



# Kocide<sup>®</sup> LF

FUNGICIDE/BACTERICIDE

**ACTIVE INGREDIENT**

Copper Hydroxide..... 23%

**INERT INGREDIENTS**..... 77%

**TOTAL**.....100%

Metallic Copper Equivalent 15%  
2.4 Pounds Copper Hydroxide Per Gallon

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION**

**STATEMENT OF PRACTICAL TREATMENT**

**IF IN EYES:** Flush eyes with plenty of water. Call physician if irritation persists.

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

**IF SWALLOWED:** Call a physician or poison control center. Drink one or two 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.

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

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

**For medical emergencies involving this product, call toll free 1-800-237-1854.**

See Label for Additional Precautions and Directions for Use

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

Causes moderate eye injury. Harmful if swallowed or absorbed through the skin. Avoid contact with the skin, eyes or clothing. Avoid breathing vapor or spray mist.

## PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

- Long sleeved shirt and long pants
- Waterproof gloves
- Chemical-resistance footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

Follow the 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:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on 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 mark. Drift and runoff from treated areas may be hazardous to fish and aquatic organisms in adjacent aquatic 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.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

## AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for 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 intervals. 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 (REI) of 24 hours without required PPE.

The following equipment and precautions must be followed for 7 days following the application of this product:

- An eye-flush container, designed specifically for flushing eyes, must be available at the WPS decontamination site for workers entering the area treated with copper hydroxide.
- Notify workers of the application by warning them orally that residues in the treated areas may be highly irritating to their eyes and to take precautions such as refraining from rubbing their eyes and if they get residues in their eyes they should immediately flush their eyes using the eye-flush container.

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
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

## STORAGE AND DISPOSAL

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

**STORAGE:** 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. 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:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incinerator, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

## GENERAL INSTRUCTIONS

Use Kocide LF as noted below. Kocide LF is adaptable to spraying from aircraft and ground spraying equipment. Depending upon the equipment used and the specific crop, the spray volume applied per acre will differ. Refer to recommended volume table below.

	Minimum Recommended Spray Volume (Gallons) Per Acre When Applying Kocide LF		
	Aerial	Ground	Concentrate
Vegetables	3	Dilute	-
Field Crops	3	20	-
Vines	5	150	50
Tree Crops	10	400	50
Citrus	10	800	100

(50 Florida)

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

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 a 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.

Shut off injection equipment after treatment and continue to operate irrigation system until Kocide LF has been cleared from the last sprinkler head.

Do not apply this product through any irrigation (chemigation) 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, traveler, big gun, plastic pipe solid set system(s) which contain no aluminum parts or components. Do not apply this product through any other type of irrigation system.

## GENERAL CHEMIGATION INSTRUCTIONS

Apply this product only through one or more of the following types of systems: sprinkler including center pivot, lateral move, traveler, big gun, plastic pipe solid set system(s) which contain no aluminum parts or components. 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 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.

## 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 the 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.

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.

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.

When mixing, fill nurse tank half full with water. Add Kocide LF 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 label of all products used in mixtures.

Kocide LF should be added through a traveling irrigation system continuously or at the last 30 minutes of solid set irrigation systems. Agitation is recommended.

## SPRINKLER CHEMIGATION

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

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

When mixing, fill nurse tank half full with water. Add Kocide LF 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 label of all products used in mixtures.

Kocide LF should be added through a traveling irrigation system continuously or at the last 30 minutes of solid set irrigation systems. Agitation is recommended.

## CROP CLASSIFICATION

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

**FIELD CROPS:** Alfalfa, Barley, Oats, Peanut,\* Potato, Sugarbeet and Wheat.

**SMALL FRUITS:** Blackberry, Cranberry, Currant, Gooseberry, Raspberry and Strawberry.

**TURF\*:** Algae Control

**TREE CROPS:** Almond, Apple, Apricot, Avocado, Banana, Cacao, Cherry, Coffee, Filbert, Mango, Nectarine, Peach, Pecan, Pear, Pistacho, Plum, Prune, Quince and Walnut.

**VEGETABLES:** Bean, Broccoli, Brussels Sprout, Cabbage, Cantaloupe, Carrot, Cauliflower, Celery, Collard, Cucumber, Eggplant, Honeydew, Muskmelon, Onion, Pea, Pepper, Pumpkin, Spinach, Squash, Tomato, Watercress\* and Watermelon.

**VINES:** Grape, Hops and Kiwi.

**MISCELLANEOUS:** Atemoya,\* Carambola,\* Chives,\* Douglas Fir,\* Ginseng, Guava,\* Litchi,\* Live Oak, Macadamia,\* Mamey Sapote,\* Parsley,\* Passion Fruit,\* Sugar Apple\* and Sycamore.

\*(Except CA)

## USE INSTRUCTIONS

Kocide LF may be applied as an aerial, ground dilute or ground concentrate spray unless specifically directed otherwise by crop.

When selecting a Kocide LF use rate 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 Kocide LF is applicable for both dilute and concentrate spraying. Consult the Kocide LF label for specific rates and timing of application by crop.

Complete spray coverage is essential to assure optimum performance from Kocide LF. When treating by aerial application, or with low volume application equipment, unless you have had specific previous experience, it is advisable to test for compatibility and tolerance to crop injury prior to full scale commercial utilization. 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 Kocide LF resulting in possible phytotoxicity or loss of effectiveness.

While volume is important in obtaining full spray coverage, often factors such as foliage density, environmental conditions and sprayer 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 mixing, fill spray tank one half full with water. Add Kocide LF 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.

**NOTE:** Kocide LF should not be applied in a spray solution having a pH of less than 6.5 as phytotoxicity may occur. Applying Kocide LF in a spray solution having a pH greater than 9.0 may result in reduced level of disease control.

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.

## CITRUS

Adding foliar nutrients to spray mixtures, containing Kocide LF or other products and applying to citrus during the post-bloom period when young fruit is present may result in spray burn.

Disease	Pints/100 Gallons	Pints/Acre	Use Instructions
Melanose, Scab, Pink Pitting	1-2	6-16	Apply as pre-bloom and post-bloom sprays.
Brown Rot	2/3-1 1/3	5 1/3-10 2/3	Begin application in fall and continue as needed. Apply to entire tree. Apply also to bare ground 1 foot beyond skirt. Use higher rates when conditions favor disease. <b>NOTE:</b> In California, in areas subject to copper injury, add 1/3 to 1 pound of high quality lime per quart of Kocide LF.
Greasy Spot	1/3-1	2 2/3-8	Begin application in fall and continue as needed. Apply to entire tree. Apply also to bare ground 1 foot beyond skirt. Use higher rates when conditions favor disease. <b>NOTE:</b> In California, in areas subject to copper injury, add 1 1/3 to 1 pound of high quality lime per quart of Kocide LF.
Citrus Canker (Suppression Only)	2	16	Spray flushes 7 to 14 days after shoots begin to grow. Young fruit may require an additional application. Number and timing of applications will be dependent upon disease pressure. Under heavy pressure, each flush of new growth should be sprayed.

## FIELD CROPS

Crop	Disease	Pints/Acre	Use Instructions
Alfalfa	Cercospora Leaf Spot, Leptosphaerulina Leaf Spots	2 2/3	Apply 10 to 14 days before each harvest or earlier if disease threatens. <b>NOTE:</b> Spray injury may occur with sensitive varieties such as Lahontan.
Barley, Oats, Wheat	Septoria Leaf Blotch, Helminthosporium Spot Blotch	1 1/3-2 2/3	Make first application at early heading and follow with second spray 10 days later. Use the higher rates when conditions favor disease.
Peanut*	Cercospora Leaf Spot	2-4	Begin spraying at 35 to 40 days after planting or when disease symptoms first appear and repeat at 10 to 14 day intervals as needed. Reduce sprays to 7 day intervals during humid weather. Use higher rates when conditions favor disease.
Potato	Early Blight, Late Blight	1 1/3-5 1/3	Except CA: Apply 1 1/2 to 2 pints at 7 to 10 day intervals starting when plants are 6 inches high in locations where disease is light and up to 4 to 5 1/3 pints per acre where disease is more severe. CA Only: Apply 1 1/3 to 2 pints at 7 to 10 day intervals when plants are 6 inches high until 2 weeks before harvest in locations where disease is light and up to 4 to 5 1/3 pints per acre where disease is more severe.
Sugarbeet	Cercospora Leaf Spot	2 2/3-6 2/3	Begin applications when conditions first favor disease development and repeat at 10 to 14 day intervals as needed. Use the higher rate when disease is severe. Addition of a suitable agricultural spray oil is recommended.

## SMALL FRUITS

Crop	Disease	Pints/Acre	Use Instructions
Blackberry (Santiams, Logans, Boysens, Marions, Auroras, Cascades, Chehalems & Thornless Evergreens)	Leaf Spot, Cane Spot	5 1/3	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	10 2/3	Make first application in late bloom. One or two additional applications at 10 to 14 day intervals may be required depending upon disease severity.
Currant, Gooseberry	Leaf Spot	13 1/3	Make three applications starting after harvest followed by application before bloom and after petal fall.
Raspberry	Leaf Spot, Cane Spot	5 1/3	Apply delayed dormant spray after training in the spring. Make fall application after harvest. Add 1 quart of crop oil per acre.
Strawberry	Leaf Spot, Leaf Blight	2 2/3-4	Begin application when plants are established and continue on a weekly schedule throughout season. <b>NOTE:</b> Discontinue applications if signs of crop injury appear.

## TREE CROPS

Crop	Disease	Pints/100 Gallons	Pints/Acre	Use Instructions
Almond	Coryneum Blight, Blossom Brown Rot	2 2/3-4	10 2/3-16	Dormant application: Apply before foliage buds begin to swell. Use higher rates when rainfall is heavy and disease pressure is high.
		2 2/3-4	8-10 2/3	Early bloom (popcorn) application: Apply before full bloom. Use higher rates when rainfall is heavy and disease pressure is high. <b>NOTE:</b> To avoid plant injury, do not use above rate after full bloom.
	Bacterial Blast (Pseudomonas)	4-5 1/3	12-21 1/3	Apply at dormant to early pink bud. For control in sprinkler irrigated orchards or where disease is severe, apply 1/3 pint per 100 gallons, not to exceed 1 1/2 pints per acre, at 2 week post-bloom intervals or just before sprinkling. <b>NOTE:</b> Injury may occur from post-bloom sprays, especially on Neplus varieties.

## TREE CROPS *Cont'd.*

Crop	Disease	Pints/100 Gallons	Pints/Acre	Use Instructions
Apple	Anthraxnose, European Canker, Blossom, Shoot Blast ( <i>Pseudomonas</i> )	4-5½	16-21½	Apply before fall rains. Use higher rates under severe disease conditions. <b>NOTE:</b> Use on yellow varieties may cause discoloration. To avoid, pick before spraying.
	Fire Blight	2¾-5½	10¾-21½	Make application between silver-tip and green-tip. Apply as a full cover spray. <b>NOTE:</b> Crop injury may occur from late application; discontinue use when green tip reaches ½ inch.
	Crown or Collar Rot	5½	–	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. <b>NOTE:</b> Do not use if soil pH is below 5.5 since copper toxicity may result.
Apricot	Coryneum Blight (Shot Hole), Blossom Brown Rot	2¾-4	10¾-16	Apply at popcorn to full bloom and use higher rates when conditions favor disease. <b>NOTE:</b> Applications applied after bloom will result in crop injury.
Avocado	Scab	2¾-4	10¾-16	Apply when bloom buds begin to swell and continue application at monthly intervals for five to six applications. Use higher rate when conditions favor disease.
Banana	Sigatoka	–	2¾	Apply by air in 3 gallons of water combining 0.5 gallon of agricultural oil. Apply on a 14 day schedule throughout the wet season. Apply at 21 day intervals during dry periods.
	Black Pitting	5½	–	Mix in 100 gallons of water and apply directly to the fruit stem and include the basal portion of the leaf crown. Apply during the first and second weeks after fruit emergence.
Cacao	Black Pod	2¾-6	10¾-24	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 two to four applications are recommended during critical infection periods and at long intervals, use 8¾ to 11½ pints per acre, according to disease incidence and planting density.
Cherry	Dead Bud ( <i>Pseudomonas syringae</i> ), Coryneum Blight	8	10¾-16	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	2¾-4	10¾-16	Apply a full cover spray at popcorn stage and a second application at full bloom.
Coffee	Coffee Berry Disease ( <i>Collectotrichum coffeanum</i> )	2-2¾	8-10¾	Apply first spray after flowering and before onset of long rains and then at 21 to 28 day intervals until picking. Use higher rates when rainfall is heavy and disease pressure is high.
	Bacterial Blight ( <i>Pseudomonas syringae</i> )	2-2¾	8-10¾	Begin spray program before the onset of long rainy periods and continue throughout the rainy season at 14 to 21 day intervals. The critical time of spraying to control this disease is just before, during and after flowering(s) especially when coinciding with wet weather. Use higher rates when rainfall is heavy and disease pressure is high.
	Leaf Rust ( <i>Hemileia vastatrix</i> )	¾-1½	2¾-5½	Apply before the onset of rain and then at 21 day intervals while the rains continue. Use higher rates when rainfall is heavy and disease pressure is high.
	Leaf Rust - Brasil	–	4¾-7½	Low density plantings. Apply before the onset of rain. Continue applications depending on altitude and local recommendations. Apply at 3 to 4 week intervals depending on disease severity and rainfall conditions. Use high rates where disease pressure is heavy and rainfall high.
			–	9¾-10¾
	Iron Spot ( <i>Cercospora coffeicola</i> ), Pink Disease ( <i>Corticium salmonicolor</i> )	¾	¾	Use concentrate or dilute spray. Begin treatment at the start of wet season and continue at monthly intervals for three applications.
Filbert	Bacterial Blight	5½-8	21½-32	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.
	Eastern Filbert Blight	5½-8	21½-32	Apply as a dilute spray in adequate water for thorough coverage. Make initial application after harvest in October before heavy winter rains begin. The next application should be made in late February to early March followed by another application 1 month later. If desired, add 1 pint of a sticking agent or superior-type oil per 100 gallons of water.
Mango (FL)	Anthraxnose	2¾	10¾-13½	Apply monthly after fruit set until harvest.
Peach, Nectarine	Leaf Curl, Coryneum Blight (Shot Hole)	2¾-5½	10¾-21½	Apply at leaf fall. Use the highest rate when rainfall is very heavy and disease pressure is high. May be used with agricultural spray oil.
	Brown Rot, Blossom Blight	2¾-4	10¾-16	Full cover spray at pink bud. Application at this time affords some control of leaf curl and coryneum blight.

## TREE CROPS *Cont'd.*

Crop	Disease	Pints/100 Gallons	Pints/Acre	Use Instructions
Peach, Nectarine <i>Cont'd.</i>	Bacterial Spot	1/8	1 1/8	Post-bloom application applied at first and second cover sprays.
		2 3/8	10 3/8	Apply as a dormant spray. <b>NOTE:</b> Do not spray 3 weeks prior to harvest. Use only recommended rates. Spotting of leaves and defoliation may occur from use in cover sprays.
Pear	Fire Blight	1/8	1 1/8	Apply at 5 day intervals throughout the bloom period.
	Pseudomonas Blight	4-5 1/8	16-21 1/8	Apply before fall rains and again during dormancy before spring growth starts. Use the higher rate when disease pressure is high or when conditions favor development of such. <b>NOTE:</b> Excessive dosages may cause fruit russet.
Pecan	Shuck Rot, Kernal Rot ( <i>Phytophthora Cactorum</i> ), Zonate Leaf Spot ( <i>Cristulariella pyramidalis</i> )	-	2-4 qts.	For suppression, apply in sufficient water to ensure complete spray coverage at 2 to 4 week intervals starting at kernal growth and continuing until shucks open. Use the higher rate and shorter interval if frequent rainfall occurs.
Pistachio	Botrytis Blight, Botryosphaeria Panicle, Shoot Blight, Septoria Leaf Blight, Late Blight ( <i>Alternaria alternata</i> )	-	4-8 qts.	Make initial application at bud swell and repeat on a 14 to 28 day schedule as dictated by disease conditions. If disease conditions are severe, use the high rate and short spray interval.
Plum, Prune	Coryneum Blight (Shot Hole)	2 3/8-5 1/8	10 3/8-21 1/8	Apply as a dormant spray. Use the higher rate when rainfall is heavy and/or disease pressure is high.
	Brown Rot, Blossom Blight	2 3/8-4	10 3/8-16	Apply full cover application at pink, red or early white bud stage. Use the higher rate when disease pressure is heavy or conditions favor the development of such.
Walnut	Walnut Blight	2 3/8-4	10 3/8-16	Apply first application spray at early pre-bloom prior to or when catkins are partially expanded. Make additional applications during bloom and early nutlet stage or as needed if frequent rainfall occurs.

## VEGETABLES

Crop	Disease	Pints/Acre	Use Instructions
Bean (Dry & Green)	Brown Spot, Halo Blight, Common Blight	1 1/8-4	Use the higher rate for more severe disease. For protective sprays, make first application when plants are 6 inches high; repeat on a 7 to 14 day schedule depending upon local conditions
Broccoli, Brussels Sprout, Cabbage, Cauliflower, Collard	Black Rot ( <i>Xanthomonas</i> ), Black Leaf Spot ( <i>Alternaria</i> )	2 3/8	Apply at 7 to 10 day intervals. For control of disease 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.
	Downy Mildew (Cabbage Only)	3/8-1 1/8	Use higher rates when conditions favor disease. <b>NOTE:</b> Reddening of older leaves may occur on broccoli and a flecking of wrapper leaves may occur on cabbage.
Cantaloupe, Honeydew, Muskmelon	Downy Mildew	2 3/8	Begin application when conditions are favorable for disease development and repeat at 5 to 7 day intervals as needed depending on disease severity.
Carrot	Cercospora Leaf Spot	2 3/8	Begin application when disease first threatens and repeat at 7 to 14 day intervals as needed depending on disease severity.
Celery	Cercospora Early Blight, Septoria Late Blight, Bacterial Blight	2 3/8	Begin applications as soon as plants are first established in the field, repeating at 5 to 7 day intervals depending on disease severity and environmental conditions.
Cucumber	Angular Leaf Spot, Downy Mildew	2-2 3/8	Apply weekly when plants begin to vine.
Eggplant	Alternaria Blight, Anthracnose, Phomopsis	2 3/8	Begin applications prior to development of disease symptoms. Repeat sprays at 7 to 10 day intervals or as needed depending on disease severity.
Onion	Purple Blotch, Downy Mildew	2 3/8	Begin when plants are 4 to 6 inches high and repeat at 7 to 10 day intervals as needed depending upon disease pressure.
Pea	Powdery Mildew	2-4	Begin applications when disease symptoms first appear and repeat at weekly intervals as needed. Use higher rate for more severe disease.
Pepper	Bacterial Spot	2 3/8-4	Begin applications when conditions first favor disease development and repeat at 5 to 10 day intervals as needed depending on disease severity. Use higher rates for severe disease.
Pumpkin, Squash	Powdery Mildew	2-4	Begin applications when plants are 3 weeks old or when disease symptoms 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.
Spinach	Downy Mildew	2-4	Apply at 7 to 10 day intervals. Use short interval and higher rates when conditions favor disease. <b>NOTE:</b> Flecking may occur on spinach leaves.
Tomato	Early Blight, Late Blight	2 3/8-4	Begin applications when disease first threatens and repeat at 7 to 10 day intervals or as needed depending on disease severity. Use higher rate for severe disease.
	Bacterial Speck	2 3/8	Begin applications when disease first threatens and repeat at 10 to 30 day intervals or as needed depending on disease severity.
	Bacterial Spot, Anthracnose, Gray Leaf Mold, Septoria Leaf Spot	2 3/8-5 1/8	Begin applications when disease first threatens and repeat at 7 to 10 day intervals or as needed depending on disease severity. Use higher rate for severe disease.
Watercress*	Cercospora Leaf Spot	4	Begin applications when plants are first established in the field, repeating at 7 to 14 day intervals depending on disease severity and environmental conditions. Do not exceed four applications per crop. Apply using ground spray equipment at no less than 50 gallons of spray solution per acre.

## VEGETABLES *Cont'd.*

Crop	Disease	Pints/100 Gallons	Use Instructions
Watermelon	Anthrachnose	2½	Apply as soon as plants become established in the field and repeat at weekly intervals as needed depending upon disease severity.
	Downy Mildew	2-4	Apply as soon as plants become established in the field and repeat at weekly intervals as needed depending upon disease severity. Use higher rates when conditions favor disease.

\* Except California

## VINES

Crop	Disease	Pints/100 Gallons	Pints/Acre	Use Instructions
Grape	Black Rot, Powdery Mildew, Downy Mildew	1¾	2½	Begin application at bud break with subsequent applications throughout the season depending upon disease severity. <b>NOTE:</b> Foliage injury may occur on copper sensitive varieties such as Concord, Delaware, Niagara, and Rosettes. Either test for sensitivity or add 0.5 to 1.5 pounds of hydrated lime per pint of Kocide LF.
Hops	Downy Mildew	1¾	2½	Make crown treatment after pruning, but before training. After training, additional treatments are needed at about 10 day intervals. <b>NOTE:</b> Discontinue use 2 weeks before harvest.
Kiwi	<i>Pseudomonas syringae</i> , <i>Erwinia herbicola</i> , <i>Pseudomonas fluorescens</i>	5½	10%	Apply in 200 gallons of water per acre. Make application on a monthly basis. A maximum of three applications may be made.

## MISCELLANEOUS

Crop	Disease	Pints/Acre	Use Instructions
Atemoya*	Anthrachnose	6	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.
Carambola*	Anthrachnose	12	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.
Chives*	Downy Mildew	4	Begin applications when plants are established in the field. Repeat applications every 7 to 10 days as dictated by disease conditions. If disease pressure is high, use the shorter spray interval.
Douglas Fir*	Rhabdocline Needlecast	4	Begin applications in bud break and repeat at 3 to 4 week intervals. Apply in a tank mix with another registered pesticide if moderate to severe disease pressure is present.
Ginseng	Alternaria Leaf, Stem Blight	5½	Use as a tank mix with 2 pounds Rovral® 50W in 100 gallons of water. Begin Kocide-Rovral applications as soon as plants have emerged in spring. Applications should be repeated every 7 days until plants become dormant in fall. If scheduled application is to be made before a rain shower, apply fungicides at least 8 hours before the rain, giving the fungicides time to dry on the plants. Use of a spreader-sticker or sticker is advised. <b>NOTE:</b> Alternaria leaf and stem blight is most severe in humid conditions such as those found in the dense canopies of 2, 3, 4 year old ginseng. It is very important that the stems be thoroughly covered with fungicides; therefore, use a spray apparatus which distributes the fungicides throughout the canopy.
Guava*	Anthrachnose, Red Algae	6	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.
Litchi*	Anthrachnose	6	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.
Live Oak (Texas & Florida)	Ball Moss	12	Apply in the spring when ball moss is actively growing, using 1½ 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. <b>NOTE:</b> Kocide LF may be injurious to ornamentals grown under Live Oaks.
Macadamia*	Anthrachnose	12	Initiate sprays at first sign of flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.
	Phytophthora Blight ( <i>P. capsici</i> ) Raceme Blight ( <i>Botrytis cinerea</i> )	9-12	Apply during raceme development and bloom periods. Apply in sufficient water for thorough coverage.
Mamey Sapote*	Anthrachnose, Algal Leaf Spot	12-16	Apply when conditions favor disease development. Repeat on 14 to 30 day schedule as disease severity and environmental conditions dictate.
Parsley*	Bacterial Blight ( <i>Pseudomonas</i> sp.)	6	Begin applications when plants are first established in the field and repeat at 5 to 7 day intervals depending upon disease severity and environmental conditions.
Passion Fruit*	Anthrachnose	12	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.
Sugar Apple (Annona)*	Anthrachnose	24	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.
Sycamore	Anthrachnose	4-6	Apply as a full cover spray. Apply in 100 gallons of water or sufficient volume for thorough coverage. Make first application at bud crack and second application 7 to 10 days later at 10% leaf expansion.

\*Except California

## TURFGRASS (Except California)

To control algae in turfgrass, apply 2 pints Kocide LF per 1,000 square feet in 5 gallons of water. Kocide LF may be used along or in combination with other registered fungicides as a maintenance spray. Observe all precautions and limitations on the label of each product used in tank mixes.

**NOTE:** Phytotoxicity may occur depending upon varietal differences. Apply the recommended rate to a small area and observe 7 to 10 days for signs of injury. If phytotoxicity occurs, discontinue uses. Do **not** apply in spray solutions with a pH of less than 6.5.

## ORNAMENTALS

**Notice to User:** Plant sensitivities to Kocide LF have been found to be acceptable in specific genera and species listed on this label under conditions tested; however, phytotoxicity may occur with varying conditions. Due to the large number of species and varieties of ornamentals and nursery plants, it is impossible to test every one for sensitivity to Kocide LF. Neither the manufacturer nor seller has determined whether or not Kocide LF can be safely used on ornamental or nursery plants not listed on this label or under all conditions. The user should determine if Kocide LF can be used safely prior to commercial use. In a small area, apply the recommended rates to the plants in question, i.e. bedding plants, foliage, etc. and observe for 7 to 10 days for symptoms of phytotoxicity prior to commercial use.

Use Kocide LF on container, bench or bed-grown ornamentals in greenhouses or outdoor nurseries, for professional use on ornamentals grown for indoor and outdoor landscaping, and for control of bacterial and fungal diseases of foliage, flowers and stems.

**For control of disease on ornamentals in Greenhouses, Field and Nurseries** – Apply as a thorough coverage spray using 1 1/3 pints of Kocide LF 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.

Kocide LF may be used as a maintenance spray. Kocide LF may be used alone or in combination with other fungicides such as the dithiocarbamates.

Crop	Disease
Aralia	Xanthomonas Leaf Spot, Cercospora Leaf Spots, Alternaria
Azalea <sup>(1)</sup>	Cercospora Leaf Spot, Botrytis Blight, Phytophthora dieback, Powdery Mildew
Begonia	Xanthomonas Leaf Spot
Bulbs (Easter Lily, Tulip, Gladiolus)	Anthrachnose, Botrytis Blight
Carnation <sup>(1)</sup>	Alternaria Blight, Pseudomonas Leaf Spot, Botrytis Blight
Chrysanthemum <sup>(1)</sup>	Septoria Leaf Spot, Botrytis Blight
Cotoneaster	Botrytis Blight
Euonymus	Botrytis Blight, Anthracnose
Ivy <sup>(1)</sup>	Xanthomonas Leaf Spot
Pachysandra	Volutella Leaf Blight
Periwinkle	Phomopsis Stem Blight
Philodendron	Bacterial Leaf Spot
Pyracantha	Fire Blight, Scab
Rose <sup>(1)</sup>	Powdery Mildew, Black Spot
Yucca (Adam's needle)	Cercospora Leaf Spot, Septoria Leaf Spot

(1) 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 Kocide LF, apply the recommended rate to a few plants and observe after 7 to 10 days for symptoms of phytotoxicity.

### WARRANTY STATEMENT

GRIFFIN warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of GRIFFIN. In no case shall GRIFFIN be liable for consequential, special or indirect damages resulting from the use or handling of this product. All such risks shall be assumed by the Buyer. The exclusive remedy of any buyer or user of this product for any and all losses, injuries, or damages resulting from or in any way arising from the use, handling, or application of this product, whether in contract, warranty, tort, negligence, strict liability, or otherwise, shall not exceed the purchase price paid for this product or at GRIFFIN'S election, the replacement of this product. GRIFFIN MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

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