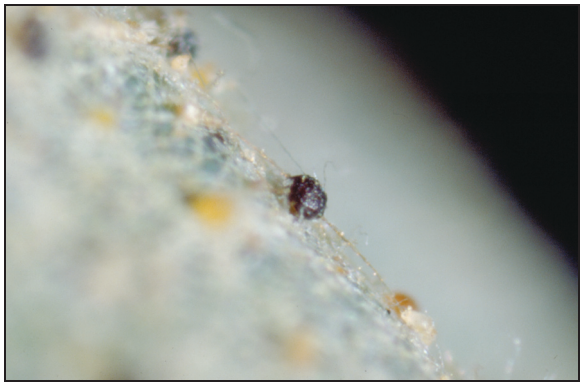
# Powdery Mildew

## (*Erysiphe necator*)

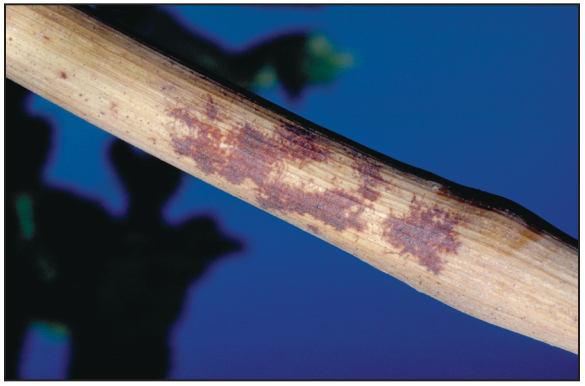
- Early spring infections on underside of basal leaves
- Light yellow colonies, about 1/4 inch diameter

- Condiaspores cause infections resulting in powdery, white mats of mycelia on the upper and lower leaf surfaces of shaded leaves.
- Similar looking infections will occur on shoots, petioles, and cluster parts

- Pre-veraison berry infections have dusty white appearance
- Severe infections may stunt and crack berries



- Chasmothecium, the overwintering fruiting body previously referred to as a cleistothecium, is formed on tissue that is severely infected in late summer



- Dormant canes have dark red blotchy marks in areas that were infected the previous growing season

UNIVERSITY of CALIFORNIA
Agriculture & Natural Resources

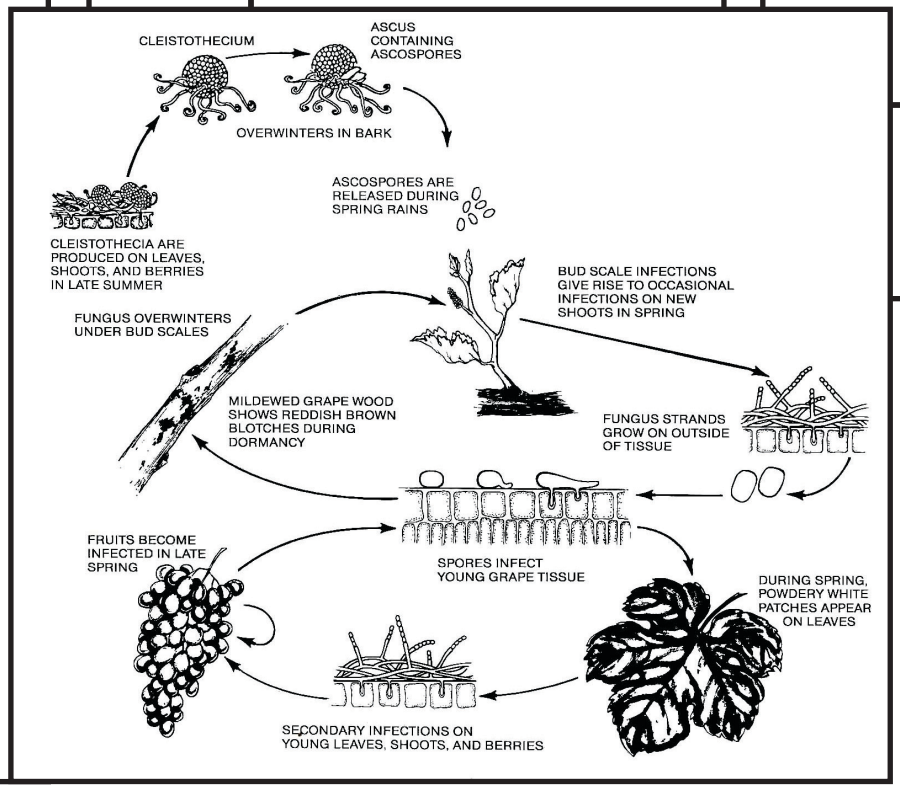
*Authors: Lucia G. Varela & Rhonda J. Smith, UC Cooperative Extension. Photos by Jack K. Clark, University of California.*

# Powdery Mildew

## (*Erysiphe necator*)

| Date | What to look for |
|---|---|
| February – March | After bud break, ascospores are released under conditions of mild temperatures (45-80 °F) as well as rainfall, frost protection, dew or fog that wets leaves continuously for 12-15 hours. About 7-10 days after temperatures warm to 65-85 °F, look for individual, pale yellow colonies, about ¼" in diameter on the lower surfaces of basal leaves. "Flag" shoots, covered in gray mycelium, sometimes emerge from dormant buds. |
| April – May | Monitor temperatures after initial infections occur. Spores (conidia) produced during the spring and summer first appear 7 - 10 days after ascospores have caused the primary infection previously described. The optimum temperature for conidia to germinate is 77 °F. Mycelium produced by these spores grows rapidly between 70-85°F and a spore-to-spore generation can occur in 5 days. Mats of hyphal strands cause mildew colonies to look like a white powder. Look for mildew colonies at the top and bottom sides of shaded leaves as well as cluster rachises and stems in dense canopies or in crowded, shoot positioned vertical canopies. Examine areas in the block that are historical mildew hotspots or are immediately adjacent to a severely infected vineyard. |

| Date | What to look for |
|---|---|
| June – July | Overhead sprinkler irrigation, light summer rainfall and mild ambient temperatures will lower inside canopy temperatures and increase mildew spore germination and infections even in traditionally warm months. Look for powdery, white web-like mat of mycelial strands on any green, shaded tissue. The summer repeating cycle – spore production, germination, infection and new spore production – can continue to occur throughout the season on green tissue. |




| Date | What to look for |
|---|---|
| August | With the onset of veraison, new berry infections are reduced yet existing colonies can continue to grow on the fruit. Fruit cannot become infected when sugars reach 12 - 15 °Brix. |
| September | When days become shorter and high temperatures are below 90 °F, chasmothecia - small, round, dark fruiting bodies - begin to form on the mycelial mats. Petioles, shoots and cluster parts are still susceptible to new infections. In the fall, infection sites on the shoot turn black and "stain" the canes with a spider web-like pattern. |
| December | Dormant canes will have dark red, blotchy areas from the previous season's infections. |