

Invaders in the Garden – Part III – Black Spot

By: Bruce Watt, PhD – Plant Diagnostician -University of Maine Cooperative Extension

Introduction:

Black Spot is one of the most common and important diseases of roses throughout the world. It is caused by the fungus *Diplocarpon rosae*. Black spot will cause a general weakening of the plant so that progressively fewer and fewer blooms are formed if the disease is left unchecked. Plants so weakened are increasingly subject to winter injury.

Symptoms:

As the name implies, infected leaves show black spots especially on the upper leaf surface. The spots can be up to 1/2 inch in diameter and typically have fringed borders. Yellowing of the leaf begins surrounding the spots and the entire leaf may yellow and eventually drop off. Close inspection of the spots will reveal the presence of tiny black spore producing bodies. The fungus may also infect the canes where lesions appear purple at first and later black.

Environmental Conditions:

As is true with most fungi, this fungus requires free water for infection to occur. The spores must be wet for at least 7 hours before they can germinate. A temperature of 65 degrees F is best for spore germination and the disease develops most rapidly at about 75 degrees F. Temperatures at 85 degrees F and above inhibit the spread of the disease.

Survival and Dispersal:

The spore producing structures (acervuli) form within two weeks of the initial infection. These structures release spores which are blown or splashed or otherwise carried to new tissues initiating new infections. The fungus survives the winter in fallen leaves and at infection sites on the canes. Spores will not survive in the soil and individual spores do not survive longer than one month.

Management:

1) Rake and discard all fallen leaves because they are the main source of spores in the spring. 2) Also prune and discard any obviously infected canes. 3) Avoid wetting the foliage especially during dark cloudy days. 4) Grow plants in an open sunny location to promote rapid drying of the foliage. 5) Do not plant in dense plantings and avoid windbreaks to allow good air circulation. 6) Roses vary in their resistance to this disease. Use resistant varieties for low maintenance plantings. 7) Removal of infected leaves as they arise early in the season may help retard the rate of disease spread. 8) Several fungicides are registered for control of Black Spot. Because of the waxy nature of rose leaves, a spreader added to the spray will give better coverage.

Chemical Fungicide and their Trade Names:

trifloxystrobin – “Compass” – spray every 7 to 14 days at first sight

chlorothalonil – “Daconil”; “Bravo”; “Echo”; “Fungonil” and others – every 7 to 14 days

myclobutanil – “Eagle” – every 7 to 10 days

maneb – “Maneb”- every 7 to 10 days

mancozeb – “Mancozeb”; “Stature”; “Dithane M45”; and others – every 7 to 10 days

Thiophanate-methyl – “Fungo-Flo”; “Quali-Pro TM”; “Systec”; “Cleary’s 3336” – 10 to 14 days

Ziram – “Ziram” – 7 to 10 days

captan – “Captan” – 7 to 10 days

Triforine – “Funginex” – 7 to 10 days

Propiconazole – “Banner Maxx” – 14 to 21 days

Organic Fungicides and their Trade Names:

copper products – “Kocide”; “Tenn-Cop”; “Basicop”; and others – Cover critical every 5 to 7 days

Lime sulphur – “Lime Sulphur” – Apply when dormant

Neem Oil – “70% Neem Oil” – Preventative 7 to 14 day schedule

Potassium bicarbonate – “Remedy Fungicide”; “Armcarb 100” – 10 to 14 day intervals

sulphur – “Sulphur Dust”; “Wettable Sulphur” and others – Coverage is critical. 5 to 10 day schedule

Hydrogen dioxide – Commercial only – see label – “ZeroTol”