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Diseases of Roses

Paul C. Pecknold, Extension Plant Pathologist

Three major diseases of roses are blackspot, powdery mildew, and crown gall. Stem cankers, virus disorders and nematode injury are also common to many rose gardens. However, blackspot, mildew and crown gall cause the greatest concern to Indiana rose growers.

BLACKSPOT
Blackspot (Diplocarpon rosae) is the most common and damaging disease of roses in Indiana. As the name suggests, black, circular spots form on leaves during spring and summer. Infected leaves eventually yellow and drop prematurely. Severe infection may cause some canes to become completely defoliated, thereby making them more prone to winter injury.

The fungus that causes blackspot thrives under wet conditions. Therefore, infection occurs primarily during spring (May and June); it is this period when fungicide sprays are most needed to prevent blackspot.

Control
Control of blackspot is helped by following good sanitation procedures throughout the year, e.g., rake and destroy infected leaves. It is also helpful to maintain plants so they have an open center. This allows good air circulation and rapid drying of foliage. If plants have excessively dense growth and are planted too closely, air circulation is impeded and blackspot may be more severe. Applications of a fungicide spray is a must for susceptible roses. Refer to Table 1 for recommended fungicides.

POWDERY MILDEW
Powdery mildew (Sphaerotheca pannosa) ranks second to blackspot in terms of occurrence and injury caused. The mildew fungus grows over the upper leaf surface and is easily recognized from the white, powdery patches formed. Severely infected leaves become brittle and wither and die. Infected stem tissue has a withered, spindly appearance and may also be coated with the white, powdery growth of the fungus.

Unlike blackspot, powdery mildew does not require wet conditions for infection to occur. Mildew does best when the temperature is cool and relative humidity is high. Often mildew is a mid- to late-season problem, not becoming apparent until July or August. However, be on the lookout for mildew throughout the growing season.

Control
Powdery mildew is most severe in heavily-shaded areas. Avoid such locations when planting roses or other plants susceptible to mildew, e.g., lilac, zinnia, dahlias. Follow suggestions as outlined under control of blackspot which provide for good air...
circulation. Fungicides must be applied regularly to highly susceptible roses. See Table 1 for recommended fungicides.

CROWN GALL

Unlike blackspot and powdery mildew, crown gall (Agrobacterium tumefaciens) is a soil-borne bacterial disease which infects root and/or stem tissue rather than leaves. Galls are most frequently seen as round, rough-surfaced growths near the plant's crown or on roots. These "crown" galls will eventually girdle the plant, resulting in poor growth and plant death.

Control

Crown gall is a difficult disease to control once a plant is infected. It is best to rogue diseased plants as soon as they are detected. Do not replant in the same area from which a diseased plant was removed unless you first discard all soil in which the root system of the infected plant was growing and replace it with sterilized soil. If crown gall is a recurring problem in an area of your yard, it is best to treat the soil with an all-purpose fumigant and rotate the area with a nonsusceptible crop, such as onion, corn, grasses, and other cereals, for 3 or 4 years.

Where a gall is restricted to stem tissue only, cut off the entire cane and immediately seal the cut surface with pruning paint. Always sterilize cutting tools both before and after each cut is made on crown gall infected tissue. One part household bleach (Clorox) diluted with 9 parts water is a good disinfectant for pruning shears. Oil pruning shears after you finish with all pruning.

To prevent crown gall, inspect all new rose plants, BEFORE PURCHASE, for signs of swelling near the bud union or on roots. During and after planting take special care to avoid any and all wounds, especially near the soil line. Provide good winter protection to prevent bark cracking or other cold injury to bud union area. NEVER use crown gall-infested soil to mound over bud union for winter protection.

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**Table 1. Fungicides for control of Blackspot and Powdery Mildew**

<table>
<thead>
<tr>
<th>Common name</th>
<th>Trade name</th>
<th>Disease Control</th>
<th>Rate per 1 gal. water</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. triforine</td>
<td>Orto Funginex</td>
<td>1 Tbsp.</td>
<td>1 Tbsp.</td>
</tr>
<tr>
<td>2. benomyl</td>
<td>Benlate 80W</td>
<td>1 Tbsp.</td>
<td>1 Tbsp.</td>
</tr>
<tr>
<td>3. chlorothalonil</td>
<td>Uaconil 2/8L Flowable</td>
<td>1/2 Tbsp.</td>
<td>1 Tbsp.</td>
</tr>
<tr>
<td>4. chlorothalonil</td>
<td>Uaconil 2/87 - 75 Wettable powder</td>
<td>1 Tbsp.</td>
<td>1 Tbsp.</td>
</tr>
<tr>
<td>5. folpet</td>
<td>Phalan 75 Wettable powder</td>
<td>1 Tbsp.</td>
<td>1 Tbsp.</td>
</tr>
</tbody>
</table>

1 Use only one of recommended fungicides. Begin application of a single fungicide at the first sign of blackspot and/or powdery mildew.

Continue to spray at intervals recommended on label directions, generally every 7 to 14 days.

2 Add a spreader-sticker to spray mix to help improve coverage.

3 Do not apply during periods of excessively high temperatures (above 95°F).

NOTE: Triforine or benomyl are recommended for rose cultivars highly susceptible to powdery mildew.