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Garden Notes

GN 106

ABOUT POWDERY MILDEW

Powdery mildew is the most common disease of grapes. It is caused by a fungus and it does not require wet or humid weather to spread rapidly – in fact, spores may be killed by hosing vines with water. It grows best at temperatures of 70° to 85°F and the spread is stopped when the temperature exceeds 92°F for several hours. American juice varieties, such as 'Concord' and 'Niabell' are resistant.

SYMPTOMS: On dormant canes in the winter, infections from the previous season appear as red blotchy areas. On leaves, initial symptoms appear as yellow spots on the upper leaf surface. As spores are produced, the colony has a white, powdery appearance. On fruit and cluster stems, the disease resembles a white dusting on the entire berry surface. The disease creates a web-like russetting and causes the fruit to remain small, crack, and not ripen. Spores are produced in chains that can be seed with a hand lens.

CONTROL: Plant in full sun where possible. Do not over-water or apply excessive nitrogen fertilizer. Keep grapes carefully pruned and remove nonfruitful shoots in the spring to allow exposure of fruit to sunlight and good air flow through the canopy; this will also help control bunch rot.

Research has shown that **infection can occur when temperatures reach 70°F for 6 or more hours, 3 days in a row.** In some years, these temperatures may be met just as the new growth is beginning, and in some years, it may be as late as early May. Conditions remain favorable through much of the spring; mildew growth is minimal when temperatures exceed 95°F.

The standard method of control is to spray wettable sulfur at 7 to 10 day intervals through the spring, beginning in the spring when temperatures are favorable, and continuing until the hot weather sets in. If temperatures remain hot after late June, spraying is less necessary, but mildew can spread if cooler spells persist. Once the grapes begin to soften, they are less susceptible to mildew. If a rain occurs, reapply the sulfur as soon as possible after the foliage dries. You may want to use wettable sulfur early in the season, and then as foliage thickens use dusting sulfur for improved coverage. Good coverage is important, which means thoroughly covering the tops and bottoms of all leaves; however, you can choose to direct your sprays to the fruit only. Safer's "Garden Fungicide" (and similar formulations) consists of sulfur combined with surfactants similar to those in dishwashing detergent. Sulfur is used to prevent rather than eradicate infections, so regular applications are necessary for control. Other products (mixed with water) that may have potential include neem oil, baking soda, cow's milk, and homemade compost tea.

FOR MORE INFORMATION:
"Powdery Mildew on Fruits and Berries" (UC Pest Note 7494)
"Powdery Mildew on Ornamentals" (UC Pest Note 7493)
"Powdery Mildew on Vegetables" (UC Pest Note 7406)
UC IPM website: www.ipm.ucdavis.edu

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