HOME GROUNDS FACT SHEET

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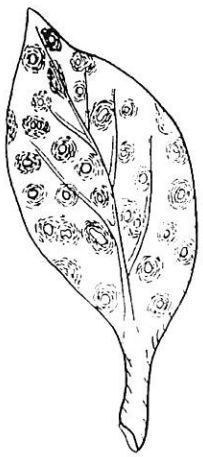
Powdery Mildew

There are many diseases that fall under the general description of powdery mildew. Since most of them have similar habits and similar management practices apply, they will be treated together here. Houseplants that are commonly infected by powdery mildew include African violet and begonia. There are numerous outdoor plants that may be infected in any year, but lilac, phlox, some rose varieties and fruit trees seem to be infected every year. The actual injury to the plant varies greatly with the species and even the variety attacked. For instance, lilacs are typically infected late in the growing season and the plant is usually not seriously injured. Lilacs are able to survive year after year in spite of the disease. On the other hand, begonia is seriously injured by even a mild infection, the tissue under the fungal growth will die soon after infection. This may result in leaf drop and poor plant growth. Thorough management practices must be implemented in this case. There are varieties of roses that are more seriously affected than others. You may choose a variety that will not be seriously injured.



Symptoms

Powdery mildews appear as a dusty white to gray coating over leaf surfaces or other plant parts. In most cases this fungal growth can be partially removed by rubbing the leaves. Powdery mildew can be identified incorrectly as accumulated dust. One way to distinguish the two possibilities is close observation early in symptom development. Powdery mildew will begin as discrete circular, powdery white spots. As these spots expand they will run together, producing a continuous mat of mildew. To the casual observer, this would appear similar to dirt or dust. Microscopic examination by a plant pathologist can distinguish the fungus at either stage if there is some doubt.

Normally, symptoms will appear late in the growing season on outdoor crops. The fungus is favored by high relative humidity periods or site conditions that promote this type of environment, such as close spacing of plants, densely growing plants or shade. Indoors, symptoms may occur at any time of year, but the rate of spread and development will be affected by the relative humidity and temperature.

Injury due to powdery mildews may include stunting and distortion of leaves, buds, growing tips and fruit. The fungus may cause death of invaded tissue. Yellowing of leaves and death of tissue may result in premature leaf drop. Nutrients are removed from the plant by the fungus during infection and may result in a general decline in growth and vigor of the plant. The seriousness of the disease will depend on the extent of the various types of injury.

Disease cycle

The fungi that cause powdery mildew are spread around by spores produced in the white patches. These spores are blown in the wind to other parts of a plant or to other plants many times during the growing season. Generally, each species of fungus is limited in the number of plant species it attacks. For example, the species of fungus infecting lilacs will not cause powdery mildew on apples.

During the winter the fungus is able to survive on infected plant parts and in debris such as fallen leaves. It may produce a resting structure known as a cleistothecium, which can resist harsh winter conditions. It will appear as small black dots within the white powdery patches. The next spring spores within the cleistothecia (ascospores) are shot up into the air and carried by air currents to leaves of plants. This cycle is generally true for outdoor plants but with houseplants the overwintering stage is of little significance. Depending on the environmental conditions indoors, the fungus could continue to grow and spread during the entire year.

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Integrated Pest Management (IPM) Considerations

IPM is a common sense approach to pest control and plant care. It employs a number of measures to prevent, control or reduce plant problems. These include using resistant plant varieties, proper plant selection and placement, good aftercare and biological and/or mechanical controls. As a last resort, after all other remedies have been explored, a pesticide* that is least toxic to people and natural predators, can be considered. Prior to using any pesticides, plants should always be monitored for the degree of infestation and a sensible control measure considered.

* A pesticide is a substance that kills, or attempts to kill, a particular pest, e.g. **insect**icide, **fung**icide, **herb**icide, etc.

Control

For indoor plants, disease management includes reducing relative humidity around plants, improving air circulation and spraying with a fungicide.

For outdoor plants, gather up fallen leaves in autumn and destroy them or put them out with the garbage. Improve air circulation around the plant(s). Where powdery mildew is a problem, resistant varieties should be grown when available. During the growing season, when the first white patches are noticed, begin spraying with a fungicide labeled for control of powdery mildew. Use according to label directions for the particular plant you are treating. Contact your local Cooperative Extension office for specific recommendations. Repeat as indicated on the product label during cool, humid weather. Management for fruit trees may be combined with the normal spray schedule and should begin at the green tip bud stage for apples.