



HOME | INSECTS, PESTS, AND DISEASES | PEST, DISEASE AND WEED IDENTIFICATION | POWDERY MILDEW

# Powdery Mildew

Powdery mildew occurs on many different flowers, woody ornamentals and trees.

 ARTICLES | UPDATED: JUNE 12, 2014



**Powdery mildew on Poinsettia**

Several different genera of fungi cause powdery mildew. Although usually one genus specifically attacks one or two different plants, some species of powdery mildew (such as *Golovinomyces cichoracearum* formerly *Erysiphe cichoracearum*) attack a wide range of plants. All the powdery mildew fungi are obligate parasites, requiring live tissue to grow and reproduce. In greenhouses, the fungus

survives by spreading from the diseased plants to the new plants of that same crop. If that crop is not grown for several weeks, the fungus dies out and diseased plants must be brought into the greenhouse to establish the fungus again. Outdoors, fungal structures form on leaves and twigs that allow the fungus to survive winter conditions.

## Symptoms

- White powdery fungus grows on the upper leaf surface of the lower leaves.
- Leaves may be twisted, distorted, then wilt and die.
- On some plants such as kalanchöe, infected leaves have dry, corky, scab-like spots and fungal growth is not obvious.

## Conditions Favoring Powdery Mildew

- High relative humidity at night
- Low relative humidity during day
- 70-80F (22-27C) temperatures (These conditions prevail in spring and fall)

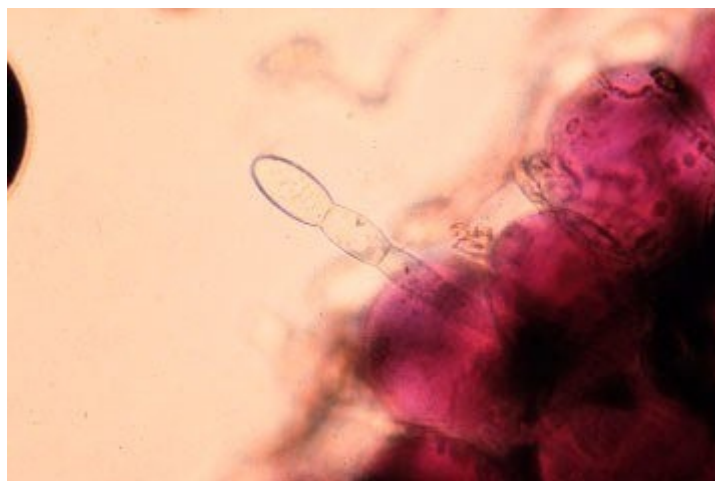
The spores are carried by air currents and germinate on the leaf surface. Liquid water on leaves inhibits spore germination. The fungus grows on the leaf surface but sends fine threads (haustoria) into the cells to obtain nutrients. From the time a spore germinates to the time new spores form may require only 48 hr. High humidity favors spore formation while low humidity favors spore dispersal.

Some powdery mildew are inhibited by free moisture on leaves while others are favored by wetness on leaf surfaces.

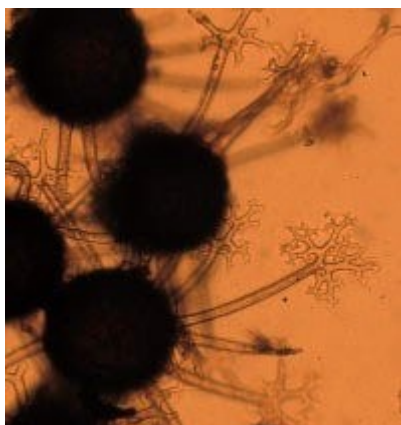
## Managing Powdery Mildew In Greenhouses

- When conditions are favorable for 3-6 consecutive days, heat and ventilate in late afternoon to reduce night humidity.
- Apply a fungicide, biological control, or an anti-transpirant to protect the plants. Be certain the crop is on the label. Contact Penn State Extension for information of what fungicides are available.
- Liquid water inhibits spore germination for most powdery mildews. Therefore, syringing the leaves during the day at times of low humidity greatly inhibits infection and can protect the plant. Only syringe if other leaf diseases are not a problem since other pathogens require liquid water to infect. Syringing may be the best approach at locations where chemical use is not feasible or desirable and on crops for which there are no registered fungicides.

Powdery mildew on most deciduous trees does little damage and does not require fungicides.



Powdery mildew asexual spore formation.



Sexual fruiting structure (cleistothecia).



Begonia.

© 2020 Penn State Extension

---