

# POWDERY MILDEW

Best Practices

## IDENTIFICATION

Powdery mildew is fungus that appears on leaves and stems as white to grayish, talcum powder-like spots that grow larger and denser as the disease progresses. Unlike most fungi, powdery mildew spores do not need water for germination and are most severe in warm, dry climates. Summer's warm days and cool nights create favorable humidity needs for spore growth as do shady areas. The spores are spread by the wind and can overwinter on plants and plant debris. Powdery mildews are host specific (i.e. – the mildew on roses is different from the one affecting grapes) – they cannot survive without the proper host plant. Circumstances influencing the disease's severity include the variety of the host plant, age and condition of the plant, and weather conditions during the growing season.

## DAMAGE

Powdery mildew is usually more unattractive than it is serious, though left unchecked it can reduce vegetable and fruit yields and affect their flavor. Leaves may also turn yellow before dying and falling off. Although plants can be weakened by an infection, they usually do not die.

Some of the vegetable crops affected by powdery mildew include artichoke, beans, beets, carrot, cucumber, eggplant, lettuce, melon, parsnip, peas, peppers, pumpkin, radicchio, radishes, squash, tomatillo, tomatoes, and turnips. The growing tips of fruit trees may also develop the disease. Many ornamentals, such as lilacs, zinnias, and roses can also get infected. Succulent tissue is most susceptible to infection.

## SOLUTIONS - Best Practices

**Identify:** Powdery mildew is one of the easiest diseases to recognize given that its name is self-descriptive.

**Monitor/Establish Threshold:** Inspect plants often to catch infestation early, because once powdery mildew sets in there is little that can be done to eradicate it. If it does manage to get into your garden, pick off and remove the infected parts from your property – do not compost infected plant debris. When powdery mildew is steadfast a spray program may assist in controlling its spread.

**Prevention:** Prevention is the most effective strategy for controlling powdery mildew. Plant in full sun, avoid overcrowding to provide good air flow, and limit nitrogen fertilizer to slow the production of succulent tissue. Water at soil level to avoid wetting foliage which could increase relative humidity. Choose resistant plant varieties whenever possible.

**Control:** A spray of 4 tablespoons of baking soda, 2 tablespoons of vegetable oil, and a few drops of dish-washing detergent added to a gallon of water can be employed as a preventative measure – both upper and lower surfaces of the leaves must be coated. The biological fungicide *Bacillus subtilis* is another least-toxic option. Preventative fungicides include sulfur and potassium bicarbonate. When already infected neem or jojoba oil may help prevent spread. As with any spray introduced to your garden, read and follow application directions. NEVER spray when beneficial insects are present.

## FURTHER RESEARCH

<http://www.organicgardening.com/learn-and-grow/powdery-mildew>  
<http://www.ext.colostate.edu/pubs/garden/02902.html>  
<http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7406.html>  
[http://vegetablemdonline.ppath.cornell.edu/factsheets/Cucurbits\\_PM.htm](http://vegetablemdonline.ppath.cornell.edu/factsheets/Cucurbits_PM.htm)

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