

Reg # 19713-321

PM-2276 REC-1722



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

APR 15 1994

Barbara Brown
DREXEL CHEMICAL CO.
BOX 9306
MEMPHIS, TN 38109

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Subject: Label Amendment Submission of 11/10/93 in Response to PR Notice 93-7
EPA Reg. No. 19713-321
DREXEL KOP-50% W.P.

Dear Registrant:

The labeling cited above and submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is accepted subject to the comments reflected on the enclosed sheet. A copy of your proposed labeling stamped "ACCEPTED WITH COMMENTS" is enclosed.

WHAT THIS ACCEPTANCE MEANS:

Based on your certification, the Agency has accepted the labeling changes that are necessary to comply with the Worker Protection Standard (WPS) labeling requirements of 40 CFR part 156, subpart K, described in PR Notices 93-7 and 93-11. Any other labeling changes submitted in connection with this amendment application but not directly related to compliance with the WPS have not been reviewed or accepted by the Agency. If you wish to make such changes, you must submit a separate amendment application proposing them. If your product is currently suspended, the acceptance of this labeling amendment does not affect the suspension in any way.

WHAT YOU NEED TO DO NEXT:

By the next label printing make all the specified changes to your labeling. Send to EPA one (1) copy of the final printed labeling:

- BEFORE selling or distributing any product bearing the final printed labeling
- AND
- WITHIN one year from date of this acceptance.



Recycled/Recyclable
Printed with Soy/Candia Ink on paper that
contains at least 50% recycled fiber

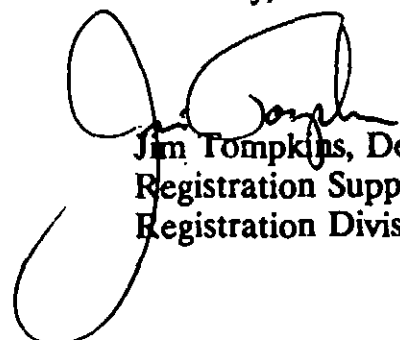
Submit the final printed labeling via the U.S. Postal Service to:

Document Processing Desk (FIN-LABEL)
Office of Pesticide Programs (7505C)
U.S. Environmental Protection Agency
401 M Street, SW
Washington, D.C. 20460-0001

Hand or courier deliveries of final printed labeling may be made to:

Document Processing Desk (FIN-LABEL)
Office of Pesticide Programs
Room 266A, Crystal Mall 2
1921 Jefferson Davis Highway
Arlington, VA 22202

Sincerely,



Jim Tompkins, Deputy Chief
Registration Support Branch
Registration Division (7505W)

Attachment

DREXEL CHEMICAL CO.
19713-321 11/10/93
DREXEL KOP-50% W.P.
Original Submission

Remove the statement "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." from its current position within the Agricultural Use Box and place it above the Agricultural Use Box.

You must add the following sentence to the section of your labeling that discusses the requirements for posting signs for chemigation: "This sign is in addition to any sign posted to comply with the Worker Protection Standard."

Correct the typographical errors circled on your proposed label.

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DREXEL
KOP-HYDROXIDE 50
Agricultural Fungicide-Bactericide

ACTIVE INGREDIENT:
Copper Hydroxide77.0%
INERT INGREDIENTS:23.0%
TOTAL:100.0%
*(Metallic copper equivalent 50%)

KEEP OUT OF REACH OF CHILDREN
DANGER/PELIGRO

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

For additional information, see Statement of Practical Treatment

PRECAUCION-AL-USUARIO: Si usted no lee ingles, no use este producto hasta que la etiqueta le haya sido explicado ampliamente.

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: Drink promptly a large quantity of milk, egg white, gelatin solution, or if these are not available, large quantities of water. Avoid alcohol.

IF IN EYES: Hold eyelids open and flush with water for 15 minutes. Get medical attention.

IF INHALED: Remove victim to fresh air. If not breathing, apply artificial respiration, preferably mouth-to-mouth. Get medical attention.

IF ON SKIN: Wash with plenty of soap and water. Get medical attention.

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

EPA Reg. No. 19713-321
EPA Est. No. 19713-GA-1

Manufactured By:
Drexel Chemical Company
P.O. BOX 9306, MEMPHIS, TN 38109-0306

ACCEPTED
with COMMENTS
in EPA Letter Dated
APR 15 1994

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.
19713-321

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PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER. Corrosive. Causes irreversible eye damage. Do not get in eyes. ~~Wear goggles, face shield, or safety glasses.~~ Causes skin irritation. Harmful if swallowed, absorbed through the skin, or inhaled. May cause skin sensitization reactions in certain individuals. Avoid contact with the skin, eyes, or clothing. Avoid breathing dust. ~~Protective clothing should be worn. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.~~

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

Long-sleeved shirt and long pants

Waterproof gloves

Shoes plus socks

Protective eyewear

Dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C)

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.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic organisms. 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 washwaters.

Drift and runoff from treated areas may be hazardous to fish and aquatic organisms in adjacent sites. Do not allow rinsate from cleaning of equipment or disposed material to enter surface or ground water.

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.

RE-ENTRY-STATEMENT

~~Do not enter treated areas without protective clothing until sprays have dried. Because certain states may require more restrictive re-entry intervals for various crops treated with this product, consult your State Department of Agriculture for further information.~~

~~Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. Indicate specific oral warning which inform workers of areas or fields that may not be entered without specific protective clothing, period of time field must be vacated and appropriate actions to take in case of~~

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accidental exposure. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. Written and oral warnings must include the following information: DANGER-Area treated with KOP-50%-WP on (date of application). Do not enter without appropriate protective clothing until sprays have dried. In case of accidental exposure, follow instructions under Statement of Practical Treatment section.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box 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 48 hours.

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

Coveralls

Waterproof gloves

Shoes plus socks

Protective eyewear

GENERAL INFORMATION

Use KOP-Hydroxide 50 according to use directions below. KOP-Hydroxide 50 is adaptable to spraying from aircraft and ground spraying equipment.

Depending upon equipment used and the specific crop, the volume applied per acre will differ. Refer to the general recommendation volume table below.

Minimum Recommended Spray Volume in Gallons per Acre (GPA)
to be used when applying KOP-Hydroxide 50

	Aerial	Dilute	Ground Concentrate
Vegetables	3	20	—
Field Crops	3	20	—
Vines	5	150	50
Tree	10	400	50
Citrus	10	800	100
			(50 Florida)

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GENERAL CHEMIGATION INSTRUCTIONS

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 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.

Posting of areas to be chemigated is required when 1) any part of a treated area is within 300 feet of sensitive areas such as residential 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 2) when the chemigated area is open to the public such as golf courses or retail greenhouses.

Posting must conform to the following requirements:

Treated areas shall be posted with signs at all usual points of entry and along likely routes of approach from the listed sensitive areas. When there are no usual points of entry, signs must be posted in the corners of the treated areas and in any location affording maximum visibility to the sensitive areas.

The printed side of the sign should face away from the treated area towards the sensitive area. The signs shall be printed in English. Signs must be posted prior to application and must remain posted until foliage has dried and soil surface water has disappeared. Signs may remain in place indefinitely as long as they are composed of materials to prevent deterioration and maintain legibility for the duration of the posting period.

All words shall consist of letters at least 2½ inches tall, and all letters and the symbol shall be in a color which sharply contrasts with their immediate background. At the top of the sign shall be the words KEEP OUT, followed by an octagonal stop sign symbol at least 8 inches in diameter containing the word STOP. Below the symbol shall be the words PESTICIDES IN IRRIGATION WATER.

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CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS

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

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, 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 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 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.

When mixing, fill nurse tank half full of water. Add KOP-Hydroxide 50 slowly to tank while hydraulic or mechanical agitation is operating and continue filling with water. Stickers, spreaders, insecticides, nutrients, etc., should be added last. If compatibility is in question, use the compatibility jar test before mixing a whole tank. Because of the wide variety of possible combinations which can be encountered, observe all cautions and limitations on the labels of all products used in the mixture.

KOP-Hydroxide 50 should be added through a traveling irrigation system continuously or at the last 30 minutes of solid set or hand moved irrigation systems. Agitation is recommended.

SPRINKLER CHEMIGATION

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 not a water pump, 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.

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

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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.

When mixing, fill nurse tank half full of water. Add KOP-Hydroxide 50 slowly to tank while hydraulic or mechanical agitation is operating and continue filling with water. Stickers, spreaders, insecticides, nutrients, etc., should be added last. If compatibility is in question use the compatibility jar test before mixing a whole tank. Because of the wide variety of possible combinations which can be encountered, observe all cautions and limitations on the labels of all products used in the mixture. KOP-Hydroxide 50 should be added through a traveling irrigation system continuously or at the last 30 minutes of solid set or hand moved irrigation systems. Agitation is recommended.

CROP CLASSIFICATION

CITRUS: Grapefruit, Lemon, Lime, Orange, Tangelo, and Tangerine.

FIELD CROPS: Alfalfa, Barley, Cantaloupes, Honeydew, Muskmelon, Peanut, Potato, Strawberry Sugar Beet, Watermelon, and Wheat.

TREE CROPS: Almond, Apple, Apricot, Avocado, Banana, Cacao, Cherry, Coffee, Filberts, Live Oak, Mango, Nectarine, Olive, Peach, Pear, Plum, Prune, Sycamore, and Walnut.

VEGETABLES: Beans, Broccoli, Brussels Sprout, Cabbage, Carrot, Cauliflower, Celery, Cucumber, Eggplant, Onion, Peas, Peppers, Pumpkin, Squash and Tomato.

VINES: Blackberry, Cranberry, Currants, Gooseberry, Grape, and Hops.

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KOP-Hydroxide 50 may be applied as an aerial, ground dilute or ground concentrate spray unless specifically directed otherwise by crop.

When selecting a use rate for KOP-Hydroxide 50, 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. In addition, use the higher rates for large mature tree crops.

The per acre use rate of KOP-Hydroxide 50 is applicable for both dilute and concentrate spraying. Consult the KOP-Hydroxide 50 label for specific rates and timing of application by crop.

Complete spray coverage is essential to assure optimum performance from KOP-Hydroxide 50. When treating on a concentrate basis or by aerial application, unless you had specific previous experience, it is advisable to test for compatibility and crop tolerance prior to full scale commercial utilization.

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

When mixing, fill spray tank one-half full with water. Add KOP-Hydroxide 50 slowly to tank while hydraulic or mechanical agitation is operating and continue filling with water. Spreaders, stickers, spray and crop oil (cleared for application to growing crops) should be added last. If compatibility is in question, use the compatibility jar test before mixing a whole tank.

NOTE: KOP-Hydroxide 50 SHOULD NOT BE APPLIED IN A SPRAY SOLUTION HAVING A PH LESS THAN 6.5 OR GREATER THAN 9.0 AS PHYTOTOXICITY MAY OCCUR.

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 Add KOP-Hydroxide 50 resulting in possible phytotoxicity or loss of effectiveness.

The following specific instructions are based on general application. 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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APPLICATION FOR FROST INJURY PROTECTION

BACTERIAL ICE NUCLEATION INHIBITOR:

Application of KOP-Hydroxide 50 made to all crops listed on this label at rates and stages of growth indicated on this label, at least 24 hours prior to anticipated frost conditions, will afford control of ice nucleating bacteria (*Pseudomonas syringae*, *Erwinia herbicola*, and *Pseudomonas fluorescens*) and may therefore provide some protection against light frost. Not recommended for those geographical areas where weather conditions favor severe frost.

Disease	Rate/Area	CITRUS Use Instructions
Melanose, Scab, Pink Pitting	4-12 lbs.	Apply as pre-bloom and postbloom sprays.
Greasy Spot	2-6 lbs.	Use higher rates when conditions favor disease.
Brown Rot (California only)	4-8 lbs.	Begin application in fall and continue 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 pound of high quality lime per pound of KOP-50% W.P.
Phytophthora	1 lb.	Mix with 1 gallon of water and paint trunks of trees from the soil surface to the lowest scaffold limbs. Apply in May prior to summer rains and/or in the fall prior to wrapping trees for freeze protection. Treatment serves for protection for up to one year but does not cure existing infections.

Crop	Disease	FIELD CROPS	Use Instructions
		Rate/A	
Alfalfa	Cercospora & Leptosphaerulina Leaf Spots	2 lbs.	Apply 10-14 days before each harvest or earlier if disease threatens. Note: Spraying injury may occur with sensitive varieties such as Lahontan.

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Cantaloupes. Honeydews. Muskmelons	Downy Mildew	2 lbs.	Begin application when condition are favorable for disease development and repeat at 5-7 day intervals as needed depending on disease severity.
Peanut	Cercospora Leaf Spot	1.5-3 lbs.	Begin spraying at 35-40 days after planting or when disease symptoms first appear and repeat at 10-14 day intervals as needed. Reduce sprays to 7 day intervals during humid weather. Use higher rates when weather conditions favor drift. KOP-50% W.P. may be blended by dealers and should be applied at rates equivalent to the above. KOP-50% W.P. may be blended with talc and/or sulfur to make a 3 to 10% dust.
Potatoes	Early & Late	1-1.5	Apply at 7-10 day intervals starting when plants are 6 inches high until 2 weeks before harvest in locations where disease is light and up to 3-4 lbs./A where disease is more severe.
Strawberries	Leaf Spot & Leaf Blight	2-3 lbs.	Begin application when plants are established and continue on a weekly schedule throughout the season. Note: Discontinue application if signs of crop injury appear.
Sugar Beets	Cercospora Leaf Spot	2-5 lbs.	Begin application when conditions first favor disease development and repeat at 10-14 day intervals as needed. Use the higher rate when disease is severe. Addition of Surf-Ac 820 or a suitable agricultural oil is recommended.

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Watermelon	Anthracnose	2 lbs.	Apply as soon as plants become established in the field and repeat at weekly intervals as needed depending upon disease severity.
	Downy Mildew	1.5-3	Apply as soon as plants become lbs. established in the field and repeat at weekly intervals as needed depending upon disease severity. Use higher rates when conditions favor disease.
Wheat and Barley	Septoria Leaf Blotch & Helminthosporium Spot Blotch	1.5-2 lbs.	Make first application at early heading and follow with second spray 10 days later. Use the higher rates when conditions favor disease.

TREE CROPS			
Crop	Disease	Rate/A	Use Instructions
Almonds	Coryneum Blight.	8-12 lbs.	Dormant application: Apply before foliage buds begin to swell. Use higher rates when rainfall is heavy and disease pressure is high.
	Blossom Brown Rot	6-8 lbs.	Early bloom (popcorn) application. Apply before full bloom. Use higher rates when rainfall is heavy and disease pressure is high.
	Bacterial Blast (Pseudomonas)	12-16 lbs.	Note: To avoid plant injury do not use above rate after full bloom. Apply at dormant to early pink bud. For control in sprinkler irrigated orchards or where disease is severe, apply 1 lb./A at 2 week postbloom intervals or just before sprinkling. Note: Injury may occur from postbloom sprays, especially on Neplus varieties.

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Apple (Except California)	Anthracnose, European Canker, Pseudomonas	12-16 lbs.	injury	Apply before fall rains. Use higher rates under severe disease conditions Note: Use on yellow varieties may cause discoloration. To avoid, pick before spraying. Make application between silver- tip and green tip. Apply as a full cover spray. Note: Crop may occur from late application: discontinue use when green tip reaches 1-2 inch. Mix in 100 gallons of water. Apply 4 gallons of suspension as a drench, on the lower trunk area of each tree. Apply either in early spring or in late fall after harvest. Note: Do not use if soil pH is below 5.5 since copper toxicity may result.
	Fireblight	8-16 lbs.		
	Crown or Collar Rot	4 lbs.		
Apricots	Coryneum Blight (Shot Hole), Blossom Brown Rot	8-12 lbs.		Apply at popcorn to full bloom. use higher rates when conditions favor disease. Note: Excessive dosages may cause fruit russet.
Avocados	Scab	8-12 lbs.		Apply when bloom buds begin to swell and continue application at monthly intervals for 5 to 6 applications. Use higher rate when conditions favor disease.
Bananas	Sigatoka	2 lbs.		Apply by air in 3 gallons of water combining 0.5 gallons of a suit- able agricultural spray oil. Apply on a 14-day schedule throughout the wet season. Apply at 21-day intervals during dry periods. Mix in 100 gallons of water (4 lbs per acre) directly to the fruit stem and include the basal portion of the leaf crown. apply during the first and second weeks after fruit emergence.
	Black Pitting	4 lbs.		

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Cacao	Black Pod	2-4.5 lbs.	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 depending on disease severity. for drier areas, where 2 to 4 applications are recommended during critical infection periods and at long intervals, use 8.5 lbs./A. according to disease incidence and planting density.
Cherry	Dead Bud (Pseudomonas syringae) and Coryneum Blight	8-12 lbs.	Make first application in fall before heavy rains and a second at late dormant. In orchards where the disease is severe, a spray should also be applied shortly after harvest. Add 1 pint of superior-type oil per 100 gallons of water as a dilute spray.
	Brown Rot, Blossom Blight	8-12 lbs.	Apply a full cover spray at popcorn stage and a second application at full bloom.

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Coffee	Coffee Berry Disease (Collectotrichum coffeanum)	6-8 lbs.	Apply first spray after flowering and before onset of long rains and then at 28 day intervals until picking. Use higher rates when rainfall is heavy and disease pressure is high.
	Bacterial Blight (Pseudomonas syringae)	6-8 lbs.	Begin spray program before the onset of the long rains and continue throughout the rainy season at 14 to 21 day intervals. The critical time of spraying to control this disease is just before, during and after flower(s), especially when coinciding with wet weather. Use higher rates when rainfall is heavy and disease pressure is high.
	Leaf Rust (Hemileia vastatrix)	2-4 lbs.	Apply before the onset of rain and then at 21-day intervals while rains continue. Use higher rates when rainfall is heavy and disease pressure is high.
	Iron Spot (Cercospora coffeicola) and and Pink Disease (Corticium salmonicolor)	2 lbs.	Use concentrate or dilute spray. begin treatment at the start of wet season and continue at monthly intervals for three applications.
Filberts	Bacterial Blight	4-6 lbs.	Apply as a postharvest spray. In seasons of heavy rainfall apply a second spray when three-fourths of the leaves have dropped. Add 1 pint of superior-type oil per 100 gallons of water.
Mango (Florida)	Anthracnose	8 lbs.	Apply monthly after fruit set until harvest.
Olives (California)	Peacock Spot	8-12 lbs.	Make first application before winter rainfall. A second application in early spring should be made if disease is severe. Apply the high rate for heavy disease pressure or when conditions favor such.

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Peaches. Nectarines	Leaf Curl. Coryneum Blight (Shothole)	8-16 lbs.	Apply at leaf fall. Use the highest rate when rainfall is very heavy and disease pressure is high. May be used with (Shothole) agricultural spray oil. Full cover spray at pink bud. Application at this time affords some control of Leaf Curl and coryneum Blight. Post Bloom application applied at first and second cover sprays. Apply as a dormant spray. Note: Do not spray three weeks prior to harvest. Use only recommended rates. Spotting of leaves and defoliation may occur from use in cover sprays.
	Brown Rot & Blossom	8-12 lbs.	
	Bacterial Spot	1 lb. 8 lbs.	
Pears	Fire Blight	1 lb.	Apply at 5 day intervals throughout the bloom period. Apply before fall rains and again during dormancy before spring growth starts. Use the higher when disease pressure is high or when conditions favor the development of such. Note: Excessive dosages may cause fruit russet.
rates	Pseudomonas Blight	12-16 lbs.	
Plums & Prunes	Coryneum Blight (Shot Hole)	8-16 lbs.	Apply as a dormant spray. Use the higher rate when rainfall is heavy and/or disease pressure is high. Apply full cover application at pink, red or early white stage. use the higher rate when disease pressure is heavy or conditions favor the development of such.
	Brown Rot and Blossom Blight	8-12 lbs.	
Walnut	Walnut Blight	8-12.5 lbs.	Apply first application spray at early pre-bloom prior to when catkins are partially expanded. Make additional application during bloom and early nutlet stage or as needed if frequent rainfall occurs.

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Live Oak	Ball Moss	6 lbs.	Apply in the spring when ball moss is actively growing using 1.5 gallons of spray per foot of tree height. Make sure to wet ball moss tufts thoroughly. A second application may be required after 12 months. Note: KOP-Hydroxide 50 may be injurious to ornamentals under Live Oaks.
Sycamore	Anthracnose	2-3 lbs.	Apply as a full spray. Apply in 100 gallons of water or sufficient volume for thorough coverage. Make first application at bud crack and second application at 10% expansion.

VEGETABLES			
Crop	Disease	Rate/A	Use Instructions
Beans	Bacterial Blight (Halo & Common)	1-3 lbs.	Use the higher rate for more severe disease. For protective sprays, make first application when plants are six inches high; repeat on a 7-14 day schedule depending upon local conditions.
Broccoli, Brussels Sprouts, Cabbage..... Cauliflower	Black Rot (Xanthomonas) & Black Leaf Spot (Alternaria) Downy Mildew (Cabbage Only)	2 lbs. 0.5-1 lb.	Apply at 7 to 10 day intervals. For control of diseases of these crops, begin application after transplants are set in the field, or shortly after emergence of field seeded crops or when conditions favor disease development. Use higher rates when conditions favor disease. Note: Reddening of older leaves may occur on Broccoli and a flecking of wrapper per leaves may occur on Cabbage.
Carrots	Cercospora Leaf Spot	2 lbs.	Begin application when disease first threatens and repeat at 7-14 day intervals as needed depending on disease.

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Celery	Cercospora Early Blight. Septoria. Late Blight & Bacterial Blight	2 lbs.	Begin application as plants are first established in the field. repeating at 5-7 day intervals depending on disease severity and environmental conditions.
Cucumber	Angular Leaf Spot and Downy Mildew	1.5-2 lbs.	Apply weekly when plants begin to vine.
Eggplant (Except California)	Alternaria Blight, Anthracnose Phomopsis	2 lbs.	Begin application prior to of disease symptoms. Repeat sprays 7-10 day intervals or as needed depending on disease severity.
Onion	Purple Blotch & Downy Mildew	2 lbs.	Begin when plants are 4-6 inches high and repeat at 7-10 day intervals as needed depending upon disease pressure.
Peas	Powdery Mildew	1.5-3 lbs.	Begin application when disease symptoms first appear and repeat at weekly intervals as needed. Use higher rate for more severe disease.
Peppers	Bacterial Spot	2-3 lbs.	begin application when conditions first favor disease development and repeat at 5-10 day intervals as needed depending on disease severity. Use higher rates for severe disease.
Pumpkin & Squash	Powdery Mildew	1.5-3 lbs.	Begin application when plants are three weeks old or when disease first appear and repeat at 7 day intervals as needed to maintain control. Use the higher rates if disease is heavy or conditions favor such.

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Tomatoes	Early and Late Blight	2-3 lbs.	Begin when disease first threatens and repeat at 7-10 day intervals or as needed depending on disease severity. Use higher rate for severe disease.
	Bacterial Speck	2 lbs.	Begin applications when disease first threatens and repeat at 10-30 day intervals or as needed depending on severity.
	Bacterial Spot, Anthracnose, Gray Leaf Mold & Septoria Leaf Spot	2-4 lbs.	Begin application when disease threatens and repeat at 7-10 day intervals. Note: May be combined with no more than 1.6 qt/A. of Manzi Flowable and no more than 2 lb/A. of Maneb 80W.

VINES			
Crop	Disease	Rate/A	Use instructions
Black-berries	Leaf and Cane Spot	4 lbs.	Apply delayed dormant spray after training in the spring. Make fall application after harvest. Add 1 quart of crop oil per acre.
Cranberry	Fruit Rot	8 lbs.	Make first application in late bloom. One or two additional applications at 10-14 day intervals may be required depending on disease severity.
Currants, Gooseberry	Leaf Spot	10 lbs.	Make three applications starting after harvest followed by application before bloom, and after petal fall.
Grapes	Black Rot, Powdery Mildew & Downy Mildew	2 lbs.	Begin application at bud break with subsequent application throughout the season depending upon disease severity. Note: Foliage injury may occur on copper sensitive varieties such as concord. Delaware. Niagara, and rosette. Either test for sensitivity or add 1-3 lbs. of hydrated lime/lb. of KOP-Hydroxide 50

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Hops	Downy Mildew	2 lbs.	Make crown treatment after pruning, but before training. After training, additional treatments are needed at about 10 day intervals. Note: Discontinue use 2 weeks before harvest.
Raspberries (Except California)	Leaf and Cane Spot	4 lbs.	Apply delayed dormant spray after training in the spring. Make fall application after harvest. Add 1 quart of crop oil per acre.

ORNAMENTALS

For control of disease on ornamentals in Greenhouses, Fields and Nurseries—Apply as a thorough coverage spray using 1 lb. KOP-Hydroxide 50 per 100 gallons of water. Begin application at first sign of disease and repeat at 7 to 14 day intervals as needed; use shorter interval during periods of frequent rains or when severe disease conditions persist.

One level teaspoon of KOP-Hydroxide 50 per gallon of water is equivalent to one pound per 100 gallons.

KOP-Hydroxide 50 may be used as a maintenance spray. KOP-Hydroxide 50 may be used alone or in combination with other fungicides such as dithiocarbamates.

Crop	Disease
Aralia	Xanthomas & Cercospora leafspots, Alternaria
Azalea*	Cercospora leafspot, Botrytis blight, Phytophthora dieback and Powdery Mildew.
Begonia Bulbs (Easter Lily, Tulip, Gladiolus)	Xanthomonas Leafspot, Anthracnose, Botrytis Blight
Carnation*	Alternaria Blight, Pseudomonas Leafspot, Botrytis Blight
Chrysanthemum*	Septoria Leafspot, Botrytis Blight
Cotoneaster	Botrytis Blight
Euonymus	Botrytis Blight, Anthracnose
Ivy*	Xanthomonas Leafspot
Pachysandra	Volutella Leaf Blight
Periwinkle	Phomopsis Stem Blight
Pyracantha	Fireblight, Scab
Rose*	Powdery Mildew, Black Spot
Yucca (Adam's Needle)	Cercospora and Septoria Leafspot

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*Discoloration of foliage and/or blooms have been noted on some varieties. To prevent residues on commercial plants, do not spray just before selling season.

Note: Phytotoxicity may depend on varietal differences. If unfamiliar with the use of KOP-Hydroxide 50, apply the recommended rate to a few plants and observe after 7 to 10 days for symptoms of phytotoxicity.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. Store in a cool, dry place.

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of federal law. Wastes resulting from the use of this product may be disposed of on-site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Completely empty bag into application equipment. Then 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.

WARRANTY—CONDITION OF SALE

OUR RECOMMENDATIONS FOR USE of this product are based upon tests believed reliable. Follow directions carefully. Timing and method of application, weather and crop conditions, mixtures with other chemicals not specifically recommended, and other influencing factors in the use of this product are beyond the control of the Seller. Buyer assumes all risks of use, storage and handling of this material not in strict accordance with directions given herewith.

In no case shall Drexel or the Seller be liable for consequential, special or indirect damages resulting from the use or handling of this product when such use and/or handling is not in strict accordance with directions given herewith. The foregoing is a condition of sale by Drexel Chemical Company and is accepted as such by the Buyer.

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