

Cherry Powdery Mildew Control

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Early season identification and spread

By shuck fall it may be possible to see the first mildew colonies appearing on leaves. This is called the **primary infection** since the colony was established from overwintering spores. These will be small white spots with a powdery appearance. In the early season, look for infected leaves in the tree crotch or on root suckers, where leaves are succulent and humidity is high.

The white powdery spores are called **conidia**. Conidia spread the disease during the late spring and summer causing additional **secondary infection**. As the disease progresses, colonies will spread to cover more of the entire leaf surface. Infected leaves may be somewhat distorted and colonies may be found most easily on the underside of the leaves. Tree centers and root suckers are still the best place to find the disease.

Fruit and late season infection

The initial stages of fruit infection are difficult to identify. It is often necessary to look across the cherry so as to view the white powdery spores as they stick up above the horizon. You will need a hand lens at this stage to properly identify. Be careful! Sometimes dust can be misidentified as spores. As the infection progresses the white powdery spores become more obvious and pronounced and identification can be made without a lens. Eventually, the infected area becomes sunken and pitted.

By mid-summer, **overwintering spores** are beginning to form on leaves. The overwintering spore is called an **ascospore** and it develops within a **cleistothecium**. The cleistothecium appears on leaves as a small ball, visible to the naked eye. It is the ascospore that starts the infection process the following spring.

Conditions for primary infection

Typically, it takes 1/10 inch of rain (or irrigation) and temperatures of at least 50° F in the early spring for primary infection to occur.

Conditions for secondary infection

The summer stage differs in that there is no need for rain, only high humidity. However, in the Mid-Columbia, conditions of high humidity most often occur after a series of light showers that raise the humidity during warm weather. Ideal conditions for the spread of the disease during the late spring and summer are simply high humidity and temperatures of 70° F to 80° F.

Control

The key to control of the disease on the fruit is to keep the disease off the leaves. This means a regular, consistent spray program from shuck fall to harvest.

One suggested spray program that takes resistance management into account includes the following:

Product	# of applications	Timing	Residual
Oil	2	shuck fall to pit hardening	10-12 days
Abound	1	after oil	10-14 days
DMI (rotate products) (Rally, Rubigan, Elite, Orbit)	1-4	late season to harvest	10-14 days

Effectiveness of Control Products*

Fungicide	Brown Rot Fruit Rot	Powdery Mildew	Resist. in WA***
Abound	Good	Excellent**	No resist. reported
Elite	Good to Excellent	Excellent**	OK at labeled rates
Oil	Not applicable	Good to Excellent	No resist. reported
Orbit	Excellent	Excellent**	Severe resistance
Rally	Good	Excellent**	Resist. reported
Rubigan	Good	Good to fair**	???

* Ratings of fungicide effectiveness from Dr. Jay Pscheidt, OSU. Resistance ratings from Dr. Gary Grove, WSU.

** Resistant pathogens will lower the effectiveness of these fungicides

*** Mid-Columbia resistance levels may be significantly different

Horticultural Mineral Oil

- Apply prior to pit hardening.
- Don't apply within 14 days of a micronized sulfur application, follow the label.
- Don't apply azinphos-methyl before, during or after an oil application.
- Don't apply oils with spreader stickers, Nu-Film-P or Nu-Film-17 (pinolene based products)
- Don't apply when temperatures are in excess of 90°F. There have been no reports of damage when applications were made when temperatures were below 90°F but climbed above 90°F later in the day.
- Don't apply 24 hours before or after a frost.
- Don't spray oil on heat or water stressed plants.
- Don't spray oil on wet foliage, as oil will simply run off.

- Don't apply to Lapins?