

# **CUCURBIT VEGETABLE: CROP GROUP 9 - DOWNY MILDEW**

## General Information

### GENERAL INFORMATION

#### MIXING AND SPRAYING

RANMAN 400SC FUNGICIDE can be used effectively in dilute or concentrate sprays. Thorough, uniform coverage is essential for disease control.

NOTE: Slowly invert container several times to assure uniform mixture of formulation before adding this product to the spray tank.

Dosage rates on this label indicate fluid ounces of RANMAN 400SC FUNGICIDE per acre, unless otherwise stated. Under conditions favorable for disease development, the highest rate specified and shortest application interval should be used. For best product performance in all applications utilizing water volumes up to 60 gallons per acre, an organosilicone surfactant should be added according to the manufacturer's label recommendations in order to improve spray coverage when the disease infection is severe. However, a non-ionic surfactant or a blend of an organosilicone and a non-ionic surfactant may be used according to the manufacturer's label when disease infection is moderate or light. Do not use a surfactant in applications to grapes or in soil drench application to green house grown bell peppers or tomato greenhouse transplants.

RANMAN 400SC FUNGICIDE may be applied with all types of spray equipment normally used for ground and aerial applications.

The required amount of RANMAN 400SC FUNGICIDE should be added slowly into the spray tank during filling. With concentrate sprays, pre-mix the required amount of RANMAN 400SC FUNGICIDE in a clean container and add to the spray tank as it is being filled. Keep agitator running when filling spray tank and during spray operations. DO NOT allow spray mixture to stand overnight or for prolonged periods. Prepare only the amount of spray required for immediate use. Spraying equipment should be thoroughly cleaned immediately after the application.

Apply RANMAN 400SC FUNGICIDE in sufficient water to obtain adequate coverage of the foliage. Gallonage to be used will vary with crop and amount of plant growth. Spray volume will usually range from 20 to 100 gallons per acre (200 to 1000 liters per hectare) for dilute sprays, and 5 to 10 gallons per acre (50 to 100 liters per hectare) for concentrate ground and aerial sprays. For aerial applications, apply

RANMAN 400SC FUNGICIDE in a minimum of 5 gallons of water per acre. Application through sprinkler irrigation systems is not recommended unless specific directions are given for a crop. See application and calibration instruction in the label.

#### CROP RESPONSE

RANMAN 400SC FUNGICIDE is not phytotoxic to the crop or succeeding crops when applied according to label instructions.

#### INTEGRATED PEST MANAGEMENT

RANMAN 400SC FUNGICIDE is an excellent disease control agent when used according to label directions for control of several Oomycete fungi. Although RANMAN 400SC FUNGICIDE has limited systemic activity, it should be utilized as a protectant fungicide and applied before the disease infects the crop. Depending upon the level of disease pressure, good protection of the crop against disease can be expected over a period of 7 to 10 days. RANMAN 400SC FUNGICIDE is recommended for use as part of an Integrated Pest Management (IPM) program, which may include the use of disease-resistant crop varieties, cultural practices, crop rotation, biological disease control agents, pest scouting and disease forecasting systems aimed at preventing economic pest damage. Practices known to reduce disease development should be followed. Consult your state cooperative extension service or local agricultural authorities for additional IPM strategies established in your area. RANMAN 400SC FUNGICIDE may be used in State Agricultural Extension advisory (disease forecasting) programs that recommend application timing based upon environmental factors that favor disease development.

#### RESISTANCE MANAGEMENT

Some plant pathogens are known to develop resistance to products used repeatedly for disease control. RANMAN 400SC FUNGICIDE's mode/target site of action is complex III of fungal respiration: ubiquinone reductase, Qi site, FRAC code 21. A disease management program that includes alternation or tank mixes between RANMAN 400SC FUNGICIDE and other labeled fungicides that have a different mode of action and/or control pathogens not controlled by RANMAN 400SC FUNGICIDE is essential to prevent disease resistant pathogens populations from developing. RANMAN 400SC FUNGICIDE should not be utilized continuously nor tank mixed with fungicides that have shown to have developed fungal resistance to the target disease.

Since pathogens differ in their potential to develop resistance to fungicides, follow

the directions outlined in the “Directions For Use” section of this label for specific resistance management strategies for each crop.

Consult with your Federal or State Cooperative Extension Service representatives for guidance on the proper use of RANMAN 400SC FUNGICIDE in programs that seek to minimize the occurrence of disease resistance.

RANMAN 400SC FUNGICIDE is not cross-resistant with other classes of fungicides that have different modes of action.

#### APPLICATION AND CALIBRATION TECHNIQUES FOR SPRINKLER IRRIGATION

Apply this product only through center pivot, motorized lateral move, traveling gun, solid set or portable (wheel move, side roll, end tow, or hand move) irrigation system(s). 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 apply RANMAN 400SC FUNGICIDE through irrigation systems connected to a public water system. “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 per year.

Controls for both irrigation water and pesticide injection systems must be functionally interlocked, so as to automatically terminate pesticide injection when the irrigation water pump motor stops. A person knowledgeable of the irrigation system and responsible for its operation shall be present so as to discontinue pesticide injection and make necessary adjustments, should the need arise.

The irrigation water pipeline must be fitted with a functional, automatic, quick-closing check valve to prevent the flow of treated irrigation water back toward the water source. The pipeline must also be fitted with a vacuum relief valve and low-pressure drain, located between the irrigation water pump and the check valve, to prevent back-siphoning of treated irrigation water into the water source.

Always inject RANMAN 400SC FUNGICIDE into irrigation water after it discharges from the irrigation pump and after it passes through the check valve. Never inject pesticides into the intake line on the suction side of the pump.

Pesticide injection equipment must be fitted with a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump. Interlock this valve to the power system, so as to prevent fluid from being withdrawn from

the chemical supply tank when the irrigation system is either automatically or manually turned off.

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 irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Spray mixture in the chemical supply tank must be agitated at all times, otherwise settling and uneven application may occur. DO NOT apply when wind speed favors drift beyond the area intended for treatment.

RANMAN 400SC FUNGICIDE may be used through two basic types of sprinkler irrigation systems as outlined in Sections A and B below. Determine which type of system is in place, then refer to the appropriate directions provided for each type.

#### A. Center Pivot, Motorized Lateral Move and Traveling Gun Irrigation Equipment

For injection of pesticides, these continuously moving systems must use a positive displacement injection pump of either diaphragm or piston type, constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock and capable of injection at pressures approximately 2-3 times those encountered within the irrigation water line. Venturi applicator units cannot be used on these systems.

Thoroughly mix recommended amount of this product for acreage to be covered into the same amount of water used during calibration and inject into system continuously for one revolution or run. Mixture in the chemical supply tank must be continuously agitated during the injection run. Shut off injection equipment after one revolution or run, but continue to operate irrigation system until this product has been cleared from the last sprinkler head.

#### B. Solid Set and Portable (Wheel Move, Side Roll, End Tow, or Hand Move)

##### Irrigation Equipment

With stationary systems, an effectively designed in-line venturi applicator unit is preferred which is constructed of materials that are compatible with pesticides; however, a positive-displacement pump can also be used.

Determine acreage covered by sprinkler. Fill tank of injection equipment with water and adjust flow to use contents over a 30 to 45 minute period. Mix desired amount of RANMAN 400SC FUNGICIDE for acreage to be covered with water so that the total mixture of this product plus water in the injection tank is equal to the quantity of

water used during calibration.

Agitation is recommended. RANMAN 400SC FUNGICIDE can be injected at the beginning or end of the irrigation cycle or as a separate application. Stop injection equipment after treatment is completed and continue to operate irrigation system until this product has been cleared from last sprinkler head.

## Limitations, Restrictions, and Exceptions

### Instructions

#### Resistance Management:

DO NOT apply more than six sprays of RANMAN 400SC FUNGICIDE per crop. Alternate sprays of RANMAN 400SC FUNGICIDE with a fungicide with a different mode of action. DO NOT make more than three consecutive applications of RANMAN 400SC FUNGICIDE. Follow this by at least three applications of fungicides having a different mode of action before applying additional RANMAN 400SC FUNGICIDE.

#### Application Instructions:

For Downy mildew control, make fungicide applications on a 7- to 10-day schedule beginning with initial flowering or when disease conditions are favorable for disease development, but prior to disease development. Use the low rate and long interval as disease preventative sprays or when disease conditions are low. Increase to highest rate and shortest interval under moderate to heavy disease pressure.

RANMAN 400SC FUNGICIDE should be tank-mixed with an organosilicone surfactant when the disease infection is severe, or a non-ionic surfactant or a blend of an organosilicone and a non-ionic surfactant when disease infection is moderate or light, at the manufacturer's label recommendations for water volumes up to 60 gallons per acre. Normal water volumes are 20 to 50 gallons per acre.

RANMAN 400SC FUNGICIDE may be applied through sprinkler irrigation equipment. See calibration directions following this section.

### Restrictions

The Pre-Harvest Interval (PHI) for this crop group is 0-day.

Crops on this label may be planted immediately after the last treatment. Do not plant other crops not registered for this product within 30 days after the last

application.

Method

[Broadcast/Foliar Air](#)

[Broadcast/Foliar Ground](#)

[Sprinkler Irrigation](#)

Rates

[field\\_rates 0](#)

[field\\_rates 1](#)

•

Restricted Entry Interval

12 hours

Timings

[Beginning with initial flowering or when disease conditions are favorable for disease development, but prior to disease development.](#)