

A3805

Vine crops disorder: Powdery mildew

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Powdery mildew is a foliar disease that occurs late in the season on cucumbers, gourds, muskmelons, pumpkins, and squash. It is less common on watermelon. On susceptible crops, this disease is often severe enough to significantly reduce yields by reducing the number and size of fruit. The quality of the fruit can also be indirectly affected by powdery mildew due to increased risk of sunscald, incomplete ripening, poor flavor of crops such as melon, and reduced storage life of pumpkins and winter squash.

Symptoms and effects

Symptoms first appear as pale yellow spots on the oldest leaves. Lesions often develop on the lower leaf surface or on shaded leaves. Plants that have begun to fruit are often affected first. As the disease progresses, a white or light tan powdery growth covers affected plant leaves and petioles. Eventually, affected leaves turn brown and die. Fruit are rarely infected, although occasionally portions of pumpkin fruit are covered with a white powdery mildew. Powdery mildew does not lead to rotting of the flesh of affected fruit.

Disease cycle

Two fungi are responsible for powdery mildew: *Erysiphe cichoracearum* and *Sphaerotheca fuliginea*. These fungi overwinter on perennial hosts and greenhouse cucumbers in southern states. Each year fungal spores are blown north.

Once infection occurs, symptoms and signs of the disease first appear 3–7 days afterward. While warm, humid conditions favor infection, drier conditions actually favor the spread of the fungal pathogen.



Powdery mildew kills leaves; it indirectly damages fruit by increasing the risk of sunscald and incomplete ripening.

Control

For cucumbers, muskmelon, pumpkin, and squash, plant resistant or tolerant varieties (see table). Significant breeding efforts are ongoing to increase the number of varietal options available with powdery mildew resistance.

On susceptible crops, fungicides may be applied every 5–7 days once the disease appears in the field to protect healthy plants. These treatments will have no effect on plants that are already diseased. Continue treatments until harvest. Refer to Extension publication *Commercial Vegetable Production in Wisconsin* (A3422) for recommended fungicides.

Vine crop varieties with resistance or tolerance to powdery mildew.

Crop	Varieties
Cucumber	Resistant: Burpless, Carolina, Cobra, Cool Breeze, Dasher II, Daytona, Eureka, Fanfare, General Lee, Impact, Indy, Intimidator, Jackson Classic, Lafayette Classic, Lynx, Marketmore, Napoleon Classic, Orient Express, Panther, Patio Pickle, Prancer, Slice More, Speedway, Stonewall, Sweet Slice, Tasty Green, Thunder, Thunderbird, Turbo
Muskmelon	Resistant: Alienor, Ambrosia, Aphrodite, Athena, Bush Star, Crème de Menthe, Bolero, Dorado, Earli Brew, Early Dew, Eclipse, Fastbreak, Galileo, Gallicum, Gourmet, Harper Hybrid, Honey Brew, Marygold, Minerva, Minnesota Midget, Morning Ice, Odyssey, Pulsar, Quasar, Sancho, Saticoy, Sonora, Star Fire, Sugar Bowl, Sweet 'n Early
Pumpkin	Resistant: Magic Lantern, Merlin, Mystic Plus
Summer squash	Tolerant: Hurakan, Payroll, Prelude II, and Sunray
Winter squash	Tolerant: Autumn Delight, Bugle, Bush Delicata, Harlequin, Royal Ace, Sweet Lightning, Table Star, Table Treat, Tay Belle



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