

# Black Spot of Rose

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## Introduction

Black spot is caused by a fungus (*Diplocarpon rosae*) and is the most important disease of roses in Arkansas. Each year, rose growers need to take steps to battle this serious disease that affects most rose varieties. Hybrid tea roses are the hardest hit although the fungus may infect all types.

The optimum weather conditions for disease development are 75°-85°F with high relative humidity or rainy periods. When leaves remain wet for six or more hours, the fungus infects them. Canes can also be infected. Black spot is less of a problem under greenhouse conditions since relative humidity and temperature can be controlled.

## Symptoms

Leaf spots are the most characteristic symptoms. The black spots are round with feathered edges and are up to 1/2 inch across (Figures 1 and 2). Spots are mostly on the upper surface of the leaf and often have a yellow halo around them. When many spots are present on the leaves, they cause the leaves to turn yellow and

fall off. Lower leaves usually become infected first. Excessive leaf drop from this disease weakens the plant, resulting in other problems. New spots can appear in as little as five days when conditions are favorable for infection.

Cane symptoms of black spot are less obvious. Small, purple,



Figure 1



Figure 2

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blister-like blotches appear on the canes. These blotches become black with age. Cane infections are very important in the survival of the fungus during the winter and are sources of infection in the spring as temperatures warm and rainfall increases.

Periods of rainfall or any other source of overhead water that wets the leaves can lead to a flare-up of black spot. During wet periods, the fungus produces thousands of microscopic spores on infected leaves and canes, which can be carried to fresh leaves by wind or splashing water. Since the fungus can withstand a wide range of temperatures, infections may continue throughout the season as long as moisture is present on the plant.

## Control

Planting resistant varieties is the most effective way to prevent black spot. Some of these varieties may develop a low level of black spot but will require less maintenance than those that are susceptible. A list of resistant varieties can be found at <http://www.chattanooga.rose.org/roseresistscreening20101.pdf>. The degree of susceptibility may depend somewhat on local environmental conditions.

Since the fungus can survive and continue to produce spores on fallen leaves and dying canes, good sanitation is an integral part of an effective control

program. Dying or dead canes and fallen leaves should be removed and disposed of **before** new growth begins in the spring. If feasible, spotted leaves remaining on the plant should also be removed since these can also be a source of infection.

Overhead irrigation that prolongs leaf wetness should be avoided if possible, since moisture is a significant factor for infection. If plants are irrigated overhead, watering should be done in the early morning hours to minimize leaf wetness periods. Use of drip tubes or soaker hoses is preferred. Always select a sunny location, well-drained soils and areas where there is good air movement to minimize leaf wetness.

For those growers who have to deal with the disease on a regular basis, fungicide applications will be required in combination with good sanitation. Homeowner fungicides labeled for black spot include Spectracide Immunox, Fertilome Liquid Systemic Fungicide, Ortho Funginex and Greenlight Fung-Away. For specific information, consult Extension publication MP154, *Arkansas Plant Disease Control Products Guide*, or contact your local county Extension office.