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2023-08-29

Last approved label: 2022-0944 dated 2022-04-04

GROUP	M	FUNGICIDE
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KOCIDE® 2000-O

DRY FLOWABLE
COMMERCIAL
-
AGRICULTURAL
FUNGICIDE

ACTIVE INGREDIENT: Copper Hydroxide 53.8% (metallic copper equivalent 35%)

KEEP OUT OF REACH OF CHILDREN

READ THE LABEL BEFORE USING

CAUTION



POISON

WARNING - EYE IRRITANT

REGISTRATION NO. 33441
PEST CONTROL PRODUCTS ACT
Net Contents: 1-25 kg

Cosaco LLC
12701 ALMEDA ROAD
HOUSTON, TX 77045
1-800-250-5024

PRECAUTIONS: DANGER: POISON. KEEP OUT OF REACH OF CHILDREN.

Harmful if swallowed or inhaled. Avoid inhaling or breathing dusts and sprays.

Causes eye irritation. DO NOT get in eyes. Wear goggles, long pants, a long-sleeved shirt and shoes plus socks during mixing/loading, application, clean-up and repair. In addition, wear chemical-resistant gloves during mixing/loading, clean-up and repair.

Remove personal protective equipment immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing. Wash the outside of gloves before removing.

Remove clothing/personal protective equipment immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Discard clothing and other absorbent material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

For cleaning/maintaining personal protective equipment, use detergent and hot water. Keep and wash personal protective equipment separately from other laundry.

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

DO NOT enter or allow worker entry into treated areas during the restricted-entry interval of 48 hours.

For Greenhouse Use:

DO NOT enter or allow worker entry into treated areas during the restricted-entry interval of 24 hours.

At least one container or station designed specifically for flushing eyes must be available, and in operating condition with decontamination supplies, for workers entering the treated areas. This container/station must remain available for at least seven days following application.

Applicators must post warning signs bearing the following information on all entrances to the greenhouse:

- the name of the product applied
- the date and time of the application
- "product residues in the treated area may be highly irritating to the eyes."
- "avoid contact of product residues with eyes"
- "if in eyes: hold eye open and rinse slowly and gently with water for 15-20 minutes using the eye flush container [or eye flush station] located in the greenhouse. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice"
- The location of the eye flush container/station
- Instructions on how to operate the eye flush container/station.

Signs must remain posted at least 7 days after treatment. Only the applicator(s) (or someone under their supervision) may remove warning signs.

If this pest control product is to be used on a commodity that may be exported to the U.S., and you require information on acceptable residue levels in the U.S., visit CropLife Canada's website at www.croplife.ca.

FIRST AID

If swallowed: Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

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

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

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

Take container, label or product name and Pest Control Registration Number with you when seeking medical attention.

TOXICOLOGICAL INFORMATION

Unless extensive vomiting has occurred, empty the stomach by gastric lavage with water, milk, sodium bicarbonate solution, or a 0.1% solution of potassium ferrocyanide. (Gosselin, Clinical Toxicology of Commercial Products, 5th ed.). Administration of gastric lavage should be performed by qualified medical personnel. Probable mucosal damage may contraindicate use of gastric lavage.

For medical emergencies call 1-800-441-3637 (24 hours).

ENVIRONMENTAL PRECAUTIONS

TOXIC to aquatic organisms and non-target terrestrial plants. Observe spray buffer zones specified under DIRECTIONS FOR USE. Toxic to birds and small wild animals.

To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil, or clay.

Avoid application when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative filter strip between the treated area and the edge of the water body.

STORAGE

Store this product away from food or feed.

DISPOSAL

For recyclable containers:

DO NOT reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Make the empty, rinsed container unsuitable for further use.

If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

For returnable containers:

DO NOT reuse this container for any purpose. For disposal, this empty container may be returned to the point of purchase (distributor/dealer).

For refillable containers:

For disposal, this container may be returned to the point of purchase (distributor/dealer). It must be refilled by the distributor/dealer with the same product. Do not reuse this container for any other purpose.

Disposal of unused, unwanted product:

For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

GENERAL INSTRUCTIONS

KOCIDE® 2000-O is adaptable to spraying from all types of spray equipment. It can be used in high or low volume sprays. No additional surfactants are needed. Add KOCIDE® 2000-O slowly to the spray tank partially filled with water. Spreader-stickers, insecticides, nutrients, etc. should be added last.

KOCIDE® 2000-O is compatible with commercially formulated spreader-stickers, non-herbicidal agricultural oils, and insecticides. The following specific instructions are based on general applications. However, the recommendations of local Agricultural Extension Specialists should be closely followed as to

timing, frequency, and number of sprays per season.

RESISTANCE MANAGEMENT RECOMMENDATIONS:

For resistance management, please note that KOCIDE® 2000-O contains a Group M Fungicide. Any fungal population may contain individuals naturally resistant to KOCIDE® 2000-O and other Group M fungicides. A gradual or total loss of pest control may occur over time if these fungicides are used repeatedly in the same fields. Other resistance mechanisms that are not linked to site of action but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay fungicide resistance:

- Where possible, rotate the use of KOCIDE® 2000-O or other Group M fungicides with different groups that control the same pathogens.
- Use tank mixtures with fungicide from a different group when such use is permitted.
- Fungicide use should be based on an integrated disease management program that includes scouting, historical information related to pesticide use and crop rotation and considers host plant resistance, impact of environmental conditions on disease development, disease thresholds, as well as cultural, biological and other chemical control practices.
- Where possible, make use of predictive disease models to effectively time fungicide applications.
- Monitor treated fungal populations for resistance development.
- If disease continues to progress after treatment with this product, do not increase the use rate. Discontinue use of this product, and switch to another fungicide with a different target site of action, if available.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or IPM recommendations for specific crops and pathogens.
- For further information and to report suspected resistance, contact Cosaco LLC at 1-800-250-5024.

DIRECTIONS FOR USE:

DO NOT allow effluent or runoff from greenhouses containing this product to enter lakes, streams, ponds or other waters.

As this product is not registered for the control of pests in aquatic systems, DO NOT use to control aquatic pests.

DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

Field sprayer application: DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE S572.1) medium classification. Boom height must be 60 cm or less above the crop or ground.

Airblast application: DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT direct spray above plants to be treated. Turn off outward pointing nozzles at row ends and outer rows. DO NOT apply when wind speed is greater than 16 km/h at the application site as measured outside of the treatment area on the upwind side.

DO NOT apply by air.

SPRAY BUFFER ZONES

A spray buffer zone is NOT required for uses with hand-held application equipment permitted on this label.

The spray buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive terrestrial habitats (such as grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas and shrublands), sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands) and estuarine/marine habitats.

Method of	Crop	Spray Buffer Zones (metres) Required for the Protection of:
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application			Freshwater Habitat of Depths:		Estuarine/Marine Habitat of Depths:		Terrestrial Habitat:
			Less than 1 m	Greater than 1 m	Less than 1 m	Greater than 1 m	
Field sprayer	Beans		10	5	2	1	0
	Peppers, tomatoes, fruiting vegetables (Crop Group 8-09)		25	10	2	1	1
	Potatoes		20	10	2	1	1
	Cucumbers		10	5	2	1	0
	Sugar beets, celery/celeriac, red garden beets		15	5	2	1	0
	Golf course and lawn bowling greens		65	30	10	4	1
Airblast	Apples, grapes	Early growth stage	45	35	20	10	1
		Late growth stage	35	25	10	5	1

For tank mixes, consult the labels of the tank-mix partners and observe the largest (most restrictive) spray buffer zone of the products involved in the tank mixture and apply using the coarsest spray (ASAE) category indicated on the labels for those tank mix partners.

The spray buffer zones for this product can be modified based on weather conditions and spray equipment configuration by accessing the Spray Buffer Zone Calculator on the Pesticides portion of the Canada.ca website.

BEANS: Bacterial Blight (Halo Blight - *Pseudomonas syringae* pv. *phaseolicola* and Common Blight - *Xanthomonas axonopodis* pv. *phaseoli*). For protective sprays, apply first application when plants are 15 cm high. Apply on a 7 to 14 day schedule depending on local conditions, to a maximum of 6 applications per year. Apply 1.6 – 2.3 kg/ha; use high rate under high disease pressure and low rate under low disease pressure. Do not apply to crops within 2 days of harvest.

PEPPERS: Bacterial Spot (*Xanthomonas campestris* pv. *vesicatoria*). When disease threatens, apply 2.52 kg/ha at 7 to 14 day intervals depending on disease severity, to a maximum of 10 applications per year. Do not apply to crops within 2 days of harvest.

PEPPERS (GREENHOUSE SEEDLINGS FOR TRANSPLANT): *Bacterial Spot* (*Xanthomonas campestris* pv. *vesicatoria*). Apply KOCIDE® 2000-O at 3.2 kg/ha every 5 days when warranted to a maximum of 5 applications over a 4 week period prior to transplant. Following transplantation to the field, when disease threatens, apply KOCIDE® 2000-O at 3.2 kg/ha at 7 to 10 day intervals depending upon disease severity. Do not apply to crops within 1 day of harvest. Wear protective clothing including long-sleeved shirt, long pants and chemical-resistant gloves when handling or spraying the product. Do not re-enter treated area for 24 hours.

POTATOES: Early Blight (*Alternaria solani*) and Late Blight (*Phytophthora infestans*). Apply at 7 to 10 days intervals starting when plants are 15 cm high until harvest. Apply KOCIDE® 2000-O at 0.80 - 1.6 kg/ha, depending on density of foliage. KOCIDE® 2000-O can be combined with 1.75 - 2.25 kg/ha of MANZATE® DF Fungicide or MANZATE® Pro-Stick Fungicide for control of early blight and late blight.

KOCIDE® 2000-O at 2.4 kg/ha may be applied at vinekill with a desiccant or alone after vinekill, prior to harvest. This late treatment may reduce infection of tubers by the late blight fungus during harvesting. Do not apply within 2 days of harvest. Maximum of 10 applications per year.

TOMATOES: For control of early blight (*Alternaria solani*) and late blight (*Phytophthora infestans*): Apply Kocide® 2000-O at 2.52 kg/ha at 7-day intervals. For control of septoria leaf spot (*Septoria lycopersici*): Apply Kocide® 2000-O at 2.24 kg/ha at 7-day intervals. For control of bacterial canker (*Clavibacter michiganensis* subsp. *michiganensis*): Apply Kocide®

2000-O at 2.25 kg/ha at 7 – 10 day intervals.

For control of Bacterial Spot (*Xanthomonas campestris* pv. *vesicatoria*): When disease threatens, apply Kocide® 2000-O at 2.52 kg/ha at 7-10 day intervals, more frequently when disease is severe to a minimum application interval of 3 days.

Kocide® 2000-O should be combined with 1.75 – 2.25 kg/ha maneb or mancozeb (80% active compound). Do Not apply to crops within 2 days of harvest. Maximum of 10 applications per year.

TOMATOES (GREENHOUSE SEEDLINGS FOR TRANSPLANT): *Bacterial Spot*. (*Xanthomonas campestris* pv. *vesicatoria*). Apply KOCIDE® 2000-O at 3.2 kg/ha every 5 days when warranted to a maximum of 5 applications over a 4 week period prior to transplant. Following transplantation to the field, when disease threatens, apply KOCIDE® 2000-O at 3.2 kg/ha at 7 to 10 day intervals depending upon disease severity. KOCIDE® 2000-O should be combined with 1.75-2.25 kg/ha maneb or mancozeb (80% active compound). Do not apply to crops within 1 day of harvest. Wear protective clothing including long-sleeved shirt, long pants and chemical-resistant gloves when handling or spraying the product. Do not re-enter treated area for 24 hours.

Cucumbers: Angular leaf spot (*Pseudomona syringae* pv. *lachrymans*). Apply every 7 days once the plants begin to vine, to a maximum of 5 applications per year. Use Kocide® 2000-O at 1.6-2.3 kg/ha. Do not apply to crops within 2 days of harvest.

Sugar Beets: Cercospora leaf spot (*Cercospora beticola*). Start spraying when disease threatens and continue if conditions are conducive for disease development. Spray every 10-14 days depending on conditions, using Kocide® 2000-O at 1.6 – 3.2 kg/ha depending on disease severity. Addition of suitable non-herbicidal agricultural oil is recommended at 5.5 L/ha. For specific instructions, consult local agricultural authorities. Do not apply to crops within 2 days of harvest. Maximum of 6 applications per year.

APPLE: For control of apple scab (*Venturia inaequalis*): Apply 0.84 to 1.96 kg/ha of Kocide 2000-O in 500-1000L/ha. For control of fire blight (*Erwinia amylovora*): Apply 0.56 to 0.84 kg/ha of Kocide® 2000-O, in 500-1000 L/ha of water.

Make one application every 5-7 days starting application between silver-tip and green-tip. Apply as a full cover spray for early season disease suppression. Use the higher rate when conditions (site history, cultivar sensitivity, predictive model) favour disease progression. Apply using ground application equipment or airblast only.

Note: Moderate to severe crop injury may occur from late application; discontinue use when green-tip reaches 1/2 inch.

Extended spray schedule where fruit finish is not a concern: Continued applications may be made at 5-7 day intervals if needed between 1/2 inch green-tip and first cover spray.

Note: Moderate to severe crop injury may result from this extended spray schedule. It is not intended for fresh market apples or for apples where fruit finish is a concern as it is likely to cause fruit russetting. The addition of 0.45 to 1.37 kg of hydrated lime per 0.45 kg of Kocide 2000-O may reduce crop injury.

Pre-Harvest Interval is 2 days.

Do not exceed the maximum annual rate of 11.43 kg/ha.

DO NOT apply this product in a way that will contact workers or bystanders, either directly or through drift. Only protected handlers may be in the area during application.

When applied as a tank mix combination, read and observe all label directions, including rates, restrictions, and grazing limitations for each product used in the tank-mix. Follow the more stringent label precautionary measures for mixing, loading and applying stated on both product labels

NOTE TO USER: READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR

SPECIAL USE APPLICATIONS:

The DIRECTIONS FOR USE for the uses described in this section of the label were developed by persons other than Cosaco LLC under the User Requested Minor Use Label Expansion program. For these uses, Cosaco LLC has not fully assessed performance (efficacy) and/or crop tolerance (phytotoxicity) under all environmental conditions or for all crop varieties when used in accordance with the label.

The user should test the product on a small area first, under local conditions and using standard practices, to confirm the product is suitable for widespread application.

DRY EDIBLE BEANS AND SUCCULENT BEANS

For suppression of the following seed borne diseases; common blight (*Xanthomonas axonopodis* pv. *phaseoli*), halo blight (*Pseudomonas syringae* pv. *phaseolicola*) and bacterial brown spot (*Pseudomonas syringae* pv. *syringae*), in dry edible beans and succulent beans: For every 100 kg seed to be treated, add 113 g Kocide® 2000-O to 200 ml of warm water and stir until dissolved. Additional warm water can be added as required to create a slurry of suitable consistency for use with commercial seed treatment equipment. Add this mixture to the bean seed as it is being gently tumbled to ensure even coverage. Allow treated seed to dry before planting. Treated seed must be labelled as follows: "This seed has been treated with Kocide® 2000-O; do not use treated seed for food, feed or oil processing. Toxic to birds and small wild mammals. Any spilled or exposed seeds must be incorporated into the soil or otherwise cleaned-up from the soil surface."

Kocide 2000-O used as a seed treatment may cause some delay in seed germination. Treat a small quantity of seed using equipment similar to that planned for treating the total seed lot. Conduct germination tests on a small portion of seed before committing the total seed lot to a selected seed treatment.

All seed treated with this product must be conspicuously coloured at the time of treatment. When handling contaminated equipment or treated seed, wear long sleeved coveralls over normal work clothing, chemical resistant gloves and goggles; use an approved respirator with a canister approved for pesticides to minimize exposure to dust when handling, mixing leading product, bagging seed, sewing bags of treated seed or when transferring treated seed to a storage bin.

GRAPES:

For control of downy mildew (*Plasmopara viticola*) apply 1.6 kg/ha Kocide® 2000-O mixed in 500-1400 L/ha of water. Make one application every 7-14 days starting at bud break with subsequent applications throughout the season depending on disease severity, up to a maximum of 7 applications per year. Do not apply within 2 days of harvest

Note: Foliage injury may occur on copper sensitive varieties such as Concord, Delaware, Niagara and Rosette. Always test for sensitivity. The addition of 454-1360 g hydrated lime per 454g of Kocide 2000-O may reduce phytotoxicity.

GOLF COURSE AND LAWN BOWLING GREENS

For control of Silvery Thread Moss (*Byrum argentum*), apply 210 grams of Kocide® 2000-O mixed in 8 litres of water per 100 m² of green. Apply every 2 weeks in late fall through early spring in areas of Canada that do not have permanent snow cover, and in mid-September until permanent snow cover in other areas. A minimum of 4 applications is needed to a maximum of 5 applications in a 12-month period.

DO NOT enter or allow others to enter until sprays have dried.

Note: Copper interferes with iron metabolism in the plant. Apply either chelated iron or ferrous sulphate at a rate of 10-12 g iron/100 m² every 2-4 weeks during the period of Kocide® 2000-O applications to avoid copper induced iron chlorosis.

CELERY/CELERIAC

For suppression of Septoria late blight (*Septoria apicola*) on celery and celeriac apply Kocide 2000-O at 1.68 kg/ha in a minimum of 200L water/ha. Begin applications when conditions are favourable to disease infection and repeat at an interval of 7 – 10 days. A maximum of 10 applications per year is permitted. Do not apply within 2 days of harvest.

FRUITING VEGETABLES, CROP GROUP 8-09*

For control of early blight (*Alternaria solani*) and late blight (*Phytophthora infestans*): Apply Kocide® 2000-O at 2.52 kg/ha at 7-day intervals.

For control of Septoria leaf spot (*Septoria lycopersici*): Apply Kocide® 2000-O at 2.24 kg/ha at 7-day intervals.

***Use only the low rate of 2.24 kg/ha on eggplants.**

For control of Bacterial Spot (*Xanthomonas campestris* pv. *vesicatoria*): When disease threatens, apply Kocide® 2000-O at 2.52 kg/ha at 7-10 day intervals, more frequently when disease is severe to a minimum application interval of 3 days.

A maximum of 10 applications per year is permitted. Do not apply within 2 days of harvest.

RED (GARDEN) BEETS For the control of cercospora leaf spot (*Cercospora beticola*). Start spraying when disease threatens and continue if conditions are conducive for disease development. Spray every 10-14 days depending on conditions, using Kocide® 2000-O at 1.6 – 3.2 kg/ha depending on disease severity. Addition of suitable non-herbicidal agricultural oil is recommended at 5.5 L/ha. For specific instructions, consult local agricultural authorities. Do not apply to crops within 2 days of harvest. Maximum of 6 applications per year.

Refer to other sections of this label for additional application instructions and/or use precautions.

NOTICE TO USER: This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label.