



MilStop®

Powdery Mildew Control in Grapes

Grape Powdery Mildew, an issue facing every grape grower, can be managed with MilStop® applied preventatively and as an eradicant. Applied either alone, tank mixed, or in a rotation, MilStop has been shown to be effective in controlling powdery mildew from pre-bloom to harvest. Control of powdery mildew with MilStop effectively reduces berry injury that can lead to additional *Botrytis* infections and, ultimately, more Botrytis Bunch Rot. MilStop can be used when sulfur sprays are withheld to prevent residues or off-aroma issues in wine grapes.

In addition to proper timing, COMPLETE COVERAGE is critical to success with MilStop.

MilStop has two primary modes of action against *Uncinula necator*, the Grape Powdery Mildew fungus: desiccation (drying up) of fungal spores and hyphae, and the increase of pH on the plant tissue creating a hostile environment for the fungal pathogens.

Some examples of programs utilized by grape growers are shown below. Use of MilStop in an organic program requires close attention to cultural management; this is outlined below.

Preventative program examples:

Timing	MilStop Application Rate*
Example A	
Apply every 7 - 14 days from 3 - 5 " shoot growth through summer until harvest	3 lb/acre (3.4 kg/ha)
Example B	
At 3 – 5" shoot growth	3lb/acre (3.4 kg/ha)
At 10" shoot growth	3 lb/acre (3.4 kg/ha)
At immediate pre-bloom to early bloom	3 lb/acre (3.4 kg/ha), if PM is visible use 5 lb/acre (5.6 kg/ha)
At first post bloom	3 lb/acre (3.4 kg/ha), if PM is visible use 5 lb/acre (5.6 kg/ha)
Throughout the summer up to harvest	3 lb/acre (3.4 kg/ha), if PM is visible use 5 lb/acre (5.6 kg/ha)
Post-harvest on highly susceptible Vinifera varieties	3 lb/acre (3.4 kg/ha), if PM is visible use 5 lb/acre (5.6 kg/ha)

*All rates are recommended to be applied in a water volume of 100 gallons/acre (1,000 liters/ha). MilStop can be tank mixed or applied in rotation with conventional fungicides.

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BioWorks®

How You Grow Matters™

Eradication Applications

Timing	MilStop Application Rate*
Apply whenever powdery mildew is seen. Reported by growers to be a “hammer” and will stop PM in its tracks, allowing systemic fungicides time to act.	5 lb/acre (5.6 kg/ha) every 7 - 14 days followed by conventional fungicides or other organic inputs for certified organic operations

**All rates are recommended to be applied in a water volume of 100 gallons/acre (1,000 liters/ha). MilStop can be tank mixed or applied in rotation with conventional fungicides.*

Tank Mixing

When tank mixing MilStop, do not add additional surfactants; MilStop is formulated with surfactants. Also note, MilStop solutions have a pH above 8 and should not be mixed with products that are sensitive to high pH hydrolysis. Avoid the use of any pH buffers in the spray solution.

Organic Grape Production Cultural Considerations

Successful organic production of grapes requires relentless attention to cultural details such as:

Canopy management - prune or leaf pull to promote open canopy structure throughout the season for optimum air flow and allow sunlight to reach the berries and vines.

Sanitation - it is critical to remove diseased clusters, mummified berries, cluster stems to prevent carryover of disease inoculum. Application of dormant sprays to the bark and wood of vines can also reduce the presence of inoculum.

Scouting - Assess disease risk and the presence of disease throughout the season by inspecting blocks of vines throughout the season.

Always read and follow MilStop package label directions. MilStop® is a registered trademark of BioWorks, Inc.