

1381-253

1/16/2014

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Biopesticides and Pollution Prevention Division (7511C)
1200 Pennsylvania Avenue NW
Washington, DC 20460

EPA Reg. Number:

1381-253

Date of Issuance:

JAN 16 2014

Term of Issuance:

Unconditional

Name of Pesticide Product:

Mk-1

NOTICE OF PESTICIDE:

X Registration
Reregistration
(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

Winfield Solutions, LLC
P.O. Box 64589
St. Paul, MN 55164-0589

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Biopesticides and Pollution Prevention 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 under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). 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 her 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 registration does not eliminate the need for continual reassessment of the pesticide. If the EPA determines at any time that additional data are required to maintain in effect an existing registration, the Agency will require submission of such data under section 3(c)(2)(B) of FIFRA.

This product is unconditionally registered in accordance with FIFRA Sec. 3(c)(5) and is subject to the following terms:

1. Submit and/or cite all data required for registration of your product under FIFRA section 3(c)(5) and section 4 when the Agency requires all registrants of similar products to submit such data.
2. Revise the EPA Registration Number to read, "EPA Reg. No. 1381-253."
3. A one year study is required to satisfy the Storage and Stability and Corrosion Characteristics requirements (Guidelines: OCSPP 830.63.17 and 830.63.20). You have 18 months from the date of registration to provide these data.
4. Submit three (3) copies of the revised final printed labeling before you release the product for shipment.

A stamped copy of the label and an A-79 Enclosure are enclosed for your records.

Signature of Approving Official:

Robert McNally Jr.
Robert McNally, Director

Biopesticides and Pollution Prevention Division (7511P)

Date:

1/16/14

CONCURRENCES

SYMBOL	EPA Form 8570-6	7511P	7511P				
	7511P	7511P	7511P				
SURNAME	Walsh	Riley	LEAHY				
DATE	1/14/14	1/14/14	1/16/14				

ACCEPTED 2/16

JAN 16 2014

Mk-1

PLANT GROWTH REGULATOR

Under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 1381-253

Hormone compounds to stimulate plant growth.

ACTIVE INGREDIENTS

*Cytokinin, as Kinetin	0.090%
*Gibberellic Acid	0.030%
*Indole-3-butyric Acid	0.045%

OTHER INGREDIENTS	<u>99.835%</u>
TOTAL	100.000%

- *Contains 0.03 oz. cytokinin, as kinetin/qt.
- *Contains 0.01 oz. gibberellic acid/qt.
- *Contains 0.015 oz. indole-3-butyric acid/qt.

KEEP OUT OF REACH OF CHILDREN

CAUTION

FIRST AID	
If in eyes	<ul style="list-style-type: none"> • 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 center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. HOTLINE NUMBER: In case of medical emergency call 1-877-424-7452.	

Read additional precautionary statements below.

SHAKE WELL BEFORE USING.

EPA Reg. No. 1381- ELG

EPA Est. No. 63603-KS-1
NET CONTENTS: 1 Gal. [2.5 Gal., 15 Gal.]

Distributed by:
WINFIELD SOLUTIONS, LLC,
P.O. Box 64589, St. Paul, MN 55164

1/0113/4

Lot No. _____

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**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

Caution: Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Wear the appropriate Personal Protective Equipment (PPE).

Personal Protective Equipment:

Mixers, loaders, applicators and other handlers must wear:

- long-sleeved shirt and long pants,
- shoes plus socks

Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

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 by cleaning of equipment or disposal of equipment washwater or rinsate.

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 State or Tribal 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 the protection of 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 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 4 hours unless wearing appropriate PPE.

EXCEPTION: If the product is soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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:

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- coveralls over long-sleeved shirt and long pants,
- chemical-resistant gloves, and
- shoes plus socks.

GENERAL CHEMIGATION INSTRUCTIONS

Apply this product only through sprinkler including center pivot, lateral move, side (wheel) roll, traveler, big gun, solid set, hand move, or furrow 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 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 supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Maintain agitation in the supply tank while adding the required amount of Mk-1, and throughout the application. Mk-1 should be added to the supply tank at the end of water application (prior to last complete cycle in moving systems).

The correct amount of Mk-1 to add is calculated as the rate in fluid ounces per acre x the number of acres covered by the contents of the supply tank.

(For example, if the supply tank covers ten acres and the rate on the label for that crop is 2 fluid ounces per acre, add $10 \times 2 = 20$ fluid ounces to the supply tank at the beginning of the last full cycle).

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.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the 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 the pesticides and capable of being fitted with a system interlock.

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

The pesticide supply tank should be agitated throughout the application of Mk-1. Mk-1 should be applied at the end of the water application.

Mk-1 should be applied at the end of the irrigation period in a sufficient amount of water to allow proper coverage of plant or crop but not to exceed 19.2 fluid ounces of Mk-1 per acre per application.

IN-FURROW CHEMIGATION

1. Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential for water source contamination from backflow if water flow stops.

2. Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:

a. 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.

b. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

c. 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.

d. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

e. 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.

f. 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.

Maintain agitation in the supply tank while adding the required amount of Mk-1, and throughout the application. Mk-1 should be added to the supply tank at the end of water application (prior to last complete cycle in moving systems).

The correct amount of Mk-1 to add is calculated as the rate in fluid ounces per acre x the number of acres covered by the contents of the supply tank.

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(For example, if the supply tank covers ten acres and the rate on the label for that crop is 2 fluid ounces per acre, add $10 \times 2 = 20$ fluid ounces to the supply tank at the beginning of the last full cycle).

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 a 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 a system interlock.

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

Maintain agitation in the supply tank while adding the required amount of Mk-1, and throughout the application. Mk-1 should be added to the supply tank at the end of water application (prior to last complete cycle in moving systems).

The correct amount of Mk-1 to add is calculated as the rate in fluid ounces per acre x the number of acres covered by the contents of the supply tank.

(For example, if the supply tank covers ten acres and the rate on the label for that crop is 2 fluid ounces per acre, add $10 \times 2 = 20$ fluid ounces to the supply tank at the beginning of the last full cycle).

Mk-1 should be applied at the end of the irrigation period in a sufficient amount of water to allow proper coverage of plant or crop but not to exceed 19.2 fluid ounces of Mk-1 per acre per application.

IMPORTANT: Read the entire "Directions for Use" and the "Notice" before using this product. If terms are not acceptable, return the unopened product container at once.

Apply Mk-1 by ground or air. If applied by air, use 3 to 5 gallons of water per acre. If applied by ground on vegetable or field crops, use 5 to 25 gallons of water per acre. For tree crops, use 50 to 200 gallons of water per acre. For turfgrass, apply by ground using 0.2 to 0.5 gallon on water per 1,000 square feet.

Test results have shown that this product can stimulate higher yields through a larger root mass, earlier fruiting and increased fruit retention. Mk-1 is a tool to increase plant efficiency.

SPRAY PROGRAM FOR VEGETABLE CROPS

BEANS AND PEAS:

- 1st Application - Apply 3.4 fluid ounces per acre when the first trifoliolate is unfolded.
- 2nd Application - Apply 3.4 fluid ounces per acre 2 weeks after the first application.
- 3rd Application - Apply 3.4 fluid ounces per acre at first bloom.

ASPARAGUS, BROCCOLI, CABBAGE, CELERY, LETTUCE, MINT AND SPINACH:

- 1st Application - Apply 3.4 fluid ounces per acre when the fifth leaf begins to unfold.
- 2nd Application - Apply 3.4 fluid ounces per acre 2 weeks after the first application.
- 3rd Application - Apply 3.4 fluid ounces per acre 2 weeks after the second application.

For maximum benefit, apply continuous applications of 0.8 - 1.2 fluid ounces per acre at 7-10 day intervals after the first application throughout the production season.

CANTALOUPE, CUCUMBERS, MUSKMELON, WATERMELON, HONEYDEW, OKRA, AND SQUASH:

- 1st Application - Apply 3.4 fluid ounces per acre when the third leaf begins to unfold.
- 2nd Application - Apply 3.4 fluid ounces per acre 2 weeks after the first application.
- 3rd Application - Apply 3.4 fluid ounces per acre 2 weeks after the second application.

For maximum yields, make continuous applications of 2.1 fluid ounces per acre at 7-10 day intervals after the first application throughout the growing season.

EGGPLANT, PEPPER, AND TOMATO:

- 1st Application - Apply 3.4 fluid ounces per acre when the plants have 3 true leaves.
- 2nd Application - Apply 3.4 fluid ounces per acre 2 weeks after the first application.
- 3rd Application - Apply 3.4 fluid ounces per acre 2 weeks after the second application.

For maximum yields and quality, make continuous applications of 0.8 fluid ounce per acre after the first application at 7-10 day intervals throughout the growing season.

SWEET CORN AND POPCORN: Apply one, two, or all of the following applications.

Apply 4.7 to 6.3 fluid ounces per acre in-furrow or alternatively 2 inches beside and 2 inches below seed or alternatively 3 inches below the seed with a strip till machine at planting.

AND/OR

Apply 3.4 fluid ounces per acre when the plants are in the 4-6 leaf stage.

AND/OR

Apply 3.4 fluid ounces per acre at the 8-10 leaf stage.

NOTE: If seed has been treated with Mk-1, do not apply Mk-1 as an in-furrow, band, side dress or mark out application.

WHITE OR RED POTATOES:

Apply 4.7 to 6.3 fluid ounces per acre in a band, mark out, side dress or in-furrow application before or after planting.

NOTE: If seed has been treated with Mk-1, do not apply Mk-1 as an in-furrow, band, side dress or mark out application.

For foliar applications, apply according to *one* of the following schedules:

To increase tuber size number and promote better rooting:

- 1st Application - Apply 3.4 fluid ounces per acre at tuber initiation.
 - 2nd Application - Apply 3.4 fluid ounces per acre 2-3 weeks after the first application.
- The last application should be during tuber bulking.

OR

To enhance tuber size and uniformity:

- 1st Application - Apply 3.4 fluid ounces per acre at tuber initiation.
- 2nd Application - Apply 3.4 fluid ounces per acre at the onset of tuber bulking.

CARROTS, PARSLEY, RADISHES, AND TURNIPS:

- 1st Application - Apply 3.4 fluid ounces per acre when the plants have 3 true leaves.
- 2nd Application - Apply 3.4 fluid ounces per acre 2 weeks after the first application.
- 3rd Application - Apply 3.4 fluid ounces per acre 2 weeks after the second application.

SWEET POTATOES AND YAMS:

- 1st Application - Apply 0.2 to 0.4 fluid ounce per acre on a band just wide enough to cover all the plants seven to fourteen days after transplanting.
- 2nd Application - Apply 0.5 fluid ounce per acre in a band as above at twenty-eight days after transplanting.
- 3rd Application - Apply 0.1 fluid ounce per week along with a foliar fertilizer such as 15-5-5 at the rate of 32 fluid ounces or 1 quart per acre. Continue this program on a weekly basis until the potatoes have desirable harvest size.

NOTE: If seed has been treated with Mk-1, do not apply Mk-1 as an in-furrow, band, side dress or mark out application.

FOLIAR SPRAY PROGRAM FOR FRUIT CROPS

BANANAS:

- 1st Application - Apply 3.1 to 6.3 fluid ounces per acre shortly prior to or at first bloom.
- 2nd Application - Apply 3.1 to 6.3 fluid ounces per acre two to three weeks after the first application.

CITRUS (GRAPEFRUIT, LEMON, LIME, AND ORANGES):

- 1st Application - Apply 3.1 to 6.3 fluid ounces per acre at first bloom.
 - 2nd Application - Apply 3.1 to 6.3 fluid ounces per acre two to three weeks later.
- If there is an extended bloom period, make additional applications at 3.1 to 6.3 fluid ounces per acre.

GRAPES:

- 1st Application - Apply 3.4 fluid ounces per acre shortly prior to or at bloom stage.
- 2nd Application - Apply 3.4 fluid ounces per acre 2 weeks after the first application.

GUAVA AND PAPAYA:

- 1st Application - Apply 3.4 fluid ounces per acre shortly prior to or at first bloom stage.
- 2nd Application - Apply 3.1 to 6.3 fluid ounces per acre 2 to 3 weeks after the first application.

POME (APPLE, MAYHAW):

- Apply 6.3 fluid ounces per acre starting at pink bud stage and repeat every 7 to 10 days. Do not make more than 5 applications.

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STONE (PEACH, CHERRY, APRICOT, NECTARINE):

Apply 6.3 fluid ounces per acre starting at pink bud stage and repeat every 7 to 10 days. Do not make more than 5 applications.

STRAWBERRIES:

1st Application - Apply 3.4 fluid ounces per acre shortly prior to or at first bloom stage.
2nd Application - Apply 3.4 fluid ounces per acre 2 weeks after the first application.

SPRAY PROGRAM FOR FIELD CROPS

ALFALFA: Established

1st Application - Apply 3.4 fluid ounces per acre upon dormancy break. Apply when sufficient re-growth is present.
2nd Application - Apply 3.4 fluid ounces per acre after each cutting. Apply when sufficient re-growth is present.

ALFALFA: Newly Seeded

1st Application - Apply 3.4 fluid ounces per acre when seedling alfalfa is in the 3rd to 4th trifoliate stage.

CANOLA:

1st Application - Apply 3.4 fluid ounces per acre between the rosette stage and bolting.
2nd Application - Apply 3.4 fluid ounces per acre at 20 percent bloom.
3rd Application - Apply 3.4 fluid ounces per acre at early pod fill.

COTTON - Non-Transgenic Varieties:

Apply Mk-1 according to one of the following schedules.

NOTE: If seed has been treated with Mk-1, do not apply Mk-1 as an in-furrow, band, side dress or mark out application.

Schedule A:

1st Application - Apply 3.1 fluid ounces per 50 lbs. of seed in the hopper box.

OR

Apply 3.4 fluid ounces per acre in-furrow or alternatively 2 inches beside and 2 inches below seed or alternatively 3 inches below the seed with a strip till machine at planting.

2nd Application - Apply 3.1 fluid ounces per acre at pinhead square. This can be applied in a tank mix that contains 4 fluid ounces per acre of Mepex® Plant Regulator brand of mepiquat chloride¹⁾.

3rd Application - Apply 4.2 fluid ounces per acre at early bloom.

Schedule B:

1st Application - Apply 2.1 fluid ounces per acre on a band at the 3-7 leaf stage.

2nd Application - Apply 3.1 fluid ounces per acre at the pinhead square stage.

This can be applied in a tank mix that contains 4 fluid ounces per acre of Mepex® Plant Regulator brand of mepiquat chloride¹⁾.

3rd Application - Apply 3.1 fluid ounces per acre at early bloom.

COTTON - Transgenic Varieties:

(Cotton varieties that have been genetically manipulated to have insect-resistance and/or herbicide-resistance built in)

NOTE: If seed has been treated with Mk-1, do not apply Mk-1 as an in-furrow, band, side dress or mark out application.

1st Application - Use according to *one* of the following methods
Apply 3.1 fluid ounces per 50 lbs. of seed in the hopper box.

OR

Apply 3.4 fluid ounces per acre in-furrow or alternatively 2 inches beside and 2 inches below seed or alternatively 3 inches below the seed with a strip till machine at planting.

2nd Application - Apply 4.2 fluid ounces per acre at pinhead square. This can be applied in a tank mix that contains 4 fluid ounces per acre of Mepex® Plant Regulator brand of mepiquat chloride¹⁾.

3rd Application – Repeat the above application at first bloom. If needed for vegetative growth control, repeat the above application at mid-bloom.

Higher rates and/or late season applications may be warranted under high stress conditions where square and/or boll retention is needed. During the bloom and post-bloom period, additional applications or higher rates can be applied but do not exceed a total of 25.5 fluid ounces per acre per season.

1) TANK MIXING INFORMATION – Mk-1 and Mepex

Perform a Compatibility Test for Mix Components before preparing the tank mix application. Read and follow the applicable Restrictions and Limitations and Directions For Use on all products involved in tank mixing. The most restrictive labeling applies to tank mixes.

Compatibility Test

Add components to a jar in the following sequence, using 1/2 teaspoon of Mk-1 and 1/2 teaspoon of Mepex.

- 1) Water: For 20 gallons per acre spray volume, use 3.3 cups (800 ml) of water. For other spray volumes, adjust rates accordingly. Use only water from the intended source at the source temperature.
- 2) Mk-1, then Mepex: Cap the jar and invert 10 cycles.
- 3) Let the solution stand for 15 minutes.
- 4) Evaluate the solution for uniformity and stability. The spray solution should not have free oil on the surface, nor fine particles that precipitate to the bottom, nor thick (clabbered) texture. Do not use any spray solution that could clog spray nozzles.

Tank Mixing Order

- 1) Water: Begin by agitating a thoroughly clean sprayer tank half full of the required amount of clean water.
 - 2) Mk-1, then Mepex
 - 3) Remaining quantity of water
- Only moderate agitation should be used while mixing and transporting.

FIELD CORN*: Apply one, two or all of the following applications.

Apply 4.7 to 6.3 fluid ounces per acre in-furrow or alternatively 2 inches beside and 2 inches below seed or alternatively 3 inches below the seed with a strip till machine at planting.

AND/OR

Apply 6.7 to 10.8 fluid ounces per acre at the 3 to 10 leaf stage.

AND/OR

Apply 6.7 fluid ounces per acre between initial silking and brown silk.

*For field corn grown for seed, apply 4.7 to 6.3 fluid ounces per acre in-furrow or alternatively 2 inches beside and 2 inches below seed or alternatively 3 inches below the seed with a strip till machine at planting.

NOTE: If seed has been treated with, do not apply as an in-furrow, band, or side dress application.

FLAX:

- 1st Application - Apply 3.4 fluid ounces per acre when the plant is 2-4 inches tall.
- 2nd Application - Apply an additional 3.4 fluid ounces per acre two to three weeks later.

GRAIN SORGHUM:

- 1st Application - Apply 4.7 to 6.3 fluid ounces per acre in-furrow or alternatively 2 inches beside and 2 inches below seed or alternatively 3 inches below the seed with a strip till machine at planting.
- 2nd Application - Apply 3.4 fluid ounces per acre at the 3-5 leaf stage.
- 3rd Application - Apply 3.4 fluid ounces per acre after the 8th but before the 12th leaf stage.

NOTE: If seed has been treated with Mk-1, do not apply Mk-1 as an in-furrow, band, side dress or mark out application.

PEANUTS:

- 1st Application - Apply 3.4 fluid ounces per acre at the 3-5 leaflet stage.
- 2nd Application - Apply 3.4 fluid ounces per acre at early flowering.
- 3rd Application - Apply 3.4 fluid ounces per acre at initial pegging.
- 4th Application - Apply 5.0 fluid ounces per acre during early pod fill.

SOYBEANS: Apply according to *one* of the following schedules.

- 1) Apply 3.4 fluid ounces per acre at the 3-5 trifoliolate leaf stage.
Apply a second application of 3.4 fluid ounces between R1 and R3.
- 2) If the first application is missed, apply 6.7 fluid ounces per acre between R1 and R3.

SUGAR BEETS:

In-Furrow or Mark Out:
Apply 4.7 to 6.3 fluid ounces per acre in-furrow or mark out.

Foliar program:

- 1st Application - Apply 3.4 fluid ounces per acre between the 2nd and 10th true leaf stage.
- 2nd Application - Apply 3.4 fluid ounces per acre 2-3 weeks after the first application.

NOTE: If seed has been treated with Mk-1, do not apply Mk-1 as an in-furrow, band, side dress or mark out application.

SUGARCANE:

- 1st Application – Use *one* of the following methods:
Apply 2.1 fluid ounces per acre in the furrow at planting.

OR

Apply 3.4 fluid ounces per acre at the 2-3 leaf stage.
- 2nd Application - Apply 3.4 fluid ounces per acre one month after emergence.
- Additional Applications - Apply 3.4 fluid ounces per acre on monthly intervals throughout the production season for maximum benefit.

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SUNFLOWERS:

Apply 3.4 to 4.2 fluid ounces per acre in-furrow at planting.

AND/OR

Apply 3.4 fluid ounces per acre at 4-true leaves.

AND/OR

Apply an additional 3.4 fluid ounces per acre two to three weeks later.

WHEAT, BARLEY, OATS, AND RYE: Apply according to *one* of the following schedules.

1) Apply 4.7 to 6.3 fluid ounces per acre in-furrow at planting.

OR

2) If no at-planting application, apply 3.4 fluid ounces per acre prior to jointing.
Apply 3.4 fluid ounces at the flag leaf stage.

NOTE: If seed has been treated with Mk-1, do not apply Mk-1 as an in-furrow, band, side dress or mark out application.

FOLIAR SPRAY PROGRAM FOR RICE

Mk-1 should be applied at 3.4 fluid ounces per acre as a foliar spray to the plant during either one of the following stages of development.

Primary Recommendations - 3 to 7 Leaf Stage: This application must be made after the rice seedling has 3 fully emerged leaves and the 4th leaf is beginning to emerge, but before the seedling has completed development of 7 leaves or 3 tillers. This period for application generally begins about 3-6 weeks after seeding and ends 5-9 weeks after seeding. The duration of this period depends on the variety and the growing conditions. This application may be made in conjunction with corresponding herbicide applications.

Alternate Recommendation - Two Millimeter (mm) Panicle Growth Stage: If the primary application is missed, Mk-1 can be applied to stimulate cell differentiation in the developing panicle. This application must be made when no more than 10% of the main culms are at the 2 mm panicle growth stage. The 2 mm panicle growth stage occurs immediately after internode elongation or joint movement has begun. Mk-1 must be applied as soon as internode elongation is detected so the 2 mm panicle growth stage is not missed. It is better to apply slightly early than to apply late. **IMPORTANT:** Timing of the application at 2 mm growth stage is critical. Check the entire field for stage of plant development. Large fields may require split applications on upper and lower ends of the field to ensure proper timing throughout the field.

TURFGRASS

On all turfgrass, regardless of use, use no more than 0.3 fluid ounce per 1,000 square feet per month.

WARM SEASON TURF (Bermuda, Bermuda hybrids, Zoysia, Centipede, St. Augustine, etc.): For lower traffic areas and where Mk-1 is used as a maintenance program, begin applications early in the growing season. Apply at the rate of 0.1 to 0.2 fluid ounce per 1,000 square ft. Maintenance application should be made on a two to three week schedule throughout the growing season. Applications can be made with foliarly-applied urea for added benefits.

COOL SEASON TURF (Tall Fescue, Rye, Bentgrass, Bluegrass, etc.): Apply 0.2 fluid ounce per 1,000 square feet in fall, or when stand is established. Repeat application in late winter when grasses begin to grow actively.

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APPLICATION WITH FOLIARLY-APPLIED UREA: Maximum benefit and color can be achieved when Mk-1 applications are made with foliarly-applied urea solutions. To prepare urea solution, dissolve 46% urea into spray solution at the rate of 1.0 lb. per 5,000 square feet to be sprayed and apply with specified rate of Mk-1.

SPECIFIC RATES OF APPLICATION

TEES AND GREENS: Apply 0.1 to 0.2 fluid ounce per 1,000 square feet on a 2 week schedule throughout the growing season. Begin in early spring after grasses have begun to grow. Sunbelt and transition zones should continue spray program throughout playing season. Courses north of the transition zone should continue applications through September.

FAIRWAYS: Begin applications in early spring as soon as grasses have begun to actively grow. Apply 0.1 fluid ounce per 1,000 square feet and repeat on a monthly schedule as long as grass is growing.

PRE-TOURNAMENT QUICK GREEN-UP: Apply at the rate of 0.1 to 0.2 fluid ounce per 1,000 square feet in conjunction with urea solution 4 to 5 days prior to playing time. Make application with a minimum spray volume of 0.5 gallon of water per 1,000 square feet.

SPRING DORMANCY BREAK: Apply 0.1 fluid ounce per 1,000 square feet in spring as soon as new growth (opening) is visible. Raking of thatch prior to making this application is most desirable. Application at this time generates rapid growth and often reduces incidence of "spring die back" on certain species of grass.

FALL APPLICATION FOR WINTER HARDINESS: Make 2 applications 7-10 days apart in late summer or early fall just prior to the cessation of normal active growth. Apply 0.1 to 0.2 fluid ounce per 1,000 square feet. Make application with a spray volume of 0.5 gallon of water per 1,000 square feet. Applications at this time will greatly increase root mass and depth of roots. Winter kill problems are often greatly reduced.

COMMERCIAL TURF, CEMETERIES, ATHLETIC FIELDS, GOLF COURSES, AND OTHER FINE TURF AREAS: Applications of 0.1 to 0.2 fluid ounces per 1,000 square feet made at any point during the growing season will produce desirable results. Make applications during the very early growth stages and continue on a regular monthly schedule throughout the growing season. Healthier and more beautiful turf can be realized in high traffic areas such as golf greens and tees by making regular applications every two weeks.

SOD FARMS

Apply 4.2 to 8.4 fluid ounces per acre on a monthly basis during the growing season. Two weeks prior to cutting sod, make an application of 4.2 to 8.4 fluid ounces per acre.

SPECIFIC RATES OF APPLICATION

After sod is cut, a reestablishment program is necessary. Start this program as soon as there is any greening over 30% of the area. Spray with 4.2 to 8.4 fluid ounces per acre of Mk-1. Repeat in 2 weeks and thereafter once per month throughout the growing season. Make a final application of 4.2 to 8.4 fluid ounces per acre 2 weeks before dormancy.

Start the monthly program again as soon as some green-up has started in the spring.

When species started from seed have reached 1 inch in height, the monthly treatment may be started and followed in the same way as non-seeded varieties.

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SPECIAL NOTE FOR ALL DIRECT SEEDED GRASSES

Acting through its unique combination of plant growth regulators, Mk-1 is a ready-to-use seed dressing that aids in enhancing germination and early season root and top growth.

Mk-1 can be used at the rate of 2.1 to 4.2 fluid ounces per 100 pounds of seed. Sufficient water needs to be added to insure uniform coverage. Improper coverage will minimize product performance.

SEED TREATMENT

SPECIAL NOTE FOR ALL DIRECT SEEDED CROPS

Acting through its unique combination of plant growth regulators, Mk-1 is a ready-to-use seed dressing that aids in enhancing germination and early season root and top growth.

Use Mk-1 at the rate of 1.05 – 4.2 fluid ounces per 100 lbs. of seed. Use the higher rate when conditions favor poor germination such as cool soil temperatures or low germination seed. Sufficient water needs to be added to insure uniform coverage. Improper coverage will minimize product performance.

Seed Type				
Alfalfa	Corn	Oats	Rye	Tomatoes
Barley	Cotton	Okra	Sorghum	Wheat
Cabbage	Cucumber	Onions	Soybeans	
Canola	Dry Beans	Peanuts	Spinach	
Carrots	Eggplant	Peas	Squash	
Cauliflower	Lettuce	Peppers	Sugarbeets	
Celery	Melons	Rice	Sunflowers	

NOTE: If seed has been treated with Mk-1, do not apply Mk-1 as an in-furrow, band, side dress or mark out application.

RED OR WHITE POTATOES:

Choose *one* of the following methods:

Dip potato seed pieces in a solution of 1 part Mk-1 to 355 parts water (0.4 fluid ounces/gal. of water) for 30 to 60 seconds or spray seed pieces with the above solution so that seed pieces are covered and thoroughly wetted. Mk-1 can be used with a fungicide program.

OR

Use 0.5 to 1.05 fluid ounces (volumetric measurement), which equals 15.8 to 32.2 grams on a dry basis of Mk-1 per 100 lbs. of cut seed pieces. Treat seed pieces immediately after they have been cut. Apply so that the cut seed pieces are thoroughly covered. Mk-1 can be mixed with other seed treatments and carriers such as fir and alder bark to insure uniform coverage.

NOTE: If seed has been treated with Mk-1, do not apply Mk-1 as an in-furrow, band, side dress or mark out application.

SWEET POTATOES AND YAMS:

Dip potato slips in a solution of 1 part Mk-1 to 355 parts water (0.4 fluid ounces/gal. of water) for 30 to 60 seconds. MK-1 can be used with a fungicide program.

NOTE: If seed has been treated with MK-1, do not apply MK-1 as an in-furrow, band, side dress or mark out application.

MECHANICAL SEED TREATERS

Apply the appropriate amount of Mk-1 to a premeasured amount of seed and mix thoroughly until all seed are uniformly coated. Seed can be treated in this manner and stored until used for planting.

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Do not use treated seed for food, feed or oil purposes. An approved dye must be added to distinguish Mk-1 treated seed and prevent inadvertent use for food, feed or oil purposes. Seed treated with this product must be labeled in accordance with all applicable requirements of the Federal and State seed laws. **DO NOT USE TREATED SEED FOR FOOD, FEED OR OIL PURPOSES.**

BROADCAST SEED APPLICATION

Partially fill broadcast spreader with a premeasured amount of seed. Apply the appropriate amount of Mk-1 diluted with water on the surface of the seed. Mix with a stick or paddle until all seed are coated. Repeat procedure until broadcast spreader is filled. **DO NOT USE TREATED SEED FOR FOOD, FEED OR OIL PURPOSES.** Treat only those seeds needed for immediate use and planting. Do not store excess treated seed beyond planting time.

SPECIAL NOTE FOR ALL TRANSPLANTED CROPS

Two methods are recommended for this program:

- A. Dip or spray roots with a solution of 0.8 fluid ounces of Mk-1 per gallon of water prior to transplanting.
- B. Bedding seedlings may be sprayed or drenched in flats 12-24 hours before transplanting to reduce transplant shock with a solution of 0.8 fluid ounces of Mk-1 per gallon of water.

Begin the foliar program two (2) weeks after transplanting. A combination of the transplant and foliar spray program is most effective.

STORAGE AND DISPOSAL

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

Pesticide Storage: Protect from freezing. Store out of direct sunlight.

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

Container Handling: Use label language appropriate for container size and type.

Nonrefillable containers. Do not reuse or refill this container. Clean container promptly after emptying.

Nonrefillable container equal to or less than 5 gallons. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container $\frac{1}{4}$ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Nonrefillable container greater than 5 gallons. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container $\frac{1}{4}$ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Tip the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or

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recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure or accident, call
CHEMTREC 1-800-424-9300.**

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