

Extension FactSheet

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Powdery Mildew of Vine Crops

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Powdery mildew can be a serious problem on foliage and stems of cucumbers, melons, squash, pumpkins, and ornamental gourds. The disease is widespread in Ohio.

Symptoms

Small patches of fine, white threads develop on surfaces of infected leaf blades in late July on most vine crops in Ohio. These patches grow together and eventually cover stems and foliage with white, powdery masses of spores. In severe infections, leaves will yellow and die. Petioles, stems and, rarely, fruit will also become infected. Early death of leaves can decrease the total amount of fruits formed as well as reduce fruit size. Loss of foliage hastens maturity of fruit and increases sunburning. Stems infected with Powdery Mildew become brown. This can spoil the appearance of the “handles” on pumpkins which lowers value of the fruit.

Causal Organisms

Two fungi cause powdery mildew on vine crops, *Sphaerotheca fuliginea* and *Erysiphe cichoracearum*. *S. fuliginea* is most common in Ohio. Powdery mildew fungi thrive under conditions of high relative humidity, warm temperatures, low light, high fertility, and succulent plant growth. Unlike bacteria and many fungi, free

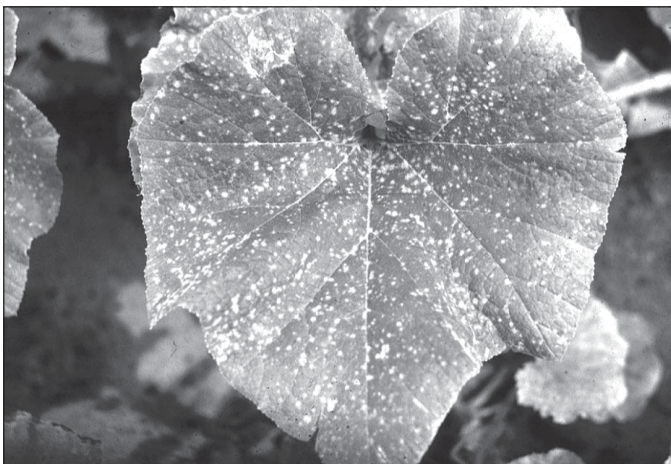


Figure 1. Powdery mildew on the upper surface of a pumpkin leaf.

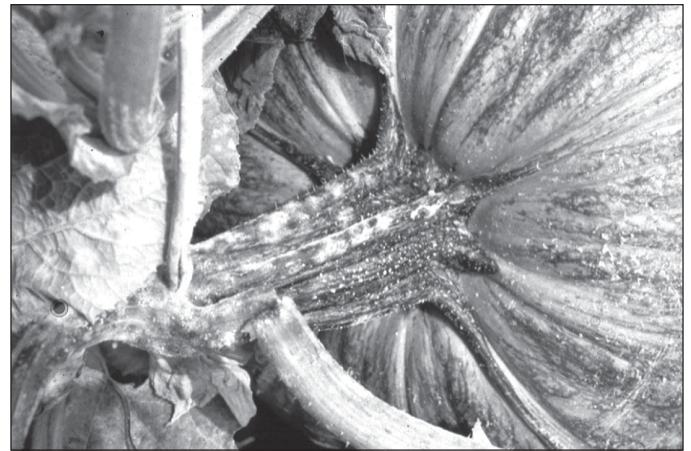


Figure 2. Severe powdery mildew on the stem “handle” of a pumpkin.

moisture on leaf surfaces actually inhibits infection by these pathogens, although very high relative humidity is required for spore germination. Powdery mildew fungi grow only on living host plants. They survive the winter as dormant mycelium on perennial plants or as spores in thick-walled fruiting structures. Powdery Mildew spores can be blown into Ohio in the spring from warmer southern areas. Mature foliage is most readily infected; very young leaves are nearly immune.

Control

1. Plant resistant cultivars of cucumbers and muskmelons. Pumpkin varieties vary greatly in susceptibility to this disease.
2. Use cultural practices that avoid excessive succulence, overcrowding, shading, overwatering, or excess fertilization especially with nitrogen.
3. Avoid making new planting of vine crops in the vicinity of older plantings, especially if mildew is already present.
4. Beginning in late July or early August when Powdery Mildew first appears, regular applications of fungicides may be required. Fungicide recommendations are contained in the Ohio Vegetable Production Guide (OSU Extension Bulletin 672).

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