

The Plant Doctor

Blackspot and Powdery Mildew of Rose

Most plants require timely watering, fertilization, and pruning. Many roses require not only timely cultivation, but good health care as well. You are the doctor for your rose garden. As the doctor, you must understand the types of diseases that can harm them.

Periods of heavy dew, rainy weather, and high humidity all favor development of the major rose diseases: blackspot, powdery mildew, dieback and stem canker. Our climate means we will almost always have these diseases in the South, so you must keep ahead of them by using preventative techniques.

Blackspot is the most destructive and common disease of roses. As the name implies, the most prominent symptom of this disease is black spots on either side of the leaf. While other leaf spots cause similar symptoms, you can distinguish blackspot by the coal-black color and fringed border of the spots.

Leaves are most susceptible to infection when young but can be invaded at any stage if there are periods of numerous showers. Symptoms of blackspot begin on leaves as small, pinhead-sized, circular black or dark brown spots. Sometimes along with the black spots you'll see chlorosis, or yellowing of the green part of the leaf. As the black spots enlarge, the leaf often yellows around them.

Blackspot causes premature leaf drop and, left unchecked, may defoliate the plant. Continued attack results in unattractive plant foliage as well as reduced size, number, and quality of blooms. Successive seasons of defoliation may weaken the plant and increase susceptibility to other disorders.

Blackspot is most troublesome following rainfall and periods of high humidity, which generally accompany spring and summer in the South. Moisture on leaves is necessary for infection to take place. Therefore, you will need to be more vigilant in preventing the disease during rainy weather. Proper plant spacing and pruning that encourages good air circulation and leaf drying are the first lines of defense.

If you must water roses from overhead, do so early in the morning so the foliage dries by the time dew evaporates. This cultural procedure is very important to reducing foliage infection.

The first blackspot lesions of the season usually occur on the lower leaves and move upward as the season progresses. This is because the fungus overwinters in fallen leaves and canes. Spring rains dislodge last season's spores from the litter and splash them upward to the lower leaves. Spores formed on the lower leaves are splashed upwards to higher leaves.

After proper watering, spacing, and pruning to encourage air circulation, the second line of defense is sanitation. If only a few leaves show symptoms of blackspot, remove and burn them. Remove all diseased leaves from around the plants, particularly at the end of the growing season. In beds where blackspot was a problem last season, you may wish to remove and replace the old mulch. This is best done before new growth begins in the spring.

The third line of defense is a regular, thorough coating of the leaves with something that inhibits fungal growth – a fungicide. It's important to realize that fungicides protect plants from infection, and once the blackspot fungus has invaded



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Some Systemic Fungicides

| Common Chemical Name (active ingredient) | Trade Name |
|---|---|
| propiconazole | Fertilome Systemic Fungicide; Ortho Lawn Disease Control |
| triadimefon | Green Light Fung-Away Systemic Fungicide |
| tebuconazole | Bayer Advanced Garden Disease Control for Roses, Flowers & Shrubs Concentrate; Bayer Advanced All-in-One Rose & Flower Care |
| thiophanate-methyl | Fertilome Halt Systemic Rose Flower, Lawn, Ornamentals Fungicide; Green Light Systemic Fungicide Disease Control Spray |
| triforine | Ortho Rose Pride Rose and Shrub Disease Control |

foliage, fungicide applications will only prevent further spread. They will not cure an infection. For this reason, keep your plants covered with a fungicide at all times during the growing season.

A regular fungicide spray program throughout the growing season is generally necessary to control blackspot. Dust formulations of rose fungicides generally don't provide the same level of control as liquids. Most liquids will perform better when you add a small amount of spreader-sticker material to the spray solution, and all can be applied with a hand sprayer.

It is best to alternate a systemic fungicide with one of the protectant fungicides to prevent the buildup of resistant strains of the fungus. Propiconazole, tebuconazole, thiophanate-methyl, triadimefon and triforine fungicides are systemic. This means the fungicide moves into the plant. Protectants include sulfur, chlorothalonil-containing fungicides, maneb copper based compounds, and Funginex, as well as others. Protectants coat the outside of the plant, killing the fungal spores that land on it. Refer to individual product labels for instructions on dilution rates, timing, and other application instructions. See tables for more specifics.

A fungicide program should be tailored to the needs of specific cultivars and to the garden's micro-climate. A program for relatively susceptible hybrid tea rose gardens might start with chlorothalonil/maneb/mancozeb followed about 7 days later with an 'azole' type of fungicide, such as propiconazole, tebuconazole, triadimefon, or myclobutanil or triforine fungicide; followed 10 days later by thiophanate-methyl; followed in 7 to 10 days by chlorothalonil/maneb/mancozeb. Rotating fungicide

chemistries in this way helps prevent the pathogen from developing resistance. You can apply the chlorothalonil/maneb/mancozeb fungicides anytime without worrying about resistance. They may even mix them with the others to offer additional protection.

A fungicide developed by a Cornell researcher has given good control of powdery mildew and of blackspot on roses, which tend to be more tolerant of blackspot. It is made by adding 1 tablespoon of baking soda and 1 tablespoon of oil (a light horticultural oil or sunflower oil) to one gallon of water. You may add insecticidal soap if you wish. Shake well before and during application, or the additives will separate. If the threat of disease is high, as in moist, humid weather, you will need to spray every 5 to 7 days.

Before using any fungicide, it is a good idea to test spray a small area of the rosebush several days before spraying the entire plant. Examine the sprayed areas for signs of burn or distortion. If you see abnormal symptoms, do not spray with that solution.

Powdery mildew is a common disease of roses in Mississippi in the spring and fall. Look for white to gray-white patches of powdery fungus growth on young leaves, shoots, buds, and flowers. Often leaves become distorted, dwarfed, and may turn reddish or purple under the powdery areas.

Fortunately, the same practices you use for blackspot management are effective for powdery mildew: plant spacing and pruning to encourage good air circulation, watering in ways that keep leaf surfaces dry as much as possible, sanitizing, and using protectant fungicides.

By paying attention to air circulation, leaf wetness, sanitation, and protective sprays, you should be able to help prevent your garden roses from getting infections of blackspot and powdery mildew, which plague roses everywhere.

Protectant Fungicides

| Common Chemical Name (active ingredient) | Trade Name |
|---|--|
| Chlorothalonil | Ortho Garden Disease Control; Fertilome Broad Spectrum Liquid Fungicide: High Yield Daconil Fungicide; |
| Mancozeb | Green Light Broad Spectrum Mancozeb Fungicide Disease Control Spray |
| Maneb | Hi Yield Maneb Garden Fungicide |
| Copper | Fertilome Black Spot and Powdery Mildew Control |



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The information given here is for educational purposes only. References to commercial products or trade names are made with the understanding that no discrimination is intended against other products that may also be suitable.

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