes for a concentrated spray are the minimum volumes recommended per acre.

Use COPPER HYDROXIDE 20% DF as noted below unless indicated otherwise in the specific crop directions. COPPER HYDROXIDE 20% DF is adaptable to spraying from aircraft and ground spraying equipment. Depending on the equipment used and the specific crop, the volume applied per acre will differ. Refer to recommended volumes below:

	Aerial	Ground	
		Dilute	Concentrate
Vegetables and Field Crops	3	20	-
Small Fruits	5	150	50
Vines	5	150	50
Fruit and Nut Trees*	10	400	50

Citrus	10	800	100 (20 FL)**
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*On young fruit trees, use a minimum of 1 gallon spray per acre.

**Pesticide application equipment such as Curtec or other similar sprayers which are capable of obtaining thorough coverage at low volumes may be used at as low as 20 GPA of spray volume.

GENERAL CHEMIGATION INSTRUCTIONS

Do not apply this product through any irrigation system using aluminum parts or components as damage to the system may occur. Such application is prohibited regardless of whether the irrigation system is flushed with water after use of this product.

Apply this product only through one or more of the following types of systems: sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation system(s) which contain no aluminum parts or components. Do not apply this product through any other type of irrigation system.

Crop injury or lack of effectiveness can result from non-uniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are 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.

A. Center Pivot, Traveler, Big Gun, Motorized Lateral Move, End Tow, and Side (Wheel) Roll Irrigation Equipment: Operate system and injection equipment at normal pressures recommended by the manufacturer of injection equipment used. Fill tank or injection equipment with water. Operate system for one complete circle for center pivot or one complete run for the other recommended equipment, measuring time required, amount of water injected, and acreage contained in circle or run. Mix recommended amount of product for acreage to be covered into same amount of water used during calibration and inject into system continuously for one revolution or run, but continue to operate irrigation system until the product has been cleared from last sprinkler head. Spray mixture in the chemical supply tank must be agitated at all times, otherwise settling and uneven application may occur.

B. Solid Set and Hand Move Irrigation Equipment: Determine acreage covered by sprinkler. Fill tank of injection equipment with water and adjust flow to use contents over a thirty to forty-five minute period. Mix desired amount of product for acreage to be covered into quantity of water used during calibration and operate entire system at normal pressures recommended by the manufacturer of injection equipment used for amount of time established during calibration. Provide constant mechanical agitation in the mix tank to insure that the product will remain in suspension during the injection cycle. This product can be injected at the beginning or end of the irrigation cycle or as a separate application. Stop injection equipment after treatment is completed and continue to operate irrigation system until pesticide is cleared from last sprinkler head.

SAFETY DEVICES

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

with a system interlock.

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

SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS

Public water systems means a system for the provision to the public of piped water for human consumption if such a 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, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops or, in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

For additional instructions on safety precautions refer to statements (2), (3), (4), (6), and (7) in the section on SAFETY DEVICES.

POSTING INSTRUCTIONS

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

Posting must conform to the following requirements: Treated areas shall be posted with signs at all usual points of entry and along likely routes of approach from the listed sensitive areas. This sign is in addition to any sign posted to comply with the Worker Protection Standard. When there are no usual points of entry, signs must be posted in the corners of the treated areas and in any other location affording maximum visibility to sensitive areas. The printed side of the sign should face away from the treated area towards the sensitive area. The signs shall be printed in English. Signs must be posted prior to application and must remain posted until foliage has dried and soil surface water has disappeared. Signs may remain in place indefinitely as long as they are composed of material to prevent deterioration and maintain legibility for the duration of the posting period.

All words shall consist of letters at least 2 1/2 inches tall, and all letters and the symbol shall be 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.

CROPS

The following specific instructions are based on general application procedures. The recommendations of the State Agricultural Extension Service should be closely followed as to timing, frequency and number of sprays per season.

FROST INJURY PROTECTION:

Bacterial Ice nucleation inhibitor - Application of COPPER HYDROXIDE 20% DF 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 thereby provide some protection against light frost. The degree of frost protection will vary with weather conditions and other factors. Not recommended for those geographical areas where weather conditions favor severe frost.

ALFALFA			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Cercospora & Leptosphaerulina Leaf Spots	1.25 – 2.65 (.25 – .53 lbs Cu/A)	30	Apply 10 to 14 days before each harvest or earlier if disease threatens. Apply with ground or aerial equipment. Spray injury may occur with sensitive varieties such as Lahontan.
RESTRICTIONS: Maximum single application rate is 2.65 lbs/A (0.53 lbs metallic copper equivalent) Maximum annual application rate is 5.6 lbs/A (1.12 lbs metallic copper equivalent)			

ALMONDS			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Bloom/Growing Season: Coryneum Blight Blossom Brown Rot	2.5 – 7.5 (0.5 – 1.5 lbs Cu/A)	5	Use during the early bloom stage (popcorn). A second application in late dormant before foliage buds swell may be necessary when frequent rainfall occurs. To avoid plant injury, do not use above rate after full bloom. NOTE: Foliar injury may occur from post-bloom sprays
Dormant to Pink Bud Season: Bacterial Blast (Pseudomonas)	7.5 – 40.0 (1.5 – 8.0 lbs Cu/A)	7	Use at dormant to early pink bud. For blast control in sprinkler irrigated orchards or where disease is severe, apply 2-4 sprays or as many as required at 1.0 to 2.5 lbs per acre at 1 - 2 week post-bloom intervals or just before sprinkling. Slight leaf injury may occur from post-bloom spray.
RESTRICTIONS Maximum single dormant application rate is 40 lbs/A (8.0 lbs. metallic copper equivalent) Maximum single bloom/growing application rate is 7.5 lbs/A (1.5 lbs. metallic copper equivalent) Maximum annual application rate is 90 lbs/A (18.0 lbs metallic copper equivalent)			

APPLES			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Fall & Late Dormant: Anthracnose European Canker Pseudomonas Syringae	5.25 – 40.0 (1.05 – 8.0 lbs Cu/A)	Only one dormant application allowed per season	Apply before fall rains. Use on yellow varieties may cause discoloration. To avoid, pick before spraying.
Silver-tip to Green-tip stage: Apple scab, Fire Blight	5.0 – 30.0 (1.0 – 6.0 lbs Cu/A)	Only one application allowed per season	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 1/2 inch.
Bloom & Growing Season: Fireblight	2.5 – 7.5 (0.5 – 1.5 lbs Cu/A)	5	Make application between 1/2 inch green-tip to first cover. ATTENTION: Moderate to severe crop injury may occur with this extended spray schedule. It is not intended for fresh market apples or for apples where fruit finish is a concern due to fruit russetting. The addition of 1 to 3 pounds of hydrated lime per pint of Copper Hydroxide 10% Liquid may reduce crop injury.
Crown or Collar Rot (Phytophthora cactorum)	See comment	5	Apply either in early spring or in fall after harvest each year. Do not use if soil pH is below 5.5 or copper toxicity may result. Mix 1.0 – 1.5 lbs in 100 gallon of water. Apply 4 gallons of suspension as a drench on the lower trunk area of each tree. Do not exceed the maximum single application rate of 12 pints per acre for growing season use. Follow the 5 day retreatment interval for any untreated trees.
RESTRICTIONS Maximum single dormant season application rate is 40 lbs/A (8.0 lbs. metallic copper equivalent) Maximum single silver-tip to green-tip season is 30 lbs/A (6.0 lbs. metallic copper equivalent) Maximum single growing season application rate is 7.5 lbs/A (1.5 lbs. metallic copper equivalent) Maximum annual application rate is 80 lbs/A (16.0 lbs. metallic copper equivalent)			

APRICOTS			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Fall & Late Dormant: Anthracnose European Canker Pseudomonas Syringae	7.5 – 40.0 (1.5 – 8.0 lbs Cu/A)	7	Apply before fall rains and make a second application at late dormant Use the higher rates when conditions favor disease. Use on yellow varieties may cause discoloration. To avoid, pick before spraying.
Bloom/Growing Season: Coryneum Blight (Shot Hole) Blossom Brown Rot	2.5 – 7.5 (0.5 – 1.50 lbs Cu/A)	5	Apply at popcorn to full bloom as a full cover spray. To avoid spray injury, do not apply after full bloom.
RESTRICTIONS Maximum single dormant application rate is 40 lbs/A (8.0 lbs. metallic copper equivalent) Maximum single bloom/growing application rate is 7.5 lbs/A (1.5 lbs. metallic copper equivalent) Maximum annual application rate is 90 lbs/A (18.0 lbs metallic copper equivalent)			

ATEMOYA, SUGAR APPLE			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Anthracnose	2.5 – 15.8 (0.50 – 3.15 lbs Cu/A)	7	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.
RESTRICTIONS Maximum single application rate is 15.8 lbs/A (3.15 lbs metallic copper equivalent) Maximum annual application rate is 63 lbs/A (12.6 lbs metallic copper equivalent)			

AVOCADOS			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Scab	5.0 – 15.8 (1.0 – 3.15 lbs Cu/A)	14	Apply when bloom buds begin to swell. Continue application at 2 – 4 week intervals for 5 to 6 applications. Follow recommendations of State Agricultural Experiment Stations.
RESTRICTIONS Maximum single application rate is 15.8 lbs/A (3.15 lbs metallic copper equivalent) Maximum annual application rate is 94.5 lbs/A (18.9 lbs metallic copper equivalent)			

BANANAS			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Sigatoka	1.25 – 5.25 (0.25 – 1.05 lbs Cu/A)	7	Apply on a 7 - 14 day schedule throughout the wet season. Apply at 21 day intervals during dry periods.
Black Pitting		7	Apply directly to the fruit stem and include the basal portion of the leaf crown. Apply during the first and second weeks after emergence.
RESTRICTIONS Maximum single application rate is 5.25 lbs/A (1.05 lbs metallic copper equivalent) Maximum annual application rate is 94.5 lbs/A (18.9 lbs metallic copper equivalent)			

BEANS (Dry, Green)			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Bacterial Blight (Halo & Common)	1.25 – 3.95 (0.25 – 0.79 lbs Cu/A)	7	For protective sprays apply first application when plants are six inches high. Apply on 7 to 14 day schedule depending on local conditions.
RESTRICTIONS Maximum single application rate is 3.95 lbs/A (0.79 lbs. metallic copper equivalent) Maximum annual application rate is 23.7 lbs/A (4.74 lbs metallic copper equivalent)			

BRAMBLES (Blackberry, Santiams, Logans, Boysens, Marions, Auroras, Cascades, Chehalems, Raspberry & Thornless Evergreens)			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Leaf & Cane Spot	2.5 – 10.0 (0.5 – 2.0 lbs Cu/A)	7	Apply delayed dormant spray after training in spring. Apply again in late spring. Make fall spray application after harvest.
RESTRICTIONS Maximum single application rate is 10 lbs/A (2.0 lbs metallic copper equivalent) Maximum annual application rate is 50 lbs/A (10.0 lbs metallic copper equivalent)			

BLUEBERRIES			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Bacterial Canker	2.5 – 10.5 (0.5 – 2.1 lbs Cu/A)	7	Make first application before the fall rains, preferably the first week in October and a second application 1 - 4 weeks later.
RESTRICTIONS Maximum single application rate is 10.5 lbs/A (2.1 lbs metallic copper equivalent) Maximum annual application rate is 42 lbs/A (8.4 lbs metallic copper equivalent)			

CRUCIFERS (Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Collard Greens, Mustard Greens, & Turnip Greens)			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Downy Mildew Black Rot (Xanthomonas) Black Leaf Spot (Alternaria)	0.75 – 2.65 (0.15 – .53 lbs Cu/A)	7	Apply in a minimum of 25 GPA at 7 day intervals. (CAUTION: A slight reddening of older leaves may occur on broccoli, and a slight flecking of wrapper leaves may occur on cabbage.)
RESTRICTIONS Maximum single application rate is 2.65 lbs/A (0.53 lbs metallic copper equivalent) Maximum annual application rate is 13.2 lbs/A (2.65 lbs metallic copper equivalent)			

CACAO			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Black Pod	5.0 – 11.2 (1.0 – 2.25 lbs Cu/A)	14	Begin applications at the start of the rainy season and continue while infection conditions persist. Sprays should be made as often as 14 to 21 days in high rainfall areas at varying rates per acre depending on disease severity. For drier areas where 2 to 4 applications are recommended during critical infection periods and at long intervals, use 2 - 6 pints per acre, according to disease incidence and planting density.
RESTRICTIONS Maximum single application rate is 11.2 lbs/A (2.25 lbs metallic copper equivalent) Maximum annual application rate is 78.8 lbs/A (15.75 lbs metallic copper equivalent)			

CARAMBOLA			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Anthracnose	3.75 – 10.5 (0.75 – 2.10 lbs Cu/A)	7	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.
RESTRICTIONS Maximum single application rate is 10.5 lbs/A (2.1 lbs metallic copper equivalent) Maximum annual application rate is 52.5 lbs/A (10.5 lbs metallic copper equivalent)			

CARROTS			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Carrot Blight (Cercospora)	2.5 – 5.0 (0.5 – 1.0 lbs Cu/A)	7	When disease threatens, apply at 7 to 14 day intervals.
RESTRICTIONS Maximum single application rate is 5.0 lbs/A (1.0 lbs metallic copper equivalent) Maximum annual application rate is 25 lbs/A (5.0 lbs metallic copper equivalent)			

CELERY & CELERIAC			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Early, Late & Bacterial Blights	1.25 – 5.0 (0.25 – 1.0 lbs Cu/A)	7	Apply as soon as plants are first established in the field, then every 7 days depending on severity and weather.
RESTRICTIONS Maximum single application rate is 5 lbs/A (1.0 lbs metallic copper equivalent) Maximum annual application rate is 26.5 lbs/A (5.3 lbs metallic copper equivalent)			

CHERRY			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Dormant & Late Bloom Season: Dead Bud (Pseudomonas syringae) Coryneum Blight	7.5 – 40.0 (1.5 – 8.0 lbs Cu/A)	7	In orchards where the disease is severe a spray should also be applied shortly after harvest.
Bloom & Growing Season: Brown Rot Blossom	5.0 – 7.5 (1.0 – 1.5 lbs Cu/A)	5	Applied at popcorn and full bloom.
RESTRICTIONS Maximum single dormant season application rate is 40 lbs/A (8.0 lbs metallic copper equivalent) Maximum single growing season application rate is 7.5 lbs/A (1.5 lbs metallic copper equivalent) Maximum annual application rate is 90 lbs/A (18.0 lbs metallic copper equivalent)			

CHIVES			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Downy Mildew	1.25 – 2.65 (0.25 – 0.53 lbs Cu/A)	7	Begin applications when plants are established in the field. Repeat applications every 7-10 days as dictated by disease conditions.
RESTRICTIONS Maximum single application rate is 2.65 lbs/A (0.53 lbs metallic copper equivalent) Maximum annual application rate is 13.2 lbs/A (2.65 lbs metallic copper equivalent)			

CITRUS (Grapefruit, Kumquat, Lemon, Orange, Pummelo, Tangelo, Tangerine & Lime)			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Melanose Scab Pink Pitting	6.25 – 15.8	7	Apply as pre-bloom and post-bloom sprays.
Greasy Spot	(1.25 – 3.15 lbs Cu/A)	7	May be used in concentrate sprays at equivalent rates. For aerial application use 4-6 pints Copper Hydroxide 10% Liquid per 10 gallons per acre.
Brown Rot	5.0 – 15.8 (1.0 – 3.15 lbs Cu/A)	7	Apply beginning in the fall and continuing as needed. Apply to skirts of trees to a height of at least 4 feet. Apply also to bare ground one foot beyond skirt. Use higher rates when conditions favor disease. NOTE: In California, in areas subject to copper injury, add 1/3 to 1 lb. of high quality lime per gallon of Copper Hydroxide 10% Liquid.
Citrus Canker (SUPPRESSION ONLY)	10.0 – 15.8 (2.0 – 3.15 lbs Cu/A)	7	Spraying flushes 7-14 days after shoots begin to grow. Young fruit may need additional application. Number and timing of applications will depend on disease pressure. Under heavy disease pressure, each flush of new growth should be sprayed.
Phytophthora (Trunk Application) This treatment serves as protection for up to one year, but does not cure existing infections.	See comment	7	Mix 0.5 to 1.0 lbs of product with one gallon of water and paint trunks of trees from the soil surface to the lowest scaffold limbs. Apply in May before summer rains and/or in the fall before wrapping trees for freeze protection. This treatment serves as protection for up to one year, but does not cure existing infections.
RESTRICTIONS Maximum single application rate is 15.8 lbs/A (3.15 lbs metallic copper equivalent) Maximum annual application rate is 63 lbs/A (12.6 lbs metallic copper equivalent)			

COFFEE			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Coffee Berry Disease (Collectotrichum coffeanum)	3.75 – 10.5 (0.75 – 2.1 lbs Cu/A)	14	Apply after flowering and before the start of long rains and then at 14-28 day intervals until picking. Use higher rates when rainfall is heavy and disease pressure is high.
Bacterial Blight (Pseudomonas syringae)		14	Begin spray program before the start of long rains and then at 14 - 28 day intervals until picking. The critical time of spraying to control disease is just before, during, and after flowering(s), especially when these times coincide with wet weather. Use higher rates when rainfall is heavy and disease pressure is high.
Iron Spot (Cercospora coffeicola) & Pink Disease (Corticium salmonicolor)	1.25 – 5.25 (0.25 – 1.05 lbs Cu/A)	14	Begin treatment at start of wet season and continue at monthly intervals for three applications.
Leaf Rust	3.75 – 10.5 (0.75 – 2.1 lbs Cu/A)	14	Apply before the onset of rain and then at 14 - 21 day intervals while rains continue. Use higher rates when rainfall is heavy and disease pressure is high.
RESTRICTIONS Maximum single application rate is 10.5 lbs/A (2.1 lbs metallic copper equivalent) Maximum annual application rate is 63 lbs/A (12.6 lbs metallic copper equivalent)			

CONIFERS (Douglas Fir, Fir, Juniper, Leyland Cypress, Pine, Spruce)			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Needlecast, Anthracnose, Rhabdocline needlecast, Phomopsis Twig Dieback	1.25 - 10.0 (0.25 – 2.0 lbs Cu/A)	7	Begin applications at bud break and repeat at 1 - 4 week intervals. Apply in a tank mix with another registered pesticide if moderate to severe disease pressure is present.
RESTRICTIONS Maximum single application rate is 10 lbs/A (2.0 lbs metallic copper equivalent) Maximum annual application rate is 100 lbs/A (20.0 lbs metallic copper equivalent)			

CRANBERRY			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Fruit Rot	5.0 – 10.5 (1.0 – 2.1 lbs Cu/A)	7	One or two additional applications made at 7 to 14 day intervals may be required, depending on disease pressure. Follow the advice of the local Agricultural Extension Service.
RESTRICTIONS Maximum single application rate is 10.5 lbs/A (2.1 lbs metallic copper equivalent) Maximum annual application rate is 63 lbs/A (12.6 lb metallic copper equivalent)			

CUCURBITS (Cucumbers, Cantaloupes, Honeydews, Muskmelons, Pumpkins, Squash & Watermelons)			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Alternaria Leaf Spot Angular Leaf Spot Anthracnose Downy Mildew Powdery Mildew Gummy Stem Blight Watermelon Bacterial Fruit Blotch (suppression)	2.5 – 5.25 (0.5 – 1.05 lbs Cu/A)	5	Begin application when conditions are favorable for disease development. Repeat at 5-10 day intervals. Use higher rates when conditions favor disease. NOTE: Crop injury may occur from application at higher rates and shorter intervals. Discontinue use if injury occurs.
RESTRICTIONS Maximum single application rate is 5.25 lbs/A (1.05 lbs metallic copper equivalent) Maximum annual application rate is 26.2 lbs/A (5.25 lbs metallic copper equivalent)			

CURRANTS & GOOSEBERRY			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Anthracnose Leaf Spot	5.0 – 20.0 (1.0 – 4.0 lbs Cu/A)	10	Make applications, starting after harvest, before bloom and after petal fall.
RESTRICTIONS Maximum single application rate is 20 lbs/A (4.0 lbs metallic copper equivalent) Maximum annual application rate is 80 lbs/A (16.0 lbs metallic copper equivalent)			

DILL			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Phoma Leaf Spot Rhizoctonia Foliage Blight	1.25 – 3.95 (0.25 – 0.79 lbs Cu/A)	7	Begin applications when plants are first established in the field and repeat at 7-10 day intervals depending upon disease severity and environmental conditions. Use higher rates when conditions favor disease.
RESTRICTIONS Maximum single application rate is 3.95 lbs/A (0.79 lbs metallic copper equivalent) Maximum annual application rate is 19.8 lbs/A (3.95 lbs. metallic copper equivalent)			

EGGPLANT			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Alternaria Blight Anthracnose Phomopsis	1.25 – 3.95 (0.25 – 0.79 lbs Cu/A)	7	Apply before disease appears. Repeat at 7 to 10 day intervals.
RESTRICTIONS Maximum single application rate is 3.95 lbs/A (0.79 lbs metallic copper equivalent) Maximum annual application rate is 39.5 lbs/A (7.9 lbs metallic copper equivalent)			

ENDIVE & ESCAROLE			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Downy Mildew	1.25 – 5.0 (0.25 – 1.0 lbs Cu/A)	5	Begin treatment when disease first appears and repeat every 5 - 10 days as needed to suppress disease.
RESTRICTIONS Maximum single application rate is 5 lbs/A (1.0 lbs metallic copper equivalent) Maximum annual application rate is 40 lbs/A (8.0 lbs metallic copper equivalent)			

FILBERTS (Washington and Oregon only)			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Bacterial Blight (Post Harvest application)	10.0 – 30.0 (2.0 – 6.0 lbs Cu/A)	14	In seasons of heavy rain, make another application after the leaves have dropped. Add 1 pint of a superior type oil per 100 gallons of water.
Eastern Filbert Blight		14	Make initial application at budswell to budbreak in enough water to obtain thorough coverage. Additional applications should be made at intervals of 14 days depending on disease severity or when conditions favor disease pressure. Add 1 pint of superior type oil per 100 gallons of water.
RESTRICTIONS Maximum single application rate is 30 lbs/A (6.0 lbs metallic copper equivalent) Maximum annual application rate is 120 lbs/A (24.0 lbs metallic copper equivalent)			

GINSENG			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Alternaria Leaf Stem Blight	2.5 – 5.25 (0.5 – 1.05 lbs Cu/A)	7	Begin tank mix applications as a tank mix with two pounds of Iprodione 50WP in 100 gallons of water per acre as soon as plants have emerged in spring. Applications should be repeated every seven days until plants become dormant in fall. Apply fungicides at least eight hours before rain, giving the fungicides time to dry on the plants. Use of a spreader-sticker is advised. NOTE: Alternaria Leaf and Stem Blight is most severe in humid conditions such as those found in the dense canopies of two, three, and four year old ginseng. Complete and thorough spray is required for control.
RESTRICTIONS Maximum single application rate is 5.25 lbs/A (1.05 lbs metallic copper equivalent) Maximum annual application rate is 26.2 lbs/A (5.25 lbs metallic copper equivalent)			

GRAPES			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Black Rot Powdery Mildew Downy Mildew Phomopsis	3.75 – 15.0 (0.75 – 3.0 lbs Cu/A)	3	Apply at budbreak with additional applications throughout the rainy season, depending on the disease severity. (Attention: Slight to severe foliage injury may occur on copper-sensitive varieties such as Concord, Delaware, Niagara, and Rosette.)
RESTRICTIONS Maximum single application rate is 15 lbs/A (3.0 lbs metallic copper equivalent) Maximum annual application rate is 100 lbs/A (20.0 lbs metallic copper equivalent)			

GUAVA			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Anthraxnose Red Algae	2.5 – 6.15 (0.5 – 1.23 lbs Cu/A)	7	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.
RESTRICTIONS Maximum single application rate is 6.15 lbs/A (1.23 lbs metallic copper equivalent) Maximum annual application rate is 24.6 lbs/A (4.92 lbs metallic copper equivalent)			

HOPS			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Downy Mildew	1.25 – 2.65 (0.25 – 0.53 lbs Cu/A)	10	Apply as a fungicide crown treatment (after pruning, but before training) as needed. After training, additional fungicide treatments are needed at 10 day intervals. Discontinue use 2 weeks before harvest.
RESTRICTIONS Maximum single application rate is 2.65 lbs/A (0.53 lbs metallic copper equivalent) Maximum annual application rate is 13.2 lbs/A (2.65 lbs metallic copper equivalent)			

KIWI			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Blossom Blight (Bud Rot) Leaf Spot (Phomopsis)	3.75 – 10.5 (0.75 – 2.1 lbs Cu/A)	30	Make two to three applications during dormant season. Do not apply at time of or after leaf emergence.
Pseudomonas syringae Erwinia herbicola Pseudomonas fluorescens	2.5 – 10.5 (0.5 – 2.1 lbs Cu/A)	30	Make applications on a monthly basis. A maximum of 3 applications may be made.
RESTRICTIONS Maximum single application rate is 10.5 lbs/A (2.1 lbs metallic copper equivalent) Maximum annual application rate is 31.5 lbs/A (6.3 lbs metallic copper equivalent)			

LETTUCE			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Downy Mildew	1.25 – 5.0 (0.25 – 1.0 lbs Cu/A)	5	Begin treatment when disease first appears and repeat every 5 - 10 days as needed to suppress disease.
RESTRICTIONS Maximum single application rate is 5 lbs/A (1.0 lbs metallic copper equivalent) Maximum annual application rate is 40 lbs/A (8.0 lbs metallic copper equivalent)			

LITCHI			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Anthraco nose	2.5 – 6.15 (0.5 – 1.23 lbs Cu/A)	7	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.
RESTRICTIONS Maximum single application rate is 6.15 lbs/A (1.23 lbs metallic copper equivalent) Maximum annual application rate is 24.6 lbs/A (4.92 lbs metallic copper equivalent)			

LIVE OAK			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Ball Moss	See comment *	A second application may be required after 12 months	* Mix 4 – 10 lbs per 100 gallons of water. Apply in spring after heavy rain, using 1.5 gallons of spray per foot of tree height. Make sure to set tufts thoroughly. (NOTE: Copper Hydroxide 20% DF may be injurious to some ornamentals grown under live oaks).
RESTRICTIONS Maximum single application rate is 10 lbs/A (2.0 lbs metallic copper equivalent) Maximum annual application rate is 100 lbs/A (20.0 lbs metallic copper equivalent)			

MACADAMIA NUTS			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Anthracnose	5.0 – 11.8 (1.0 – 2.36 lbs Cu/A)	7	Initiate sprays at first sign of flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage
Blossom blight Raceme blight	2.5 – 7.5 (0.5 – 1.5 lbs Cu/A)	7	Apply during peak raceme development and bloom period.
RESTRICTIONS Maximum single application rate is 11.8 lbs/A (2.36 lbs metallic copper equivalent) Maximum annual application rate is 47.2 lbs/A (9.44 lbs metallic copper equivalent)			

MAMEY SAPOTE			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Anthracnose Algal Leaf Spot	5.0 – 10.5 (1.0 – 2.1 lbs Cu/A)	14	Apply when conditions favor disease development. Repeat on 14-30 day schedule as disease severity and environmental conditions dictate. Use higher rates when conditions favor disease.
RESTRICTIONS Maximum single application rate is 10.5 lbs/A (2.1 lbs metallic copper equivalent) Maximum annual application rate is 42 lbs/A (8.4 lbs metallic copper equivalent)			

MANGO			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Anthracoese	5.0 – 16.0 (1.5 – 3.2 lbs Cu/A)	7	Apply weekly after fruit set until harvest.
RESTRICTIONS Maximum single application rate is 16 lbs/A (3.2 lbs metallic copper equivalent) Maximum annual application rate is 240 lbs/A (48.0 lbs metallic copper equivalent)			

OLIVES			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Peacock Spot Olive Knot	6.25 – 30.0 (1.25 – 6.0 lbs Cu/A)	30	Apply before winter rains fall. A second application in early spring should be made if disease is severe.
RESTRICTIONS Maximum single application rate is 30 lbs/A (6.0 lbs metallic copper equivalent) Maximum annual application rate is 90 lbs/A (18.0 lbs metallic copper equivalent)			

ONION & GARLIC			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Purple Blotch Downy Mildew	1.25 – 5.0 (0.25 – 1.0 lbs Cu/A)	7	Apply when plants are 4 to 6 inches high and repeat at 7 to 10 day intervals.
RESTRICTIONS Maximum single application rate is 5 lbs/A (1.0 lbs metallic copper equivalent) Maximum annual application rate is 30 lbs/A (6.0 lbs metallic copper equivalent)			

PAPAYA			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Anthraco­nose	5.0 – 13.1 (1.0 – 2.63 lbs Cu/A)	7	Begin application before disease is expected to appear. Repeat at 7 - 14 day intervals. Use the higher rates when conditions favor disease. The addition of a suitable spreader-sticker, such as Kinetic®, may be desirable especially during periods of heavy rains.
RESTRICTIONS Maximum single application rate is 13.1 lbs/A (2.63 lbs metallic copper equivalent) Maximum annual application rate is 106 lbs/A (21.2 lbs metallic copper equivalent)			

PARSLEY			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Bacterial Blight (Pseudomonas sp.)	2.5 – 5.0 (0.5 – 1.0 lbs Cu/A)	10	Begin applications when plants are first established in the field and repeat at 10 day intervals depending upon disease severity and environmental conditions.
RESTRICTIONS Maximum single application rate is 5 lbs/A (1.0 lbs metallic copper equivalent) Maximum annual application rate is 10 lbs/A (2.0 lbs metallic copper equivalent)			

PASSION FRUIT			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Anthraco­nose	5.0 – 11.8 (1.0 – 2.36 lbs Cu/A)	7	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.
RESTRICTIONS Maximum single application rate is 11.8 lbs/A (2.36 lbs metallic copper equivalent) Maximum annual application rate is 47.2 lbs/A (9.44 lbs metallic copper equivalent)			

PEACHES & NECTARINES			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Dormant: Leaf Curl Coryneum Blight (Shot Hole) Bacterial Spot	10.0 – 40.0 (2.0 – 8.0 lbs Cu/A)	7	Apply leaf fall as dormant application. Use the higher rate when rainfall is very heavy and disease pressure is high. May be used with an agricultural spray oil.
Bloom & Growing Season: Brown Rot Blossom Blight (California)	2.5 – 7.5 (0.5 – 1.5 lbs Cu/A)	5	Apply as a full cover spray at pink bud. (Application at this time also affords some control of Leaf Curl and Coryneum Blight). NOTE: Do not spray later than three weeks prior to harvest. Do not use at rates above those recommended.
RESTRICTIONS Maximum single dormant season application rate is 40 lbs/A (8.0 lbs metallic copper equivalent) Maximum single growing season application rate is 7.5 lbs/A (1.5 lbs metallic copper equivalent) Maximum annual application rate is 90 lbs/A (18.0 metallic copper equivalent)			

PEANUTS			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Cercospora Leaf Spot	2.5 – 3.95 (0.5 – 0.79 lbs Cu/A)	7	Begin spraying 35-40 days after planting or when disease symptoms appear. Use sufficient water to get adequate coverage. Continue applications at 7 to 14 day intervals. Reduce spray interval to 7 days during humid weather. Use higher rates when conditions favor disease.
RESTRICTIONS Maximum single application rate is 3.95 lbs/A (0.79 lbs metallic copper equivalent) Maximum annual application rate is 23.7 lbs/A (4.74 metallic copper equivalent)			

PEARS, QUINCE			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Bloom & Growing Season: Fireblight	2.5 – 7.5 (0.5 – 1.5 lbs Cu/A)	5	Apply at 5 day intervals throughout bloom period. Excessive dosages may cause fruit russet.
Silver-tip to Green-tip stage: Fire Blight	5.0 – 30.0 (1.0 – 6.0 lbs Cu/A)	Only one application allowed per season	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 ½ inch.
Fall & Late Dormant Season: Pseudomonas blight	15.0 – 40.0 (3.0 – 8.0 lbs Cu/A)	Only one dormant application allowed per season	Apply before fall rain begins. NOTE: Excessive dosages may cause fruit russet.
RESTRICTIONS Maximum single dormant season application rate is 40 lbs/A (8.0 lbs metallic copper equivalent) Maximum single growing season application rate is 7.5 lbs/A (1.5 lbs metallic copper equivalent) Maximum single silver-tip to green-tip season is 30 lbs/A (6.0 lbs. metallic copper equivalent) Maximum annual application rate is 80 lbs/A (16.0 lbs metallic copper equivalent)			

PEAS			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Powdery Mildew	1.5 – 3.95 (0.3 – 0.79 lbs Cu/A)	7	Begin spray treatment when disease symptoms first appear. Repeat applications at weekly intervals.
RESTRICTIONS Maximum single application rate is 3.95 lbs/A (0.79 lbs metallic copper equivalent) Maximum annual application rate is 19.75 lbs/A (3.95 lbs metallic copper equivalent)			

PECANS			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Shuck and Kernel rot (Phytophthora cactorum) Zonate leaf spot (Cristulariella pyramidalis)	2.5 – 10.5 (0.5 – 2.1 lbs Cu/A)	14	Apply in sufficient water for good coverage at 2-4 week intervals starting at kernel growth and continuing until shucks open. Use the higher rate and shorter intervals if frequent rainfall occurs.

PECANS			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Mosses Algae Lichen	See Comment	Make only one application per year	Mix 2 – 4 lbs per 100 gallons spray plus spreader-sticker, such as Kinetic®, on a dilute spray basis and apply in dormant season before buds swell, thoroughly wetting limbs and mosses.
RESTRICTIONS Maximum single application rate is 10.5 lbs/A (2.1 lbs metallic copper equivalent) Maximum annual application rate is 42 lbs/A (8.4 lbs metallic copper equivalent)			

PEPPERS (bell, chili)			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Bacterial Spot	1.25 – 3.95 (0.25 – 0.79 lbs Cu/A)	3	Apply, when disease threatens, in sufficient water to provide adequate coverage. Use at 3 to 10 day intervals depending on disease severity.
RESTRICTIONS Maximum single application rate is 3.95 lbs/A (0.79 lbs metallic copper equivalent) Maximum annual application rate is 59.2 lbs/A (11.85 lbs metallic copper equivalent)			

PISTACHIOS			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Botrytis Blight Botryosphaeria Panicle Shoot Blight Septoria Leaf Blight Late Blight (Alternaria)	2.5 – 10.5 (0.5 – 2.1 lbs Cu/A)	14	Make initial application at bud swell and repeat on a 14-28 day schedule. Use higher rates when conditions favor disease.
RESTRICTIONS Maximum single application rate is 10.5 lbs/A (2.1 lbs metallic copper equivalent) Maximum annual application rate is 42 lbs/A (8.4 lbs metallic copper equivalent)			

PLUMS & PRUNES			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Dormant Season: Coryneum blight (Shot hole)	10.0 – 40.0 (2.0 – 8.0 lbs Cu/A)	7	Apply as a dormant spray. Use the higher rate when rainfall is heavy and/or disease pressure is high.
Bloom & Growing Season: Brown rot blossom blight	2.5 – 7.5 (0.5 – 1.5 lbs Cu/A)	5	Apply full cover application at pink, red or early white bud stage. Use the higher rate when disease pressure is heavy or conditions favor disease development.
RESTRICTIONS Maximum single dormant season application rate is 40 lbs/A (8.0 lbs metallic copper equivalent) Maximum single growing season application rate is 7.5 lbs/A (1.5 lbs metallic copper equivalent) Maximum annual application rate is 90 lbs/A (18.0 lbs metallic copper equivalent)			

POTATOES			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Early & Late Blight	1.25 – 12.5 (0.25 – 2.5 lbs Cu/A)	5	Apply at 5 to 10 day intervals beginning when plants are 6 inches high until two weeks before harvest.
RESTRICTIONS Maximum single application rate is 12.5 lbs/A (2.5 lbs metallic copper equivalent) Maximum annual application rate is 125 lbs/A (25 lbs metallic copper equivalent)			

SPINACH			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Anthracnose Cercospora Leafspot Downy Mildew White Rust	1.25 – 3.95 (0.25 – 0.79 lbs Cu/A)	7	Begin treatment when disease first appears and repeat every 7-10 days as needed to suppress disease.
RESTRICTIONS Maximum single application rate is 3.95 lbs/A (0.79 lbs metallic copper equivalent) Maximum annual application rate is 19.8 lbs/A (3.95 lbs metallic copper equivalent)			

STRAWBERRIES			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Downy Mildew Leaf Spot Leaf Blight	1.25 – 7.5 (0.25 – 1.5 lbs Cu/A)	7	Begin application when plants are established and continue on a weekly schedule throughout season. Discontinue applications if signs of phytotoxicity appear.
RESTRICTIONS Maximum single application rate is 7.5 lbs/A (1.5 lbs metallic copper equivalent) Maximum annual application rate is 41.0 lbs/A (8.19 lbs metallic copper equivalent)			

SUGAR BEETS & TABLE BEETS			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Cercospora Leaf Spot	2.5 – 6.5 (0.5 – 1.3 lbs Cu/A)	10	Start spray when disease threatens and continue for 4 to 5 applications. Spray every 10 to 14 days depending on weather conditions.
RESTRICTIONS Maximum single application rate is 6.5 lbs/A (1.3 lbs metallic copper equivalent) Maximum annual application rate is 39.3 lbs/A (7.86 lbs metallic copper equivalent)			

SYCAMORE			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Anthracoese	2.5 – 10.0 (0.5 – 2.0 lbs Cu/A)	7	Make two applications as a full cover spray. Use a minimum of 100 gallons water per acre. Make first application at bud crack and second application 7 to 14 days later at 10% leaf expansion.
RESTRICTIONS Maximum single application rate is 10 lbs/A (2.0 lbs metallic copper equivalent) Maximum annual application rate is 100 lbs/A (20.0 lbs metallic copper equivalent)			

TOMATOES (Processed Market)			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Early Blight Bacterial Speck Bacterial Spot Anthracnose Gray Leaf Mold Gray Leaf Spot Septoria Leaf Spot Late Blight	1.25 – 2.65 (0.25 – 0.53 lbs Cu/A)	3	Apply at 3-14 day intervals beginning when the disease threatens. Use more frequent applications when disease pressure is high.
RESTRICTIONS Maximum single application rate is 2.65 lbs/A (0.53 lbs metallic copper equivalent) Maximum annual application rate is 87 lbs/A (17.4 lbs metallic copper equivalent)			

TOMATOES (Fresh Market)			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Early Blight Bacterial Speck Bacterial Spot Anthracnose Gray Leaf Mold Gray Leaf Spot Septoria Leaf Spot Late Blight	1.25 – 8.0 (0.25 – 1.6 lbs Cu/A)	3	Apply at 3-14 day intervals beginning when the disease threatens. Use more frequent applications when disease pressure is high.
RESTRICTIONS Maximum single application rate is 8 lbs/A (1.6 lbs metallic copper equivalent) Maximum annual application rate is 40 lbs/A (8.0 lbs metallic copper equivalent)			

WALNUTS			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Walnut Blight	5.0 – 20.0 (1.0 – 4.0 lbs Cu/A)	7	Apply first spray at early pre-bloom when catkins are partially expanded. Make three additional applications during bloom and early nutlet stages at 7 to 10 day intervals. Additional applications may be necessary when frequent rainfall occurs.
RESTRICTIONS Maximum single application rate is 20 lbs/A (4.0 lbs metallic copper equivalent) Maximum annual application rate is 160 lbs/A (32.0 lbs metallic copper equivalent)			

WATERCRESS			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Cercospora Leaf Spot	1.25 – 2.65 (0.25 – 0.53 lbs Cu/A)	7	Begin application when plants are first established in the field, repeating at 7-14 day intervals depending on disease severity and environmental conditions. Do not exceed 4 applications per crop. Apply using ground spray equipment at no less than 50 gallons of spray solution per acre.
RESTRICTIONS Maximum single application rate is 2.65 lbs/A (0.53 lbs metallic copper equivalent) Maximum annual application rate is 10.6 lbs/A (2.12 lbs metallic copper equivalent)			

WHEAT, BARLEY & OATS			
DISEASE	APPLICATION RATE (lbs/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	COMMENT
Septoria Leaf Blotch Helminthosporium Spot Blotch	1.25 – 2.65 (.25 – .53 lbs Cu/A)	10	Make first application at early heading and follow with second application 10 days later.
RESTRICTIONS Maximum single application rate is 2.65 lbs/A (0.53 lbs metallic copper equivalent) Maximum annual application rate is 5.3 lbs/A (1.06 lbs metallic copper equivalent)			

GREENHOUSE AND SHADEHOUSE CROPS

NOTICE TO USER: COPPER HYDROXIDE 20% DF may be used in greenhouses and shadehouses to control diseases on some crops which appear on this label. The grower should bear in mind that the sensitivity of crops grown in greenhouses and shadehouses differ greatly from crops grown under field conditions. Neither the manufacturer nor seller has determined whether or not COPPER HYDROXIDE 20% DF can be used safely prior to commercial use. In a small area, apply the recommended rates to the plant in question, i.e. foliage, fruit, etc. and observe for 7 to 10 days for symptoms of phytotoxicity prior to commercial use.

Apply COPPER HYDROXIDE 20% DF according to specific rates given for these crops in pounds per acre or pounds per 100 gallons.

1.5 tablespoons of COPPER HYDROXIDE 20% DF per 1,000 square feet is equivalent to 1 pound per acre. 2/3 tablespoon of COPPER HYDROXIDE 20% DF per gallon of water is equivalent to 1 pound per 100 gallons. COPPER HYDROXIDE 20% DF should be applied in adequate water for thorough coverage of plant parts. Begin application at first sign of disease and repeat at specified intervals as needed; use shorter interval during periods when severe disease conditions persist.

CROP	DISEASE	RATE TBSP/ 1,000 sq.ft.	COMMENTS
Eggplant	Alternaria Blight, Anthracnose, Phomopsis	2 TBSP	Begin applications prior to development of disease symptoms. Repeat sprays at 7 to 10 day intervals or as needed depending on disease pressure.
Pepper	Bacterial Spot	1 – 2 TBSP	Begin applications when conditions first favor disease development and repeat at 3 to 10 day intervals as needed depending on disease severity. Use higher rates for severe disease.
Cucumber	Angular Leaf Spot, Downy Mildew	2 TBSP	Apply every 5 – 7 days when plants begin to vine.
Tomato	Early Blight, Late Blight Bacterial Speck Bacterial Spot, Anthracnose, Gray Leaf Mold, Septoria Leaf Spot	1 – 2 TBSP	Begin when disease first threatens and repeat at 3 to 10 day intervals or as needed depending on disease severity. Use higher rate for severe disease.

NOTICE: Seller warrants that the product conforms to its chemical description and is reasonably fit for the purpose stated on this label when used in accordance with directions under normal conditions of use; but neither this warranty nor any other warranty of merchantability or fitness for a particular purpose, expressed or implied, extends to the use of this product contrary to label instructions not reasonably foreseeable to seller; the buyer assumes the risk of any such use.