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G91-1060 Black Spot of Roses

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G91-1060-A

NebGuide

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Black Spot of Roses

Black spot, Nebraska's most troublesome rose disease, can be controlled through selection of a resistant cultivar, spaced plantings, and an active fungicide spray program.

John E. Watkins, Extension Plant Pathologist

Roses are one of the most versatile and inspiring ornamentals for landscaping. There are roses adapted for any garden site and landscape purpose. Roses are not always easy to grow and may require a little more management than other ornamentals. One of the greatest challenges to successfully growing garden roses is disease control.

Cause and Distribution of Black Spot

Black spot, caused by the fungus *Diplocarpon rosae* Wolf, is the most important disease of roses worldwide. It was first recorded in the United States in 1830 and is now found throughout North America. It is by far the most troublesome disease of garden roses in Nebraska, and if not properly controlled, will severely weaken plants. This can result in increased susceptibility to winter injury or dieback due to other causes.

Infection by D. rosae occurs directly through the cuticle on both sides of the leaf. The fungus tolerates a wide range of temperatures, but needs high relative humidity for leaf infection to occur. It does not require free moisture to infect, but infection is greater on leaves that remain wet for six or more hours.

Symptoms

Figure 1.(133K) Black spots with feathery margins characteristic of black spot.

Leaf spots are nearly circular and black, with margins that are fringed or feathery (*Figure 1*). The dark color and feathery appearance easily distinguishes black spot from other leaf diseases of roses. Spots may vary in size. They sometimes coalesce, but more often remain as distinct spots. Leaf tissue surrounding the spots turns yellow and drops from the plant (*Figure 2*). Lower leaves are usually the first to become infected followed by middle and upper leaves. Excessive leaf drop reduces stem length and size, as well as number and quality of leaves and blossoms. It also

weakens plants and increases the risk of injury from cold winter temperatures. In resistant cultivars, or during dry weather, only small spots may form without yellowing and defoliation.

Symptoms, in the form of raised purple blotches, form on immature wood of first-year canes; these later become blackened and blistered. Lesions on canes rarely kill branches, but are very important to the pathogen's survival over the winter. Infection of petioles, stipules, peduncles, fruit and sepals may result in inconspicuous, reddish-purple spots.

Figure 2. (137K) Yellowing of leaves due to severe black spot.

Conditions Favoring Black Spot

Optimum conditions for infection and disease development are 75 F to 85 F, relative humidity above 85 percent, and six or more hours of leaf wetness. Leaves are most vulnerable to infection while still expanding. The black spot fungus survives on the host throughout the year as mycelia, in fallen leaves or in infected canes. During the growing season, spores produced on leaves and young canes are dispersed in rain water or dew and are disseminated primarily by splashing water. Infected fallen leaves blown by wind disperse the black spot fungus locally within the garden.

Plant architecture influences disease development. Roses that have a more compact form or that develop leaves near the ground are more subject to infection. Crowded plantings generally have higher humidity within the canopy which promotes disease development.

Prescription for Healthy Roses

Effective black spot control depends on an integrated approach that uses timely application of appropriate fungicides and the implementation of good horticultural practices. These are designed to prevent severe infection, which can defoliate plants by mid-season.

Control starts with growing cultivars resistant to black spot. Most garden catalogs will identify cultivars resistant to black spot and other rose diseases. For the home gardener who wants to grow a few roses in the landscape, but does not want to be burdened with a fungicide spray program, black spot resistant roses offer a suitable solution. For those dedicated enough to follow a weekly fungicide spray program, black spot susceptible cultivars offer a challenge. Fungicide sprays should be used when conditions favor black spot, which in Nebraska is from mid-May to mid-September. Successful control requires weekly application to protect the newly emerging foliage. Apply fungicide sprays in the evening when there is less wind and temperatures are cooler. Cover both sides of the leaf when spraying.

Several fungicides (Table I) can be used to control black spot. It is a good idea to use a different fungicide each season or alternate between fungicides during the growing season. Anyone using a fungicide should first carefully read the label and apply as instructed.

Table I. Fungicides* for control of black spot of roses.

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Captan
Chlorothalonil, Daconil 2787
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Funginex, Triforine
Mancozeb, Fore, Dithane M-45,
     Dithane F-45, Dithane DF,
     Manzate 200 DF
Maneb
Sulfur
Ziram
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*Not all of these products are available for use by home gardeners.

References to fungicide products in this NebGuide are for the reader's convenience. The University of Nebraska neither endorses products listed nor discriminates against products omitted, nor does the University of Nebraska guarantee effectiveness of those products listed. Consult the product label before purchase to make certain it is registered for use on roses.

Additional important control measures include selecting a sunny location for the rose garden and properly spacing plants to promote quick foliage drying. Water plants with a drip system rather than a sprinkler. If the roses are syringed, do this in the morning not the evening. In the fall, remove fallen leaves from around the plant and prune any obviously infected canes. Apply a 3-inch layer of mulch around the dripline of the plant to reduce splashing of spores from fallen leaves.

Roses can be grown without serious disease injury if the gardener is committed to promoting plant health.

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