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J. R. Fisher Agrolinz, Inc. 6525 Quail Hollow, Suite 107 Memphis, TN 38120-309

Dear Mr. Fisher:

Subject: Add New Uses Cuproxat Flowable Copper Fungicide EPA Registration No. 42545-49 Your Submission Dated December 6, 1994

The amendment referred to above, submitted in connection with registration under section 3(c)(7)(A) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), is acceptable provided that you:

1. Submit/cite all data required for registration/reregistration of your product under FIFRA section 3(c)(5) or 4(a) when the Agency requires all registrants of similar products to submit such data.

2. Make the labeling changes listed below before you release the product for shipment bearing the amended labeling:

a. Under Macadamia Nuts, clarify the intent of the phrase "Except California". If this refers only to aerial application, state "Do not apply by air in California". If this restriction applies to any use, state "Do not apply to macadamia nuts in California.

b. For papaya, make a similar correction.

c. For pears, separate the last two sentences under Bull's Eye Rot into a separate paragraph since they pertain to all directions under pears.

d. Under sycamore, delete the second paragraph or indicate the "following crops".

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c. Remove the statement "Do not apply this product...area during application" from its current position and place it above the Agricultural Use Box.

3. Submit one (1) copy of your final printed labeling before you release the product for shipment. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Sincerely yours,

Cynthia Giles-Parker Product Manager (22) Fungicide-Herbicide Branch Registration Division (7505C)

Enclosure

#### AGROLINZ, INC.

#### CUPROXAT

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der the Federal Insecticide
gicide, and Rodenticide Act

registered under EPA Reg. No.

ACCEPTED with COMMENTS In EPA Letter Dated:

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#### FLOWABLE COPPER FUNGICIDE

#### NET CONTENTS: 1 GALLON

ACTIVE INGREDIENT:	
Basic Copper Sulfate	
INERT INGREDIENT:	
Total	100.0%

Equivalent to 1.6 pounds per gallon or 14.9% metallic copper.

#### KEEP OUT OF REACH OF CHILDREN CAUTION STATEMENT OF PRACTICAL TREATMENT

**IF SWALLOWED:** Call a physician or poison control center. Drink 1 to 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

**IF ON SKIN:** Wash with plenty of soap and water. Get medical attention if irritation persists.

IF IN EYES: Flush with plenty of water. Get medical attention if irritation persists.

#### SEE INSIDE BOOKLET FOR ADDITIONAL PRECAUTIONARY STATEMEN'IS.

**Before buying or using this product,** read "Warranty Limitations and Disclaimer" elsewhere on this label. If terms are not acceptable, return **unopened** package at once to selk.<sup>-</sup> for full refund of purchase price paid. Otherwise, use by the buyer or any other user constitutes acceptance of the terms under the Warranty Limitations and Disclaimer.

EPA Reg. No. 42545-49

#### EPA Est. No. 33526-AT-02

Manufactured By: AGROLINZ, INC. 6525 Quail Hollow, Suite 107 Memphis, TN U.S.A. 38120-1309 Phone (901) 756-4422 - Fax: (901) 757-9367

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#### PRECAUTIONARY STATEMENTS CAUTION HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful if swallowed or absorbed through the skin. May cause skin sensitization in certain individuals. Causes eye irritation. Avoid breathing spray mist. Avoid contact with skin, eyes, and clothing. In case of contact, immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists.

#### PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

- 1. Long-sleeved shirt and long pants
- 2. Waterproof gloves
- 3. Shoes plus socks

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 immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- 3. 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**

This pesticide is toxic to fish and aquatic organisms. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water marks. Drift and runoff from treated areas may be hazardous to fish and aquatic organisms in adjacent aquatic sites. Do not contaminate water when disposing of equipment washwaters.

#### FOR CHEMICAL SPILL, LEAK, FIRE, OR EXPOSURE CALL TOLL FREE 1-800-424-9300 AGRICULTURAL CHEMICAL

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Do not ship or store with foods, feeds, drugs or clothing.

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#### **DIRECTIONS FOR USE**

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

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 V orker Protection Standard, 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. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

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.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.

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

1. Coveralls

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2. Waterproof gloves

3. Shoes plus socks

#### NON-AGRICULTURAL USE REQUIREMENT

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.

Keep children, pets and other unprotected persons out of treated areas until sprays have dried.

#### STORAGE AND DISPOSAL

**STORAGE:** Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited. Store tightly closed container, out of reach of children and animals.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**CONTAINER DISPOSAL:** Triple rinse (or equivalent) adding rinsate to spray tank. Then offer for recycling or reconditioning, 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.

#### **GENERAL INFORMATION**

Use Cuproxat as noted below. Cuproxat is adaptable to spraying from all types of spray equipment. Depending on the equipment used and the specific crop (amount of foliage to be covered), the volume applied per acre will differ. For best results, thorough coverage is essential. For dilute, high volume sprays: use from 25 to 100 gallons of water per acre (GPA) for most vegetable and row crops, 400 to 800 GPA for fruit orchards, and up to 1500 GPA as may be required for large citrus groves. For concentrate ground sprays, apply from 5 to 20 GPA for most field crops; 25 to 100 GPA for fruit and nut crops. For aerial spraying, 3 to 15 GPA are commonly used. No additional surfactants are needed. Add Cuproxat slowly to a spray tank partially filled with water. Spreader-stickers, insecticides, nutrients, etc., should be added last. Cuproxat is compatible with many commercially formulated insecticides and fungicides. Since the number of combinations of pesticide mixtures is very large, it is advisable to check for compatibility and apply mixtures as soon as possible. Observe all cautions and limitations on labels of all products used in mixtures. The following specific instructions are based on general applications; . The recommendations of State Agricultural Extension Services should be closely followed as to timing, frequency and number of sprays per season.

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**HOMEOWNER USE:** One (1) level teaspoon of Cuproxat per gallon of water is equivalent to one (1) pint of Cuproxat per 100 gallons of water. Make application according to specific instructions given below for those crops where rates are given

in pints/hundred gallons. (For example: 2 pints Cuproxat per 100 gallons are equivalent to 2 level teaspoons Cuproxat per gallon.)

Use hydrated lime at the rate of 1 teaspoon to each gallon of spray solution for each lb/100 gallons recommended. (For example: A recommended rate of 4 lbs of hydrated lime/100 gallons of spray would be equivalent to 4 teaspoons per gallon of spray solution prepared.) Spray both the upper and lower leaf surfaces to the point of runoff. Use the highest label rates when weather conditions conducive to severe disease pressure exist.

#### **CHEMIGATION INSTRUCTIONS**

Apply this product only through sprinkler including center pivot, lateral move, end tow, side (sheet) roll, traveler, big gun, solid set, or hand move irrigation systems. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform 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.

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

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, 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.

#### IF IRRIGATION SYSTEM IS CONNECTED TO A PUBLIC WATER SYSTEM. THE FOLLOWING SAFETY DEVICES MUST BE IN PLACE IN ADDITION TO THE REQUIREMENTS LISTED ABOVE:

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, 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.

#### DIRECTIONS FOR CHEMIGATION USE

It is recommended that the pesticide supply tank be equipped for continuous agitation by either recirculation or a mechanical agitator.

#### Mixing Instructions:

Fill the supply cank with approximately one half of the amount of water to be used for dilution. With agitation, add any emulsifiable concentrate to be used, including any oils. Agitate thoroughly. Next add any spreader-sticker or other adjuvant, and agitate thoroughly. Then add the Cuproxat and any other flowable. Agitate thoroughly. Finally, add any wettable powder or dry flowable and agitate thoroughly. With agitation, add the remainder of the water to be used for application. Continue agitation during application until supply tank is, empty. Observe all precautions and limitations on the labels of all products used in the mixture.

#### Application:

For fixed position irrigation systems such as center pivot, big gun, etc., the pesticide should be applied towards the end of the irrigation period. Exact timing will depend on the desired pesticide application rate and calibration of the system being used. For moving systems, the pesticide should be applied continuously. In all cases, careful attention should be paid to thorough coverage of the crop during application.

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

#### **RECOMMENDED USES**

ALFALFA: Cercospora & Leptosphaerollina Leat Spots: Apply at 2.2/3 pints per acre 10-14 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.

ALMONDS: Brown Rot Blossom and Twig Blight (Monilinia): Use 2-2/3 to 4 pints Cuproxat for each 100 gallons of spray mixture during the early bloom stage (popcorn). A second application in late dormancy, before foliage buds swell, may be necessary when frequent rainfall occurs. Do not spray after 50% bloom or when trees are in leaf.

**Bacterial Blast (Pseudomonas):** Use 4 to 5-1/3 pints Cuproxat for each 100 gallons of spray mixture at dormant to early pink bud. For blast control in sprinkler irrigated orchards or where disease is severe, apply 2 to 4 Cuproxat sprays at the rate of 2/3 pint of product per 100 gallons of spray mixture. Apply at 2-week post-bloom intervals or just before sprinkling. Slight leaf injury may occur from post-bloom spray.

**APPLES:** Anthracnose: Use 4 to 5-1/3 pints Cuproxat for each 100 gallons of mixture. For red varieties, apply to foliage before or after harvest. For yellow varieties, apply to foliage after harvest once every 2 to 3 years as necessary.

**Bitter Rot, Black Rot, Blotch, Powdery Mildew:** 1/2 to 1-1/2 pints of Cuproxat plus 3 to 5 pounds hydrated lime for each 100 gallons of spray mixture. Begin at petal fall and repeat through fourth cover spray.

**Bulls-eye Rot:** Use 4 pints Cuproxat with a suitable spray oil for each 100 gallors of spray mixture. Apply after harvest.

**Fire Blight:** 1/3 to 1/2 pints Cuproxat for each 100 gallons of spray mixture; 2 pints of Cuproxat/acre in concentrate sprayers. Begin at 10 percent bloom. Repeat at 5 day intervals until late bloom is over.

CAUTION: Phytotoxicity may occur from late application. (Discontinue use when green-tip is one-half inch.)

**APRICOTS:** Coryneum Blight (Shot Hole) and Blossom Brown Rot: Apply at popcorn to full bloom using 2-2/3 to 5-1/3 pints Cuproxat for each 100 gallons of spray mixture as a full cover spray. To avoid spray injury, do not apply after bloom.

Scab: Apply 2-2/3 to 4 pints Cuproxat for each 100 gallons of spray mixture. For additional recommendations, consult state extension service specialists.

ARALLAS Anthonomas & Cercospora Leas Spots, Alternarias See Ornamental

ARBORVITAE: Blight, Leaf Spots: See Ornamental Plants and Trees.

ASTERS: Leaf Spots, Blights: See Ornamental Plants and Trees.

**AVOCADOS (FLORIDA):** Scab: Apply at a rate of 2-2/3 pints Cuproxat in 100 gallons spray mixture. When bloom buds begin to swell, make the first 5 applications at four (4) week intervals. Continue applications at monthly intervals for 5 to 6 additional applications. Do not apply later than 120 days after bloom. Consult state agricultural experiment stations for additional recommendations.

AZALEA: Cercospora Leaf Spot. Botrytis Blight, Phytophthora Dieback & Powdery Mildew: See Ornamental Plants and Trees. BANANASIE Sigatokanaa opisobyaanat 242/3 pints persecte and spallous obwater containing DS gailon der chumal of the polyton a 14 day sobedule throughout the websason depois at a standard and the polyton a 14 day sobedule throughout the set sason depois at a standard and the polyton and ancience the basal portion of the leaf crown. Apply during the first and second weeks after emergence a

**BEANS:** Anthracnose, Angular and other Leaf Spots, Downy Mildew, Bacterial Blight (Halo and Common): Use 1-1/3 to 4 pints per acre. First application when plants are six inches high. Apply on 7 to 14 day schedule, depending on local conditions.

**BEETS:** Leaf Blight and Spot Downy Mildew: Begin sprays of 2-2/3 to 6-2/3 pints/acre when diseases appear; repeat every 7 to 10 days.

BEGONIA: Xanthomonessi eat. Spot Anthracnose: See Ornamental Plant, and

**BLACKBERRIES:** (Santiams, Logons, Boysens, Marions, Auroras, Cascades, Chehalems and Thornless Evergreens): Leaf and Cane Spot: Use 2 pints for each 100 gallons of spray mixture. Spray first when leaf buds swell, again when flowers begin

to open.

Trees

Anthracnose: Use 2 pints of Cuproxat for each 100 gallons of spray mixture. Spray first when leaf buds begin to open, again when flower buds turn white. Repeat at 10-14 day intervals. Post-harvest, after pruning but before fall rains, apply 5-1/3 pints of Cuproxat with 1 quart superior-type oil for each 100 gallons of spray mixture. Dormant spray in spring after training, apply 5-1/3 pints with 1 quart superior-type oil for each 100 gallons of spray mixture.

**BOXWOOD: Wilt:** See Ornamental Plants and Trees.

BROCCOLI, BRUSSELS SPROUT, CABBAGE, AND CAULIFLOWER: Downy Mildew: In planted beds, apply 2/3 to 1-1/3 pints/acre in a minimum of 25 gallons of spray mixture per acre before diseases appear. Repeat at 7 to 10 day intervals, as (CABBAGE ONLY), Black Rot (Xanthomonas) & Black Leaf Spot needed. (Alternaria). Apply at 2/3 pints per acre in a minimum of 25 gallons of spray mixture per acre at 7 to 10 day intervals. (Caution: A slight reddening of older leaves may occur on broccoli and a slight flecking of wrapper leaves may occur on cabbage at the 2/3 pint rate). For control of diseases of these crops, begin applications after transplants are set in the field, or shortly after emergence of field-seeded crops or when conditions favor disease development.

BULBS (Easter Lily, Tulip, Gladiolus), Botrytis Blight See Ornamental Plants and and a second second

CACAO, Black Pod: 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 aughtrainfall areas at warving rates from 272/620 (60) in spenacre depending on disease seventize For diferences where 2 no approximation second ended during critical infection periods and at long intervals, dise 8 2/3 ton11/1/3 pints per acre according to disease pressure incidence and planting density.

CARNATIONS: Botrytis Blight, Leaf Spots, Leaf Spots, Leaf Gall: See Ornamental Plants and Trees.

CARROTS: Leaf Spot, Carrot Blight (Cercospora): When disease threatens, apply 2-2/3 pints per acre at 7 to 14 day intervals depending on disease severity.

**CELERY:** Early, Late, and Bacterial Blights: Apply as soon as plants are established in the field at 2-2/3 pints per acre, then every 5-7 days, depending on disease severity and weather. One to two quarts of a suitable agricultural spray oil per acre may be used as spreader-sticker.

CHERRY: Dead Bud: Apply 8 pints Cuproxat plus 1 pint superior-type oil for each 100 gallons of spray mixture in October (before heavy fall rains) and again in January. In orchards where the disease is severe, a spray should also be applied in

August.

**Brown Rot:** 2-2/3 to 4 pints Cuproxat for each 100 gallons of spray mixture. Apply in red bud to popcorn and late bloom stages.

Leaf Spots: Use 2-2/3 to 4 pints Cuproxat plus 4.0 pounds of hydrated lime for each 100 gallons of spray mixture. Spray at petal fall and make 1 or 2 harvest applications.

Shot Hole: 2-2/3 to 4 pints Cuproxat for each 100 gallons of spray mixture. Apply as a dormant spray.

**CHRYSANTHEMUMS: Botrytis Blight, Downy Mildew, Leaf Spots:** See Ornamental Plants and Trees.

CTTRUS: Melanose, Scab, Greasy Spot and Pink Pitting: Apply as a pre-bloom and post-bloom spray. Use 4 to 8 pints Cuprovats per acrea. Use lowerizate for light disease pressure and/or acreage with loweritmounts of foliage diseably and be anount of foliage to when disease pressure is severe and/or acreage that has a large amount of foliage to cover. Mix with sufficient water to insure thorough coverage of all foliage to the point of run off. For aerial application at 8 pints per acre rate, mix with a minimum of 10 gallons of water.

Brown Rot: Use 2 2/3 to 5 1/3 pint per acre. Use lower rate for light disease pressure and/or acreage with lower amounts of foliage. Use higher rate when disease pressure is severe and/or acreage that has a large amount of foliage to cover. Mix with sufficient water and insure thorough coverage of all foliage. Make a single application in fall before or just after first heavy rain. Apply also to bare ground up to one foot past skirt. (California only: in areas subject to copper injury, add 1/3 to 1 pound of high quality lime per 1/3 pints of Cuprocat).

Citrus Canker: Spray flushes 7 to 14 days after shoots begin to grow. Apply 1 quart per 100 gallons of water using enough sprays to thoroughly cover trees. For concentrate sprays, apply at equivalent rater in sufficient water to insure thorough overages found fruit may require an additional sufficient water to insure thorough pressure, the early spring and late (all this he can be not need spraying). Under the average disease pressure, each flush of new growth sputial sputial sprayed its spraying.

COFFEE: Iron Spot (Cercosporal coffeeGia) & Pink: Disease (Cordcium salmonicolor). Apply at 2.2/3 pints per acrease concentrate or dilute spray. Begin realment at start of wet/season and commendationally antervals of wet/season and commendations. Leaf Rust (Brazil): Apply at 422 Sto241/3 pints per acre for average tenary obligations. Leaf Rust (Brazil): Apply at 422 Sto241/3 pints per acre for average tenary obligations from September of start of sector depending on disease severity and rainfall conditions.

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#### COTONEASTER, Botrytis Blight: See Ornamental Plants and Trees

**CRANBERRY:** Fruit Rot: Apply at 10-2/3 pints per acre beginning in late bloom. One to two additional applications made at 10 to 12 day intervals may be required, depending on disease pressure. Follow the advice of the state agricultural extension service.

CUCURBITS: (Cantaloupe, Cucumbers, Honeydew Melons, Muskmelons, Pumpkins, Squash, Watermelons): Angular Leaf Spot, Anthracnose, Bacterial Wilt, Downy and Powdery Mildew, Gummy Stem Blight, other Leaf Spots and Scab: Apply 2 to 2-2/3 pints per acre. Start spraying when plants emerge or begin to vine, or before disease appears. Repeat at 7 to 10 day intervals. Spray to protect crop at all stages of development. Ground application of this product after planting and before plant emergence may help decrease infestation of Angular Leaf Spot.

**CURRANTS AND GOOSEBERRY:** Anthracnose, Leaf Spot: Apply 1-1/3 pints Cuproxat for each 100 gallons of spray mixture at leaf opening and repeat in 10 to 14 day intervals.

DAHLIAS: Botrytis Blight, Leaf Spots: See Ornamental Plants and Trees.

DOGWOOD: Anthracnose, Leaf Spots: See Ornamental Plants and Trees.

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ENDIVE, ESCAROLE: Downy Mildew: Apply 1 1/3 to 2 2/3 pints per acre. Begin treatment when disease first appears and repeat every. 7-10 days as needed to suppress disease.

EGGPLANT: Anthracnose, Downy Mildew, Early (Alternaria) Blight, Phomopsis Blight, Leaf Spots: Beginning in plant bed or in field before disease appears, apply 2-2/3 pints/acre. Repeat at 7 to 10 day intervals.

EUONYMUS, Botrytis Blight, Anthracnose: See Ornamental Plants and Trees.

FILBERTS: Bacterial Blight: Apply 2/3 4 gallons per acrease post-harvest spray in seasons of heavy rainfall, apply another spray when three-fourths of the leaves have thropped. Add:1 pint of superior type oil per 100 gallons of water a second structure spray.

GARDENIAS: Leaf Spots: See Ornamental Plants and Trees.

GERANIUMS: Botrytis Blight, Downy Mildew: See Ornamental Plants and Trees.



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GINSHNG: Alternative at a Stem Blight Coproxitinay be applied at SU 2 pints perfacted as a tank more with two pounds iprodione 50WR at 100 gallons of wates per acres. Begin iprodione-Cuproxat applications 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

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fungicides time to dry on the plants. Use of a spreader-sticker is advised. NOTE: Alternatic teaf & Stem Blight is most severe in humid conditions such as those found in the dense canopies of two, three and four old ginseng. Complete and thorough suray coverage is required for controls in the second

GLADIOLUS: Botrytis Blight, Downy Mildew, Leaf Spots: See Ornamental Plants and Trees.

**GRAPEFRUIT:** See Citrus.

**GRAPES:** Anthracnose: Use 2-2/3 pints Cuproxat for each 100 gallons of spray mixture on dormant vines in late spring. Repeat every 10 to 14 days after leaves form.

**Downy Mildew, Black Rot, Powdery Mildew, Bitter Rot:** Apply 2-2/3 to 3 pints Cuproxat for each 100 gallons of spray mixture plus 2-6 pounds hydrated lime. Spray when first leaves appear, repeat before blossom open, after petal fall and every two weeks thereafter.

For Downy Mildew control only: Apply 2-2/3 to 3 pints Cuproxat for each 100 gallons of spray mixture for the last two late summer applications following early season application of another fungicide. For exact timing, follow local recommendation for downy mildew infection.

**Dead Arm:** Use 3 pints Cuproxat plus 16 pounds of hydrated lime for each 100 gallons of spray mixture. Apply as soon as green tips show. **CAUTION:** Slight to severe foliage injury may occur on copper-sensitive varieties such as Concord, Delaware, Niagra and Rosette.)

HOLLYHOCKS: Leaf Spots, Leaf Blights: See Ornamental Plants and Trees.

HOPS, Downy Mildew: Apply 2 2/3 pints as a fungicide crown treatment (after pruning but before training) as needed. After training, additional fungicide treatments are needed at about 10 day intervals. Discontinue use 2 weeks before harvest.

IVY, Xanthiomonas Leaf Spot: See Ornamental Plants and Trees.

KIWIPRUIT \*Blossom Blight (Bud Rot)) Leaf Spot (Phomosis): Make two to three applications at 2-2/3 - 4 pints per acre during dormant . eason. Do not apply at time of or after leaf emergence.

KUMQUAT, LEMON, LIME: See Citrus.

**LETTUCE:** Anthracnose, Leaf Spots (Cercospora), Downy Mildew: Spray 1-1/3 to 2-2/3 pints/acre before diseases appear. Repeat at 7 to 10 day intervals.

LILAC: Bacterial Blights: See Ornamental Plants and Trees.

LILIES: Botrytis Blight: See Ornamental Plants and Trees.

MANGO (FLORIDA): Anthracnose: Apply monthly after fruit set until harvest at 2-2/3 pints Cuproxat per 100 gallons. Consult Extension Service for recommendations.

MAPLES: Leaf Spots: See Ornamental Plants and Trees.

MARIGOLDS: Leaf Spots: See Ornamental Plants and Trees.

NASTURTIUM: Anthracnose, Leaf Spots: See Ornamental Plants and Trees.

**NECTARINES:** See Peaches.

OAKS: Leaf Blister, (Taphrina): See Ornamental Plants and Trees.

**OLIVES:** Peacock Spot: Make first application at 2-2/3 to 4 pints Cuproxat for each 100 gallons of spray mixture, before winter rains fall. A second application in early spring should be made if disease is severe.

**ONIONS:** Downy Mildew, Leaf Spots: Use 2-2/3 pints/acre. Begin as soon as plants grow to 4 to 6 inches; repeat every 7 days.

**ORANGES;** See Citrus.

**ORNAMENTAL PLANTS AND TREES\*:** Apply 1-1/3 pints Cuproxat for each 100 gallons of spray mixture before diseases appear. Repeat every 7 to 10 days and after each rain.

\*On some varieties a discoloration may occur on foliage or blooms. To prevent residues on commercial plants, do not spray just before selling season.

CAUTION: Phytotoxicity may occur on certain varieties. Apply on a few plants at the recommended rate and observe for a few days to see if phytotoxicity will occur.

PACHYSANDRA, Volutella Leaf Blight: See Ornamental Plants and Trees.

PALMS: False Smut: See Ornamental Plants and Trees.

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PANSIES: Downy Mildew: See Ornamental Plants and Trees.

**PEACHES AND NECTARINES: Bacterial Disease (Blight) of Peaches, Leaf Curl, Shot Hole:** For dormant application, use 2-2/3 to 5-1/3 pints Cuproxat for each 100 gallons of spray mixture during pink or red bud to popcorn stages. Do not apply during blossom stages or when tree is in leaf. Post-bloom (AL, AR, FL, GA, LA, MS, NC, OK, SC AND TX), apply 1/3 pint Cuproxat for each 100 gallons of spray mixture at first and second cover spays. Do not use at rates above those recommended. **CAUTION:** Slight defoliation and spotting of leaves may occur from use in cover sprays.

**PEANUTS: Leaf Spot (Cercospora):** Begin spraying 40-45 days after planting or when first disease symptoms appear. Make ground or aerial application at 2 to 4 pints per acre. For aerial application, use 3-10 gallons of water. Continue applications at 10-14 day intervals. Use sufficient water to get adequate coverage. Cuproxat may be blended with flowable sulfur products.

**PEARS: Fire Blight:** (West of Mississippi River) Apply 1/3 pint Cuproxat for each 100 gallons of spray mixture or 1-1/3 pints Cuproxat per acre at 5 day intervals throughout bloom period. Excessive dosages may cause fruit russet.

Leaf Blight, Scab: Use 1 pint Cuproxat plus 2-1/2 pounds hydrated lime for each 100 gallons of spray mixture. Spray at the first three cover sprays.

**Bull's Eye Rot:** Apply 3 pints Cuproxat for each 100 gallons of spray mixture plus a suitable spray oil before harvest. Do not use on Anjou, Comice or Seckel varie(ies. Limits per acre: 2 pints for **Fire Blight**, 5-1/3 pints pre-harvest, 20 pints post-harvest.

**PEAS:** Powdery Mildew: Begin spray treatment before disease symptoms first appear. Use at 2-4 pints per acre according to disease severity. Repeat applications at weekly intervals.

**PECANS:** Scab: Apply 2 pints Cuproxat for each 100 gallons of spray mixture as foliar spray. Begin applications at end break (2-3 inches long). Make second application at pre-pollination. Thereafter, repeat at 2-4 week intervals as needed to maintain control.

PEONIES: Botrytis Blight, Leaf Spots: See Ornamental Plants and Trees.

**PEPPERS:** Anthracnose, Bacterial Spot, Early and Late Blight, Cercospora Leaf Spot (Frogeye Spot), Downy Mildew: Spray in plant bed before disease appears. Continue in field at 7 to 10 day intervals, especially during fruiting stage. Use 2-2/3 to 4 pints/acre.

PHLOX: Leaf Spots: See Ornamental Plants and Trees.

PINES: Brown Spot, Needle Blight: See Ornamental Plants and Trees.

PLUMS, PRUNES: Dormant spray for Brown Rot: Apply 5 pints Cuproxat plus 1-1/2 gallons spreader for each 100 gallons of spray mixture in dormant season. LIMITS: 25 pints/acre.

**Black Knot:** Apply 2 to 3 pints Cuproxat plus 8 to 12 pounds hydrated lime for  $eac^{1}$ . 100 gallons of spray mixture at green tip stage. Repeat at shuckshed and in two cover sprays if disease is serious.

**Blossom Blight, Leaf Spots:** Apply 1-1/2 to 2-1/2 pints Cuproxat plus 6 to 10 pounds hydrated lime for each 100 gallons of spray mixture; spray just before blossoms open; repeat at shuck split and again in 2 to 3 weeks. Over-spraying may injure tender foliage of some Japanese plums.

**POTATOES:** Early and Late Blight: Apply at 7 day intervals starting when plants emerge until two weeks before harvest. Follow local recommendations for application timing (weather observation). Use 1-1/3 to 2-1/3 pints per acre in those locations where disease is light and up to 4 to 5-1/3 pints per acre where disease is more severe.

PUMPKINS & SQUASH: Powdery Mildew: Begin application when plants are three weeks old or when first disease symptoms appear. Use at weekly intervals at 2 to 4 pints per acre depending on disease severity.

PYRACANTHA, Fireblight, Scab: See Ornamental Plants and Trees.

RHODODENDRONS: Leaf Blight, Leaf Spots: See Ornamental Plants and Trees.

**ROSES:** Anthracnose, Black Spot, Downy and Powdery Mildew, Leaf Spots, Stem **Canker:** See Ornamental Plants and Trees.

SPINAGELS Anthracouses Cercosporal enchots Downy Mildew. White Rust: Apply 2.2/9ac/04/9Joints prevament Reuningentration and repeat every contrational and repeat

STOCK: Leaf Spots: See Ornamental Plants and Trees.

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**STRAWBERRIES: Downy Mildew, Leaf Blight, Scorch or Spot:** After leaves form, spray 2-2/3 to 3 pints Cuproxat in 100 gallons of water per acre at 10 to 14 day intervals.

Anthracnose: Use 2-2/3 to 3 pints per acre plus 2 to 3 pounds hydrated lime/100 gallons pre-blossom. Post-harvest; spray foliage with 3 pints per acre plus 6 pounds hydrated lime per 100 gallons.

**SUGAR BEETS: (Cercospora) Leaf Spot:** Start spray when disease threatens and continue for 4 to 5 applications. Spray every 7-14 days depending on weather conditions at 2-2/3 to 6-2/3 pints per acre depending on disease severity. Addition of a suitable agricultural spray oil is recommended at 2 quarts per acre.

SWEET PEAS: Downy Mildew, Leaf Blights, Leaf Spots: See Peas.

SYCAMORE, Anthracnose: Make two applications using 2 2/3 to 4 pints per 100 gallons as a full cover spray Make first application at bud crack and second application 7 - 14 days later at 10% leaf expansion To the following crops apply Cuproxat at 141/3 pints per 100 gallons as a full cover spray beginning at first sign of disease. Repeat at intervals of 7 to 14 days depending on rainfall and disease severity.

TANGERINE, TANGELO: See Citrus.

**TOMATOES:** Early Blight, Late Blight: Start spraying before disease appears Apply 2-2/3 to 4 pints per acre at 7 to 10 day intervals.

**Bacterial Speck:** Apply 2-2/3 pints per acre at 10-30 day intervals beginning when the disease threatens. Use more frequent applications when disease pressure is higt.

Anthracnose, Bacterial Spot: When disease threatens, apply 2-2/3 to 5-1/3 pints per acre at 7 to 10 day intervals, more frequently when disease is severe. May be combined with maneb or mancozeb. When used in combination with maneb or mancozeb, do not apply within 5 days of harvest.

TULIPS: Botyrtis Blight: See Ornamental Plants and Trees.

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VIOLETS: Downy Mildew: See Ornamental Plants and Trees.

VIRGINIA CREEPER: Downy Mildew: See Ornamental Plants and Trees.

WALNUT: Walnut Blight: 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. Apply 2-2/3 to 4 pints Cuproxat for each 100 gallons of spray mixture.

WHEATE& BARLEY, Septomia, Leat Blotch & Helminthosporum Spot Blotch: Apply 2 to 2 2/3 pints per acre. Make first application at early heading and follow with second application 10 days later.

YUCCA (Adams Needle), Carcospora & Septoria Leaf Spois: See Ornamental Plants and Trees.

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