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POWDERY MILDEWS OF ORNAMENTALS

By the PLANT PATHOLOGY BRANCH

Powdery mildews occur on a variety of ornamental plants. As the name suggests, these diseases always appear as a greyish white powdery coating on the leaves. This is easily removed by rubbing or weathering, but beneath it a dark web-like discoloration of the leaf surface often develops. Under some conditions these diseases can be very serious and cause considerable defoliation, stunting and malformation in such plants as Roses, Lagerstroemia (Crepe Myrtle), Hydrangea, Michaelmas Daisy, etc. (see figures 1-5 for symptoms on various ornamentals).

CAUSE

Powdery mildews are caused by fungi belonging to the family Erysiphaceae. Usually one particular species of fungus only attacks closely related plants, so that the organism causing powdery mildew in roses is different from that causing the disease in Crepe Myrtle or Hydrangea. However, all the powdery mildews are encouraged by overcast humid weather.

The disease is most prevalent in spring and autumn but may continue right through the summer, particularly in sheltered, shady garden situations, or where humid conditions are brought about by frequent overhead watering.

CONTROL

1. Spraying.

Powdery mildews are very difficult to control once they have become well established. For this reason, prevention should be aimed at rather than cure, and suitable
sprays or dusts should be applied when symptoms of the disease first develop. Applications at intervals of 7-14 days may be required during susceptible periods to check disease development. The sulphur containing fungicides have proved most satisfactory over the years for controlling this type of disease. Water dispersable powders of colloidal or wettable sulphur, or liquid sulphur are suitable spraying materials and these should be applied at the concentration recommended by the maker. On the other hand, if dusting is desired “flowers of sulphur” may be used. None of the available organic fungicides has proved satisfactory with the exception of Karathane which is about equal to the sulphur compounds for control purposes. Irrespective of whether sprays or dusts are used, it is essential to apply a light uniform coating to the leaf and stem surfaces if good control is to be achieved. When pruning mildew affected roses, it is advisable to remove any diseased wood and the application of a dormant spray of lime sulphur at the rate of one part in twenty parts of water is also beneficial. This material is a useful insecticide as well as a fungicide.

In the case of Lagerstroemia (Crepe Myrtle), the mildew persists from season to season in infected dormant buds. For this reason, control by fungicides is relatively ineffective, unless heavy winter pruning is also practised.

2.—Situation.

Wherever possible, select an open sunny situation for growing plants known to be susceptible to powdery mildew.
3.—Resistant Varieties.

When available, choose varieties which are known to have some resistance, for the more sheltered areas of the garden. Resistant rose varieties include the Hybrid Tea Roses—Karl Herbst (red), Montezuma (salmon red), Anne Letts (pink), Sutter's Gold (apricot yellow), Peace (yellow with pink flush), Grandmère Jennie (similar to Peace) and Spek's Yellow (butter yellow); the Floribundas—Spartan (coral orange) and Queen Elizabeth (pink); and the Grandiflora—Roundelay (dark red).

The mauve Crepe Myrtle is more resistant than either the pink or red varieties.

4.—Garden Hygiene.

Always rake up and burn fallen diseased leaves, prunings, etc., to reduce the sources of infection round the plants.

5.—Watering.

Water in the morning rather than the evening so that the foliage dries off quickly.

PRECAUTIONS

Do not spray with sulphur or Karathane during the heat of the day or under heat wave conditions as burning of the foliage will result. Temperatures above 80° F. can cause burning.
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