

### **APHIDS**

Aphids are the most common of the insects that affect roses. They are very tiny, less than 1/16 inch long. They can be green, brown, black or reddish brown. They are more common in the spring, but can appear any time of the year. They suck the juice from the underside of leaves, on new growth and on the new buds. They leave behind a shiny, sticky residue. To get rid of them, try a strong spray of water every morning for a couple of weeks. If this doesn't work, you might have to use a pesticide like Orthene or Malathion.

### **THRIPS**

This is one of the most irritating rose pests. This tiny chewing insect is 1/16 inch long with a diameter about the size of a hair and is tan in color. They have two pairs of wings. There are several species and they are all alike in their habits and the damage that they do.

Thrips can generally be found infesting the light-colored roses, whites, yellows and light pink. The female drills a small hole into the bud at the sepals and lays her eggs in the developing petals. The egg hatches in a few days as the bloom matures providing the larva juices to grow. The larva enters into a second pupal stage which goes down the stem into the soil where it again hatches. Both larva stages as well as the adult feed on its host. The entire development stages cover about 11 days and the adult may live 15 days though the process speeds up during warmer weather.

Thrips cause the flower petals to be deformed, often preventing the bloom from opening. The petals appear to be brownish around the edges. Thrips can be controlled by spraying the buds with Orthene, Cygon 2E, Malathion, or any good systemic spray such as Merit. Merit is applied in February, July and September. In addition to roses, thrips like daisies, gladiolus, chrysanthemums, and ornamentals.

### **SPIDER MITES**

Watch the lower leaves for spider mites. Spider mites are relatives of the spider family. They look and feel like grains of sand. The underside of the leaf will feel like sandpaper. They are light red in color. The lower leaves will be lighter and have a fuzzy appearance. The spider mites suck the juice from the underside of the leaf. To control them, remove the damaged foliage and clean up all debris around the rose bush, then use a strong spray of water every other day. Be sure to spray the underside of the leaf. If this does not control them, then you will have to use a miticide. There are several effective sprays on the market. Some miticides do not kill the eggs, so it will be necessary to spray again. Kelthane, Vendex, Avid, and Pentac are very effective miticides. Remember to read and follow the directions on the container.

### **CANE BORERS**

These are tiny insects that normally appear in the spring. They lay eggs in a small hole made in the tip of a pruned rose cane. The larvae tunnel down the pith and hibernate until next season, at which time they emerge to start the cycle all over again. The damage is easily spotted, they leave a large hole in the center of the cane and it can go all the way to the bud union. The infected cane should be cut below the nest to prevent further damage. You can prevent cane borers by sealing all cuts with a water proof glue, such as Elmer's wood glue.

## WHITEFLIES

Whiteflies are pale yellow in color. They suck the juice from the underside of the leaves. They appear in late summer. They are hard to control. A strong spray of water every day will help. You can also spray them with a solution of one teaspoon of dishwashing detergent in 1 gallon of water every three days. Remember to spray the underside of the leaf. Merit also seems to control whiteflies.

## LEAF-CUTTER BEE'S

Leaf-cutter Bees are the cause of the perfect circles that are cut out of your rose leaves. The bees use the leaves to build their nests. They usually choose more than one bush, most of the time, it's the entire rose garden. They do not cause any harm to the bush, other than cut holes in the leaves. The Leaf-cutter Bee is seldom seen and there is nothing you can do to prevent them from cutting out those perfect little circles.

## POWDERY MILDEW

Powdery mildew occurs when we have warm days and cool nights. It is a fungus and the spores germinate quickly. It appears as a white powdery mildew. It attacks new growth and will affect canes, leaves and buds. The leaves will appear twisted, distorted and wrinkled. Buds, sepals, peduncles and petals can be infected. The buds will not open. It will easily spread to other bushes in your garden. A good spraying program will prevent powdery mildew. As soon as you finish pruning, start a weekly spraying program. There are several fungicides on the market. Funginex, Rubigan, Immunox and Rally. Be sure to read and follow directions on the packages carefully. You can also try dusting with sulfur. Use 2 1/2 tablespoons in 1 gallon of water and spray every week. **DO NOT USE WHEN TEMPERATURES ARE MORE THAN 90 DEGREES.**

## NUTRIENT DEFICIENCIES

*Iron deficiency* is the most common. The leaves will be pale green or yellow with dark green veins. Add chelated iron (FE 138) according to package directions.

*Nitrogen deficiency* is characterized by yellowing of the leaf, reduced growth, weak and spindly stems. Usually a good fertilizer will solve the problem.

*Potassium deficiency* will cause the older leaves to turn yellow and then brown, sometimes purple. New shoots will harden and be stunted, and flower buds may become distorted.

*Phosphorus deficiency* will cause older leaves to drop without turning yellow, leaves appear dull grey-green and may cup down.

*Magnesium deficiency* will result in yellow or purple discoloration. Veins remain green, and leaves will fall prematurely from the lower part of the bush. Add epsom salts or fish meal.

*Manganese deficiency* is similar to iron chlorosis in that there is interveinal chlorosis. The small veins remain green with a netted appearance. Apply a good rose fertilizer.

*Zinc deficiency* causes new growth to stop and also causes distorted chlorotic leaves.

These problems can all be corrected with a good rose fertilizer. Maintaining a good soil pH of 6.0 to 6.5 is ideal for growing good roses.

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