



# Ranman® fungicide protects yields with a new mode of action in Tomatoes, Cucurbits and Potatoes.

Ranman® fungicide, marketed by FMC, has a unique mode of action that provides highly effective control and excellent prevention of Late blight in tomatoes and potatoes, plus Downy mildew in cucurbits when applied as a foliar treatment. Unlike most fungicides that only control some disease stages, Ranman is active in all stages of the disease life cycle. It provides excellent protection against diseases caused by oomycetes, especially infection by pathogens of the genera of *Phytophthora*, *Pythium*, *Pseudoperonospora* and *Plasmopara*. Ranman is an excellent fungicide for protecting yields in tomatoes, cucurbits and potatoes.

## EXCELLENT FUNGICIDE PROTECTION:

Ranman is a contact fungicide, which is classified as a protectant with anti-sporulating effects and has limited systemic activity. It can be applied by ground, chemigation or aerial application. Ranman is formulated as a suspension concentrate (SC) with 3.33 lb/gal or 34.5% of the active ingredient cyazofamid.

## OUTSTANDING ACTIVITY ON OOMYCETES:

- *Phytophthora* (e.g. Late blight) – Late blight, Pink rot
- *Pythium* – Damping off, Root rot
- *Plasmopara* – Downy mildew
- *Pseudoperonospora* – Downy mildew

## ONLY FUNGICIDE IN FRAC GROUP 21:

The active ingredient in Ranman is cyazofamid, which belongs to the cyanoimidazole chemical class and is the only fungicide in FRAC Group 21.

## UNIQUE MODE OF ACTION:

The biochemical mode of action of the active ingredient inhibits all stages of oomycetes fungal development. Its mode of action is new and unique, inhibiting the Q<sub>i</sub> site of the cytochrome bc 1 site in complex III of the fungal mitochondrial membrane. Ranman provides growers with a much-needed novel mode of action for resistance management as an alternative to existing fungicides with its new respiration target site of C4. There is no documented cross-resistance of Ranman with existing fungicides.

## Resistance Management

Ranman should be part of a disease management program including alternate sprays of fungicides with a different mode of action. Do not make more than three consecutive applications of Ranman. Follow with at least three applications of fungicides with a different mode of action before applying Ranman again.

## GOOD RESIDUAL ACTIVITY:

Its affinity for waxy surfaces of crops ensures superior rain fastness and long residual activity. Residual foliar activity of five days or more can be anticipated depending on disease pressure.



## NON-VOLATILE PRODUCT:

Ranman® fungicide is classified as a non-volatile compound as the active ingredient has a low vapor pressure ( $<1.33 \times 10^{-5}$  pascals @ 25° C).

## REDUCED-RISK CHEMISTRY:

Ranman is considered reduced-risk chemistry. The active ingredient in Ranman has minimal to moderate acute toxicity in acute oral, dermal and inhalation tests. It is minimally irritating to the eyes and skin, and is a weak dermal sensitizer. Ranman poses negligible risk to human health and the environment when applied according to label directions.

## LABELED CROPS AND DISEASES:

Ranman controls Late blight on tomatoes and potatoes, plus Downy mildew and Phytophthora blight on cucurbit crops with minimal adverse crop response. Ranman has received 24(c) labels for at-plant Pink rot control in potatoes in several states (ND, MN, ID and ME). Short pre-harvest intervals of zero days in tomatoes and cucurbits and seven days in potatoes fit common cultural practices. Re-entry interval is 12 hours. Crops not on the label can be planted 30 days after the last application. Ranman is not recommended for use in greenhouses.

## SPECIFIC CROP USE INFORMATION:

**Tomatoes** – Apply foliar mid- to late-season for Late blight control using 2.1 to 2.75 fl oz/A. Do not apply more than six spray applications per crop, which can total 16.5 fl oz/acre/year. Use higher rates when increased disease pressure is present.

**Cucurbits** – Apply foliar mid- to late-season as needed for Downy mildew control (2.1 to 2.75 fl oz/A) or Phytophthora blight control (2.75 fl oz/A) on a weekly schedule. Do not apply more than six spray applications per crop, which can total 16.5 fl oz/acre/year.

**Potatoes** – Apply foliar for Late blight control using 2.1 to 2.75 fl oz/A. Do not apply more than 10 spray applications per crop, which can total 27.5 fl oz/acre/year. Use higher rates when increased disease pressure is present. For Late blight tuber rot control see specific recommendations on product label. Apply with surfactant.

All foliar applications of Ranman should be made with a surfactant in accordance with specific label instructions.

## GOOD SPREADING PROPERTIES:

Ranman has very low water solubility (0.1 ppm) but good spreading properties on the plant surface. In field situations, the use of an adjuvant contributes to further promote thorough plant coverage. Coverage is essential with any fungicide for good disease control. Outstanding wetting ability on crop foliage is a beneficial characteristic, especially for protectant and locally systemic fungicides, as thorough foliage coverage is desired.

Rain fastness forms very soon after Ranman application. Thorough plant coverage is promoted by the addition of adjuvants. Please refer to the label for recommendations on adjuvants.

PACKAGE SIZES: Available in one-gallon and one-quart plastic jugs

**For more information, please contact your FMC Star Retailer.**



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