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**PRIOR TO SPRAYING WITH INSECTICIDE OR FUNGICIDE WATER ROSES WELL SO PHOTOTOXICITY WILL NOT OCCUR ON THE FOLIAGE.**  
For best control on any kind of fungus, alternate your sprays so the disease will not build up a resistance.

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## **ROSE DISEASES AND CONTROL RECOMMENDATIONS**

1. **BLACK SPOT** - This fungus is identified by the irregular black spots with margins of yellow around the spot. In the yellow margins there will be fingers of black reaching into the yellow. Leaves will turn bright yellow with black areas in them. Complete leaf drop can result and loss of vigorous growth can occur if this is not prevented. Prevention and control be obtained by the use of the following fungicides: Dithane M-45; Daconil; Liquid Copper; Thiomyl; or Garden Safe-RTU Insecticide, Miticide & Fungicide. Note: A combination of insect and fungus control may be achieved by using the Organocide Insect and Disease Control. It is important that the manufacturer's recommendation be followed in mixing any spray materials and that the spray material be applied thoroughly on the underside and top of the leaves, wetting the surface **ONE TIME ONLY**. Also spray the ground to prevent fungus spore reproduction.

2. **DOWNY MILDEW** - This is a fungus that has reappeared in the 1991-1993. The last outbreak was in the '70s and fungus can stay "dormant" until the weather condition is conducive to its activation.

### **WEATHER and/or ENVIRONMENTAL CONDITIONS FOR AN OUTBREAK.**

- 1) Cool nights - temperature of 40 to 60 degrees F.
- 2) Warm days- temperatures about 70+ during daytime.
- 3) High humidity - 85% or more (Foggy days).
- 4) Light to moderate Dew on leaves.

NOTE: This fungus becomes less active and/or dormant if these conditions do not all exist.

Plants are usually in a beginning flush of new growth after being pruned back. At first the new growth will have irregular size or shaped purple black lesions on stems and leaves which will move down to the older stems. These will dry and drop off and cause dieback to occur on main stems.

**PREVENTION MEASURE** - We have become accustomed to the newer material to spray for fungus, but one the best controls is an old recommendation, the use of a "Dormant Spray", a combination of "Lime-Sulfur" and "Oil Spray" which is extremely excellent in preventing **DOWNY MILDEW**. This should be applied before cutting back in January or February. Begin a spray treatment program before the disease is evident. More states have been able to obtain labeling for chemicals effective against Downy Mildew on roses; such as: Dithane M-45 and Liquid Copper

3. **POWDERY MILDEW** - Recognized by its "whitish", irregular blotches on leaves, twigs, and flower buds, causing a rolling or distortion of the leaf edge. It is white and chalky in appearance. This fungus causes distortion of buds and stems. For prevention and control, the following materials may be used: Daconil, Liquid Copper, Thiomyl or Organocide (fish oil).

4. **DIEBACK** - This has the appearance of the cane of the rose turning black and dying back to a bud stem for no apparent reason. Control can be obtained by removing dead stem to good firm, green wood. Check clippers - they should be a by-pass pruner to make a clean cut not a tear. After each cut: dip or wipe the blades of the clippers in a sterilizing solution (2 Tablespoons of Bleach to 1 gallon of water or wipe blades with alcohol). The cut stem should be painted with pruning paint, orange shellac or white glue (Elmer's Glue). Spraying plants with a Liquid Copper solution as label reads will also help to suppress dieback.