11121 64137-5 1 of 10

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (H7505C)
401 "M" St., S.W.
Washington, D.C. 20460

NOTICE OF PESTICIDE:
_x_ Registration
____ Reregistration

(under FIFRA, as amended)

EPA Reg. Number:	Date of Issuance:
64137-5	NOV 05 1993

Term of Issuance:
Conditional

Name of Pesticide Product:
Mycostop Biofungicide for Agronomic, Vegetable and Ornamental Crops

Name and Address of Registrant (include ZIP Code):

Kemira Agro Oy
c/o E.R. Butts International, Inc.
P.O. Box 3337
Bridgeport, CT 06605-0337

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(5) provided that you:

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

2. Revise the label under Seed Treatment for Agronomic Crops by changing the last word in the second sentence from "treatment" to "planting".

3. Add the phrase, "EPA Registration No. 64137-5" to your label before you release the product for shipment.

4. Submit five (5) copies of your final printed labeling before you release the product for shipment.

Signature of Approving Official:

Date: NOV 5 1993

EPA Form 8570-6

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release of the product for shipment constitutes acceptance of these conditions.

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

This acceptance of your label does not relieve you of any obligation to comply with the Worker Protection Standard (WPS). Under the WPS labeling regulations at 40 CFR part 156, subpart K, section 156.200(c)(3), you are prohibited from distributing or selling any product within the scope of the WPS requirements after April 21, 1994, without amended labeling accepted by the Agency.

Sincerely yours,

Sidney C. Jackson
Acting Product Manager (21)
Fungicide-Herbicide Branch
Registration Division (H-7505C)

enclosure

H7505C:C.Grable:cg:10/28/93

MYCOSTOP®

BIOFUNGICIDE FOR AGRONOMIC, VEGETABLE, AND ORNAMENTAL CROPS

ACTIVE INGREDIENTS: Dried spores and mycelium of ray fungus (*Streptomyces griseoviridis* Strain K61)*.....30%

INERT INGREDIENTS.....70%

TOTAL 100%

*10^8 cfu (colony forming units) per 1g of product

CAUTION

KEEP OUT OF REACH OF CHILDREN

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Avoid breathing dust or spray mist. Avoid contact with skin and eyes. Use a dust/mist filter respirator (MSHA/NIOSH approval prefix TC-21C) when handling the product.

STATEMENT OF PRACTICAL TREATMENT

In case of contact, immediately flusn eyes or skin with plenty of water. Get medical attention if irritation persists.

EMERGENCY INFORMATION

For spill, leak, fire, exposure, or accident call CHEMTREC 1-800-424-9300.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water by disposal of equipment wash waters.

~~ACCEPTED~~
with COMMENTS
In EPA Letter Dated

NOV 05 1993

Under the Federal Insecticide, Fundicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 64137-5

Use Before (Date)
Net Contents:_____

Kemira Agro Oy
Porkkalankatu 3
P.O. Box 330
00101 Helsinki, Finland

E.P.A . Registration No. 64137-5
E.P.A. Establishment No. 64137-FI-001
Made in Finland
KAO4-AVO

DIRECTIONS FOR USE

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

VEGETABLE USES - GREENHOUSE AND FIELD

MYCOSTOP is used for the control of seed rot, root and stem rot, and wilt diseases of vegetables caused by *Fusarium*, damping-off, and root rot caused by *Altemaria brassicola* on cole crops (Crucifers), and *Phomopsis* stem and foot root in greenhouse grown cucumbers. MYCOSTOP has also shown suppression of *Botrytis* Gray Mold and *Pythium* and *Phytophthora* root rots in the greenhouse.

SEED TREATMENT APPLICATION

MYCOSTOP can be applied as a seed treatment at a dose rate of 0.03-0.13 oz./lb. (2-8 g/kg) of seed. Do not treat melon seeds with MYCOSTOP.
MYCOSTOP can be mixed with seed in a planter box. As a planter box treatment fill box half full of seed, add half the required amount of MYCOSTOP and mix thoroughly with a stick or paddle. Add remainder of seed and MYCOSTOP and mix thoroughly.
To mix in a small container such as a jar, add the required amount of MYCOSTOP, shake until the seeds become coated with powder, then pour into planter box.
Treated seed should be sown without delay, but at least within a week if kept cool and dry.
The following crops are recommended for seed treatment with MYCOSTOP:

USING 0.13 OZ./LB. (8 G /KG) SEED	USING 0.08 OZ/LB (5 G /KG) SEED	USING 0.03 OZ./LB. (2 G /KG) SEED
Brassica species (cole crops)	dill	lettuce
herbs	leguminous plants	
leeks	parsley	
onions	root crops	
	spinach	
	tomatoes	

SOIL SPRAY AND DRENCH APPLICATIONS

Vegetable crops for which soil spray and drench applications of MYCOSTOP are recommended include:

broccoli	celery	melons	pumpkin
broccoli, Raab	collards	onion	radish
broccoli, Chinese	cucumber	parsley	rutabaga
Brussels sprouts	dill	pepper, bell	spinach
cabbage	gherkin	pepper, chili	squash, summer
cabbage, Chinese	kale	pepper, cooking	squash, winter
carrot	kohlrabi	pepper, sweet	tomato
cauliflower	lettuce	pimento	

MIXING INSTRUCTIONS

To make a suspension of MYCOSTOP, mix in a small volume of water such as 0.25-1.0 gallon and let stand for about 30 minutes. Agitate as needed to get product to evenly disperse before diluting to final volume. Do not tank mix MYCOSTOP with any pesticides or with concentrated fertilizers.

TRANSPLANT DIP

MYCOSTOP can be applied by dipping roots of transplants in a suspension shortly before planting. A suspension of 0.01 [(0.18 oz./13 gal)(5 g/50 liters)] to 0.1% (0.18 oz./1.3 gal.)(5 g/5 liters)] is recommended. Use the higher rate for high disease pressure.

BAND OR IN-FURROW APPLICATION

Apply 0.5-1.0 lb. MYCOSTOP/treated acre (0.5-1.0 MYCOSTOP kg/treated hectare) shortly before or at the time of planting in 25-50 gals. of water. A 7-inch band is recommended for banded applications. Lightly incorporate into the top 2-3 inches of soil. An in-furrow application of MYCOSTOP can also be made at the same rates. Spray all the soil that surrounds and covers the seed.

DRENCH OR SOIL SPRAY

MYCOSTOP can be applied by spraying or drenching a suspension on the soil or growing medium using 0.01-0.1% suspension. Follow with one-quarter to one-half inch of water on the same day.

- Soil Spray - Prepare a 0.1% [(0.18 oz./1.3 gal.)(5 g per 5 liters)(5 g per 1.3 gal.)] concentrate suspension and apply 2-4 gal. in an injector, proportioner, or sprayer to 800 ft² of raised surface area (e.g. raised beds, containers, bags, pots). Follow with irrigation to improve penetration of the organism into the root zone. Repeat every 2-6 weeks as needed for disease control. Use the higher rate and more frequent application for high disease pressure.
- Drench - Prepare a 0.01% [(0.18 oz./13 gal.)(5 g per 50 liters)(5 g per 13 gal.)] dilute suspension and apply 20-40 gal. to 800 ft² of raised surface area (e.g. raised beds, containers, bags, pots). This suspension may be fed through an injector, proportioner, or sprayer for better distribution. Follow with irrigation to saturate the soil or potting mix. Repeat every 2-6 weeks as needed for disease control. Use the higher rate and more frequent application for high disease pressure.

SIDE-DRESS APPLICATION

Apply 0.5-1.0 lb. MYCOSTOP/treated acre (0.5-1.0 MYCOSTOP kg/ha) in 25-100 gals. of water as a side dress application to the plant bed. Direct spray to base of plant and root zone. Repeat treatment every 2-4 weeks or as needed.

***BOTRYTIS* SUPPRESSION ON LETTUCE (GREENHOUSE)**

A MYCOSTOP spray of 0.01-0.1% suspension to the foliage every 2-4 weeks will help suppress *Botrytis* infection. Direct spray to bottom of leaves and wet foliage to point of run off.

ORNAMENTAL USES - GREENHOUSE AND FIELD

MYCOSTOP is used for the control of seed rots, root and stem rots and wilt diseases of ornamental crops caused by *Fusarium, Alternaria*, and *Phomopsis*. MYCOSTOP has also shown suppression of *Botrytis* Gray Mold, and *Pythium* and *Phytophthora* root rots in greenhouse ornamentals. Ornamental crops for which MYCOSTOP is recommended include:

FLORAL AND FOLIAGE ORNAMENTALS

African violet	Coral Bells	Geranium	Lupine	Saintpaulia
Ajuga	Crossandra	Gerbera	Marigold	Saxifraga
Alyssum	Croton	Gladiolus	Mathiola	Scindapsus
Anthurium	Cyclamen	Gynura	Monarda	Senecio
Artemesia	Daffodil	Gypsophila	Narcissus	Shasta daisy
Aster	Delphinium	Harestail grass	Nasturtium	Sinningia
Begonia	Dianthus	Hoya	Orchid	Snapdragon
Blanket flower	Dieffenbachia	Hyacinth	Peperomia	Statice
Bleeding heart	Dracena	Impatiens	Petunia	Sweet pea
Calceolaria	Dusty Miller	Pelargonium	Philodendron	Tulip
Carnation	Easter lily	Ivy	Phlox	Verbena
Chrysanthemum	Episcia	Kalanchoe	Poppy	Violet
Cineraria	Euphorbia	Larkspur	Pilea	Zinnia
Coleus	Fuchsia	Liatris	Primrose	
Columbine	Gazania	Lily	Primula	

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WOODY ORNAMENTALS

Almond (flowering)	Chokecherry	Hydrangea	Plum	Schefflera
Azalea	Crape myrtle	Pine	Poinsettia	Spruce
Camellia	Elm	Juniper	Polyscias	Vinca
Cedar	Euonymous	Oregon grape	Protea	
Cherry (ornamental)	Ficus	Pachysandra	Redwood	
	Fir	Palm (areca)	Rhododendron	

SEED TREATMENT

MYCOSTOP is applied as a seed treatment at a dose rate of 0.08 oz./lb. (5 g/kg) of seed. Do not treat seeds of Dusty Miller with MYCOSTOP. To apply add MYCOSTOP to the seeds in a clean container. Close lid and shake container until seeds become evenly coated with MYCOSTOP powder.

Treated seeds should be sown without delay, but at the latest, within a week, if kept cool and dry.

SOIL SPRAY AND DRENCH APPLICATIONS

MIXING INSTRUCTIONS

To make a suspension of MYCOSTOP, mix in a small volume of water such as 0.25-1.0 gallon and let stand for about 30 minutes. Agitate as needed to get product to evenly disperse before diluting to final volume. Do not tank mix MYCOSTOP with any pesticides or with concentrated fertilizers.

TRANSPLANT DIP

MYCOSTOP can be applied by dipping roots of transplants such as carnations or chrysanthemums in a suspension shortly before planting. A suspension of 0.01 [(0.18 oz./13 gal)(5 g/50 liters)] to 0.1% [(0.18 oz./1.3 gal.)(5 g/5 liters)] is recommended. Use the higher rate for higher disease pressure.

TRANSPLANTS, POT and FLOWERING PLANT TREATMENT

MYCOSTOP can be applied by spraying or drenching a suspension on the soil or growing medium using 0.01-0.1% suspension. Follow with one-quarter to one-half inch of water on the same day.

Soil Spray - Prepare a 0.1% [(0.18 oz./1.3 gal.)(5 g per 5 liters)(5 g per 1.3 gal.)] concentrate suspension and apply 2-4 gal. in an injector, proportioner, or sprayer to 800 ft^2 of raised surface area (e.g. raised beds, containers, bags, pots). Follow with irrigation to improve penetration of the organism into the root zone. Repeat every 2-6 weeks as needed for disease control. Use the higher rate and more frequent application for high disease pressure.

Drench - Prepare a 0.01% [(0.18 oz./13 gal.)(5 g per 50 liters)(5 g per 13 gal.)] dilute suspension and apply 20-40 gal. to 800 ft^2 of raised surface area (e.g. raised beds, containers, bags, pots). This suspension may be fed through an injector, proportioner, or sprayer for better distribution. Follow with irrigation to saturate the soil or potting mix. Repeat every 2-6 weeks as needed for disease control. Use the higher rate and more frequent application for high disease pressure.

SIDE-DRESS APPLICATION

Apply 0.5-1.0 lb. MYCOSTOP/treated acre (0.5-1.0 MYCOSTOP kg/treated hectare) in 25-100 gals. of water as a side dress application to the plant bed. Direct spray to base of plant and root zone. Repeat treatment every 2-4 weeks or as needed.

BOTRYTIS SUPPRESSION ON GREENHOUSE ORNAMENTALS

A MYCOSTOP spray of 0.01-0.1% suspension to the foliage every 2-4 weeks will help suppress *Botrytis* infection. Direct spray to bottom of leaves and wet foliage to point of run off.

AGRONOMIC USES

MYCOSTOP is used for the control of seed rot, root and stem rot, and wilt diseases caused by *Fusarium* in agronomic crops such as cotton, corn (field), soybeans, wheat, sorghum, beans and peas.

SEED TREATMENT

MYCOSTOP is applied as a seed treatment at a dose rate of 4-8 oz./100 lb of seed (2.5-5.0 g/kg). Apply as a planter box treatment by mixing MYCOSTOP with the seed before treatment. For best results, fill planter box half full of seed, add half the required amount of MYCOSTOP and mix thoroughly with a stick or paddle. Add remainder of seed and MYCOSTOP and mix thoroughly.

Good results can also be obtained by mixing MYCOSTOP with seed in a separate container, then pouring into planter box.

Treated seed should be sown without delay, but at least within a week, if kept cool and dry.

SOIL SPRAY APPLICATIONS

MIXING INSTRUCTIONS

To make a suspension of MYCOSTOP, mix in a small volume of water such as 0.25-1.0 gallon and let stand for about 30 minutes. Agitate as needed to get product to evenly disperse before diluting to final volume. Do not tank mix MYCOSTOP with any pesticides or with concentrated fertilizers.

BAND OR IN-FURROW APPLICATION

Apply 0.5-1.0 lb. MYCOSTOP/treated acre (0.5-1.0 kg MYCOSTOP/treated hectare) shortly before or at the time of planting in 25-50 gal. of water. A 7-inch band is recommended for banded applications. Lightly incorporate into the top 2-3 inches of soil.

An in-furrow application of MYCOSTOP can also be made at the same rates. Spray all the soil that surrounds and covers the seed.

INTEGRATED DISEASE CONTROL PROGRAMS

MYCOSTOP can be used in integrated disease control programs. However, it should not be tank mixed with any pesticide. MYCOSTOP can be used the same day, if registered and if not prohibited, with benomyl, thiophanate methyl, metalaxyl, vinclozolin, fosetyl-Al, and propamocarb hydrochloride. Pesticides not compatible with MYCOSTOP have a 4-day interval between applications.

DRIP IRRIGATION - CHEMIGATION

Refer to supplemental labeling entitled "Supplemental Chemigation Labeling for MYCOSTOP Drip Irrigation" for use directions for chemigation. Do not apply this product through any irrigation system unless the supplemental labeling on chemigation is followed.

STORAGE AND DISPOSAL

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

STORAGE: MYCOSTOP consists of living microbes, which is packed in moisture and air proof unit packages. Store in a cool (below 8°C, 46°F), dry place. Use all contents in packet the same day. Do not store opened packets since product will lose its activity.

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

CONTAINER DISPOSAL: 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.

NOTICE TO USER

Seller makes no warranty, express or implied, of merchantability, fitness or otherwise concerning the use of this product other than as indicated on the label. User assumes all risks of use, storage or handling not in strict accordance with accompanying directions.

Supplemental Chemigation Labeling for MYCOSTOP® Drip Irrigation in Agronmic, Vegetable and Ornamental Crops

(For MYCOSTOP EPA Registrations 64137-1, 64137- 2, 64137-4, and 64137-___)

GENERAL

1. Apply MYCOSTOP only through drip irrigation system(s). Do not apply MYCOSTOP through any other type of irrigation system.
2. A pesticide supply tank is recommended. Continuous agitation of MYCOSTOP in the supply tank is required. Begin application of MYCOSTOP during the beginning of irrigation.
   For Agronomic Crops
   - Use MYCOSTOP at 0.5-1.0 lb./treated acre (0.5-1.0 kg/treated hectare).
   - Apply in sufficient water to move into root zone.
   - Repeat every 2-6 weeks as needed for disease control.

   For Vegetable and Ornamental Crops
   - On an area basis, use MYCOSTOP at 0.3-0.5 oz./800 ft^2 (1.0-2.0 g/10 m^2). On an individual plant basis, use MYCOSTOP at 0.03-0.17 oz. (1.0-5.0 g) per 200 plants.
   - Use higher rate and more frequent application for large plants and pots, and for high disease pressure.
   - Apply in sufficient amount of water to move into root zone. Repeat every 2-6 weeks as needed for disease control.
3. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.
4. If you have any questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
5. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of a responsible person, shall shut the system down and make necessary adjustments should the need arise.

SPECIAL INSTRUCTIONS FOR USE OF PUBLIC WATER SOURCES

1. 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 from public water systems are in place.
2. 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.
3. 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.
4. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
5. 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.
6. 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.
7. 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.

SPECIAL INSTRUCTIONS FOR DRIP IRRIGATION (CHEMIGATION) SYSTEMS

1. 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.

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

Kemira Agro Oy, Porkkalankatu 3, P.O. Box 330, 00101 Helsinki, Finland
Revision - KAO4-AVO-SUPPLEMENTAL