

# DIAGNOSING PROBLEMS OF ROSES IN THE LANDSCAPE

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Desert Southwest gardeners are fortunate to have fewer insect and disease problems on roses than most rose growers in other parts of the country. Some advanced knowledge about potential problems will help you recognize and manage problems before they get out of control. Prevention and early intervention are the key to healthy plants.

## Insect Problems

### Cane Borers

The first problem that might crop up in January is the cane borer, an insect that tunnels into the cane soon after roses are pruned in winter. Cane borers can be stopped by sealing all newly cut canes with white wood glue or other commercial preparations available. Their presence can be detected by a hole in the end of the cane (Fig. 1). Cut the cane back an inch or two at a time until the hole is no longer visible. Seal the cane with the wood glue.

### Aphids

When tender new growth appears on roses in February, aphids are not far behind. The rose aphid is a soft-bodied pink or light green insect that sucks the sap out of new growth and buds (Fig. 2). Aphids are best controlled with a forceful spray of water from the hose. A second line of defense is to use a soapy water spray (mix one tablespoon of dish detergent per gallon of water). Do not use a citrus based soap or scented detergents and always spray one or two leaves and check their reaction before you spray the entire plant. Spraying with water or soapy water can be repeated daily, if necessary, to control aphid populations. If you monitor the rose bushes regularly and take action as soon as aphids start appearing, it should not be necessary to use a chemical insecticide. Beneficial insects such as lady beetles and green lacewings will soon appear to feast on the aphids.

### Thrips

As the flower buds start to form on roses, look for thrips. Thrips are slender, brownish-yellow winged insects, barely visible to the naked eye. They hide inside newly opened buds and munch on the flower petal edges, causing them to turn brown (Fig. 3). The damage is cosmetic and won't harm the bush. Some gardeners don't experience problems from thrips and report thrips are eaten by the same beneficial insects that consume aphids. Gardeners trying to cultivate the perfect blooms for competition may choose to use a chemical control for thrips,



Fig. 1. Tunneling caused by rose cane borer



Fig. 2. Rosebud covered with aphids



Fig. 3. Thrips damage and a thrips (insert)

spraying the buds before opening (use an insecticide labeled for thrips on roses). Spray only the unopened bud, not the entire bush. Otherwise, you may destroy beneficial insects that will consume these pests.

### Spider Mites

When the weather becomes hot and dry (May through September), be on the lookout for spider mites. The lower leaves will become fuzzy yellow with red specks (mites), with webbing on the underside of the foliage. Shake the leaves over a white sheet of paper, look closely, and the mites can be seen scurrying around. Spider mites can be controlled by washing off the plants with a strong stream of plain or soapy water every two or three days. Soapy water may be more effective. There are miticides available that are labeled for roses.

### Leaf Cutter Bees

Circular or half-moon-shaped leaf cuts are caused by leaf cutter bees (Fig. 4). This is only aesthetic damage and is not detrimental except for roses that will be entered in competitions. Many gardeners see the hole left by a leaf cutter bee as a badge of honor, a testament to the health of their garden. Since the cutter bees use the leaves to make a nest and do not ingest the plant tissue, it is impossible and unnecessary to control them with chemicals. Try covering show roses with floating row cover or cheese cloth to keep cutter bees at bay.

## Disease Problems

### Powdery Mildew

Powdery mildew will show itself about the same time as the aphids appear. It is a seasonal problem that thrives with cool, damp nights, warm daytime temperatures in the 70's degrees F. or above, moderate to high humidity, and poor air circulation. Powdery mildew may first appear as small blisters on the upper surface of leaves, followed by white or gray powdery spots. The spots merge and eventually cover the entire leaf surface (Fig. 5). Leaves may become twisted and distorted. Powdery mildew can attack stems, leaves, petals and buds. The growing tips and buds may die if the condition is severe, but it seldom results in the plant's death.

The incidence of powdery mildew can be lessened considerably by simply using good gardening practices. When planting, provide sufficient space among bushes to allow air circulation and sunlight. Always clean up old leaves from the roses after pruning and discard them. Periodically wash down the leaves of the roses with water from the hose.

Sulfur or fungicides can be applied to the foliage as a preventative or to treat powdery mildew. To avoid burning the foliage, do not use sulfur when the temperatures exceed 90 degrees F.

Rosarians who exhibit in shows usually begin their management program before powdery mildew appears because it is difficult, if not impossible, to eradicate once it becomes established. They spray with a fungicide immediately after pruning in January or February. Fungicides work better as a preventive measure early in the season before the mildew takes hold. As with any product, follow the instructions exactly. It is also a good idea to test a few leaves first before spraying the entire plant.

### Crown Gall (*Agrobacterium tumefaciens*)

Due to stringent screening by many rose growers, crown gall is not commonly found in rose plantings. This destructive disease causes a warty looking gall at the base of the canes that can vary from the size of a pea to the size of a fist. (Fig. 6). Gall development causes gradual plant decline. The bacteria may arrive on contaminated nursery stock and once introduced, the bacteria persist in the soil for several years. Infection takes place through wounds. To prevent the disease, examine plants for galls carefully prior to purchase and prevent injuries during transplanting. There is no treatment. Remove and destroy infected plants. Do not replant roses, pyracantha or stone fruits in a place where crown gall is present



Fig. 4. Foliage damage caused by leaf cutter bee



Fig. 5. Powdery mildew damage



Fig. 6. Crown gall on rose stem

## Trouble Shooting Guide for Roses

Symptoms	Possible Causes	Recommendations
<b>Entire Plant</b>		
Failure to Thrive	Dead or damaged prior to planting	Purchase new plant
	Roots dried out during planting	Purchase new plant
	Inadequate or excessive irrigation	Adjust irrigation
	Poor soil drainage	Move rose to site with drainage
<b>Stems</b>		
Canes browning & dying back	Cane Borer	Remove the cane a few inches at a time until damaged wood is gone. Seal cane with wood glue. Prevent by sealing all rose pruning cuts with glue.
	Insufficient water	Adjust irrigation
	Over fertilization	Water heavily to leach remaining fertilizer, remove damaged wood.
Brown & black blotches	Stem Canker	Prune out diseased wood
Wart-like growth at the base of plant	Crown Gall	Remove and destroy plant, do not place another rose in this spot for several years.
New canes dramatically different from old	Suckers coming from rootstock rather than grafted rose	Remove suckers at point of origin
<b>Leaves</b>		
White powdery substance on leaves, leaves may be distorted	Powdery Mildew	Sulfur, Fungicide; space plants appropriately, wash down leaves to prevent establishment
Brown leaf margins	Salt Burn	Deep water to leach away salts, adjust water schedule to prevent build up of salts
Become progressively more yellow, beginning with older leaves and progressing to the new leaves.	Lack of nitrogen	Fertilize according to the instructions on the container
Leaves gray or with tiny speckled pattern	Spider Mites	Wash off with plain or soapy water, miticide
Circular holes in leaves	Leaf Cutter Bee	No control necessary
Tiny insects on the tips of new growth	Aphids	Wash off with plain or soapy water
Leaves yellow between the green veins	Iron deficiency	Apply chelated iron
Lower leaves yellowing on tips leaving a green arrow head shape in the center	Magnesium deficiency	Apply epsom salts
<b>Flowers</b>		
Blooms fewer than normal	Too much shade Insufficient or excess fertilizer or water High temperatures	Remove shade, or move plant Adjust to recommended rates Wait for seasonal change
Bloom a different color	If the stem originates below the ground it is coming from root stock rather than the grafted rose. If the stem originates above the ground (the stem with the flower of a different color originates on a cane that also has stems of the normal color), it is a sport.	Remove the cane at the point of origin  Marvel at the wonders of nature
Color Fades	Intense heat, bright sunlight Characteristic of some varieties	Provide shade or wait for seasonal changes If you don't like the color, replace with a different variety
Blooms distorted with brown tips	Thrips	Insecticide
No fragrance	Characteristic of some varieties	Replace with different variety
Petals damaged, blackened stub	Frost Damage Heat Damage	Wait for new growth Wait for new growth

## Other Problems

### Salt Burn

Symptoms include the edges of the leaves turning brown. This common problem is caused by a buildup of salts in the soil and subsequently in the plant tissue. Salts can accumulate from inefficient watering practices or if an excessive amount of fertilizer is used. Symptoms typically are the browning of leaf margins or browning of the entire leaf (Fig. 7). Avoid this problem by periodically watering slowly and deeply to leach

salts past the root zone. Also, carefully follow the instructions on fertilizer containers and do not over apply. ("If a little bit is good, then a lot must be better", does not hold true for fertilizer!) By applying the fertilizer in a 'split application', i.e. applying half the recommended amount in two applications timed about 2 weeks apart will minimize the potential for fertilizer 'burn'. Water thoroughly before and after fertilizing to help prevent burn.

### Nutrient Deficiency

In the Southwest, the alkaline soils are typically high pH (8.0 to 8.5). Ideal pH for growing roses is from 6.0 to 6.5. If the pH of the soil is either too high or too low, some nutrients may become unavailable for uptake by the plant roots. A nutrient imbalance can cause symptoms of nutrient deficiency.

Nitrogen deficiency causes a general yellowing of foliage, beginning with older leaves, then appearing on younger leaves (Fig. 8). Leaves turn light green and progressively more yellow. Reduced growth and leaf size, weak and spindly stems, and small flowers are other symptoms. Prevent a nitrogen deficiency by fertilizing regularly. However, don't apply too much nitrogen, which will show up as abundant foliar growth and very few blooms.

Magnesium deficiency is manifested by older leaves which turn yellow at the edge leaving a green arrowhead shape in the center of the leaf (Fig. 10). To prevent this condition, apply one-quarter cup of magnesium sulfate (epsom salts) to the rose bush two or three times per year. Do not over-apply.

### Nutrient Toxicity

Frequently, over fertilizing is the problem. Follow the directions on the bag, using no more than the prescribed amount. If an excess is spilled, recover as much as you can and water heavily to dilute and leach the rest of the fertilizer away from the roots.

Chemical pest control is utilized by many rose enthusiasts. Only use chemical controls after non-chemical methods have been tried. There are numerous products available that are labeled specifically for roses and specific rose pests. Always read and follow the labeled instruction to minimize damage to plants and beneficial insects.

### Acknowledgement

Fig. 10 used with permission of UF/IFAS, Nutrition Deficiency Symptoms of Woody Ornamental Plants in South Florida, IFAS Pub#ENH1098. Author: Timothy K. Broschat. University of Florida IFAS Extension, March 2008.

Figs. 1, 2, 4, 5: Ursula Schuch

Figs. 3, 6, 7, 9: Jack Kelly

Fig. 8: Kathryn Hahne



Fig. 7. Salt damage to rose foliage



Fig. 8. Nitrogen Deficiency



Fig. 9. Iron deficiency on rose



Fig. 10. Magnesium deficiency on rose