



Ask the Green Thumb

If you have questions about your houseplants or garden for world crops specialist Ahmed Bilal, please drop the Advocate a line! Your questions and Ahmed's expert answers will be published in an upcoming issue. Write to:

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Question: How I can identify black spot and Powdery mildew in my roses and how I can control them chemically and biologically?

Answer: Rose growers find that two diseases, black spot and powdery mildew, are fairly common all around the world and in Canada, too.

Black spot

The fungus causing black spot produces black, nearly circular lesions on the upper leaf surface. The lesions are two to 12 mm in diameter with fringed margins. Leaf tissue surrounding the spots turns yellow and, as the infection becomes more severe, the infected leaves fall. Young leaves are most susceptible.

Petioles, peduncles, fruit, sepals and petals may also be infected. Raised, irregularly-shaped, reddish-purple to black blotches develop on the immature wood of first-year canes. Tiny black flecks may form on the leaves of resistant varieties in response to the fungus.

The fungus over winters on fallen leaves and diseased

canes. It tolerates a range of temperatures from 15 to 27°C, but is most able to infect rose leaves at temperatures between 19 and 21°C. Symptoms develop within three to four days at temperatures between 22 and 30°C. Infection can only occur when leaves are wet. During extended periods of cool, wet weather, any cultivar may be seriously infected.

Control

Pick up fallen leaves and prune canes that contain black spot lesions. Allow good air circulation through the leaf canopy, both by spacing plants properly when planting and by pruning to open up the plant. Fungicides may be required for susceptible cultivars.

Begin applications as leaves expand in the spring, spraying at intervals of 10 to 14 days. Fungicides active against black spot are benomyl, thiophanate-methyl, triforine, folpet, ferbam and lime sulphur.

Powdery mildew

Rose types and cultivars vary in susceptibility to powdery mildew. Some climbers are especially susceptible. A white, powdery fungus growth covering the leaves and young shoots is often the first sign of the disease. Unlike black spot and rust, it survives the winter in live leaf buds, not on dead material. Spores are blown from plant to plant. Also unlike black spot and rust, powdery mildew does not require water in order to thrive and is most active during the summer.

The younger leaves tend to curl, exposing the lower surface. If the infection is severe, the growing tip may be killed; infected buds cannot open properly and leaves drop prematurely. The disease can easily be identified by the felt-like white fungus covering the diseased areas.

Young succulent plant tissue is most susceptible to infection. As the rose tissue ages, it becomes more resistant.

Temperature, relative humidity and the presence of free water greatly influence the growth of the fungus. The optimum temperature for growth is 20 to 25°C with high relative humidity of 97 to 99 per cent. The fungus is less able to infect the plant if its leaves are wet. Frequent misting of the foliage prevents infection by powdery mildew but, unfortunately, this provides ideal conditions for the growth of black spot.

Control

Powdery mildew can be controlled by cultivar selection and sanitation. Since the fungus over winters on infected canes, in buds or on old leaves, it is important to prune infected plant parts and remove leaves before new growth starts in the spring. If you plant susceptible varieties, ensure the location is sunny with good air circulation. Pruning rose canes to ensure good air circulation may also help.

Fungicides may be required for susceptible varieties. Fungicides active against powdery mildew include folpet, lime sulphur, sulphur, triforine, thiophanate-methyl and benomyl. These chemicals are contained in a number of home garden pesticide products.

Biological control of black spot and powdery mildew

For biological control Potassium bicarbonate is a chemical relative of baking soda and is used in antacid over-the-counter medications. It controls powdery mildew and black spot on roses. It is sold under several names including: Bi-Carb Old Fashioned Fungicide, Kaligreen, and Bonide Remedy.

Bacillus subtilis is a microbial pesticide. It is a bacterium that is commonly found in soil, air, and water. According to the product label, it is effective in controlling all important rose diseases.

Neem oil also plays a very important role in controlling black spot in roses.

Lunch meeting

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