

Rose Insects & Related Pests

With their showy and often fragrant blooms, roses are easily one of the most popular flowering plants grown in South Carolina. Unfortunately, the numerous insects and related pests that attack them can make growing them "interesting", if not outright challenging. As with any plant, the first priority should be to provide the rose with the cultural conditions that it requires. A vigorously growing rose is much more likely to survive pest damage than a stressed plant. For more information on the cultural requirements of roses, see [HGIC 1172, *Growing Roses*](#) and [HGIC 1173, *Pruning Roses*](#). For information on diseases of roses, see [HGIC 2106, *Rose Diseases*](#).

When trying to control insects and related pests on roses, it is essential that the plants be thoroughly inspected on a regular basis. These inspections increase the likelihood that a pest infestation will be detected early, when pest numbers are low and control is easiest. In order to choose the best control method, it is necessary to correctly identify a pest first. Often, more than one control option is available for a pest. Whenever possible, physical control measures should be tried first. If a chemical control is necessary, the least toxic chemical should be used, being sure to apply it when a susceptible stage of the pest is present. When applying a pesticide, thorough coverage is important. Always be sure to read the pesticide label before purchasing. Apply all pesticides according to label instructions, following all precautions.

Aphids

Various species of aphids feed on roses, but the predominant species is the rose aphid (*Macrosiphum rosae*). Rose aphids are small (about 1/8 inch long). They are soft-bodied, pear-shaped,

pink or green insects that are found in clusters on new growth of buds, leaves and stems.



Rose aphid infestation on leaves of hybrid tea rose
Anne W. Gideon, www.insectimages.org

Aphids feed on plant sap with their piercing-sucking mouthparts. A low population of aphids does little damage to a rose bush; however, aphids reproduce very rapidly and can quickly reach numbers that cause damage. Their feeding results in distorted growth. Heavy infestations can reduce the number and quality of blooms. As they feed, aphids excrete honeydew, a sugary substance that attracts ants and wasps. The honeydew supports the growth of unsightly, dark-colored sooty mold fungi on the leaves.

Control: Aphids have several natural enemies, including parasitic wasps, ladybird beetles (ladybugs) and larvae, and green lacewing adults and larvae. Their natural enemies tend to keep aphid populations under control except in cool weather. Ants are sometimes associated with aphid infestations and will protect them from their natural enemies. If ants are present, they should be controlled.

Aphids can be hosed off with a strong stream of water directed above and below the leaves. Spraying with water should be repeated frequently as needed, focusing in particular on new growth. Roses can also be sprayed with insecticidal soap to control aphids. Insecticidal soap must be sprayed onto the aphids to be effective. Repeat spray three times at 5-7 day intervals. Higher toxicity insecticides are available. However, it is important to note that aphids are very difficult to control because they multiply so rapidly. Leaving even one aphid alive can result in a large population very quickly. In addition, these insecticides kill the natural enemies of rose aphids.

If insecticides are deemed necessary, the following are available in homeowner size packaging. Sprays containing bifenthrin, cyfluthrin, esfenvalerate, horticultural oil, insecticidal soap, lambda cyhalothrin, malathion, neem oil, permethrin, or pyrethrin will control aphids. Soil drenches or granular applications of imidacloprid, dinotefuran, or disulfoton will control aphids and last longer within the plant to prevent future infestations. See Table 1 for products containing these insecticides.

Beetles

A number of different beetle species feed on roses. Many of these beetles feed mainly on flower buds or open blossoms, but can feed on leaves. Since many beetles feed mainly at night, the gardener rarely sees them, only the damage that they cause.



Japanese beetles with characteristic leaf damage
David Cappaert, Michigan State University,
www.insectimages.org

Japanese beetles (*Popillia japonica*) feed during the day and are perhaps the most readily recognized of the beetle pests that feed on roses. An adult Japanese beetle is about ½ inch long and has a metallic green body and legs with coppery-brown wing covers. It can be distinguished from similar beetles by the tufts of white hair that are clearly visible at the end of its abdomen.

The adults begin emerging from the soil in mid-May and are present through August. They can live from 30 to 45 days. They lay their eggs in the soil. Grubs hatch from the eggs and feed on grass roots. As the weather cools, the grubs move more deeply into the soil to overwinter (survive the winter). In the spring, the grubs migrate back up to the root zone and continue to feed. They pupate (change to adult form) in late April and May.

Japanese beetles have chewing mouthparts and feed on flowers, buds and leaves of roses (as well as numerous other plant species). Partial or entire flowers and buds may be eaten. Typically, flowers and buds that have been fed on have ragged edges and/or holes in the petals. Affected buds may fail to open. Rose leaves are typically skeletonized (only leaf veins remain) by the feeding. Leaves with tender veins may be eaten completely.

Control: Various non-chemical control options are available for Japanese beetles. They can be handpicked and destroyed by dropping into soapy water. When only a few plants are involved, fine netting, such as tulle fabric, can be placed over the bush or individual blossoms to exclude the beetles. Japanese beetle traps are available commercially, but should be used with caution. They can be effective at reducing adult populations, but they should be kept at least 50 feet from the plant(s) that you are trying to protect. The traps have the potential to create more of a problem by attracting numerous beetles to the area. Also, traps must be emptied frequently as beetles are repelled by the smell of ammonia which is released by dead, rotting beetles.

Numbers of adults may also be reduced by using the product, Milky Spore, against the grubs in the lawn. This product contains a disease-causing bacterium (*Bacillus popilliae*) that specifically infects the grubs of Japanese beetles. It is applied to turf and once established, can be effective for 20 to 30 years.

However, as the adults are strong fliers, they can fly in from nearby lawns and pastures.

It is important to keep in mind that rose blossoms open quickly and are very attractive to Japanese beetles. These circumstances make it difficult to keep the blooms adequately covered with insecticide to protect them. Insecticides that are labeled for homeowner use include sprays containing bifenthrin, carbaryl, cyfluthrin, esfenvalerate, lambda cyhalothrin, malathion, neem oil, permethrin, or pyrethrin to control beetles. Soil drenches or granular applications of imidacloprid, dinotefuran, or disulfoton will control Japanese and other beetles and last longer within the plant to prevent future infestations. See Table 1 for specific products.

Mites

Mites are not insects but are more closely related to spiders with eight legs as adults instead of six. They are extremely small (about 1/50 inch long) and are somewhat difficult to see without a magnifying lens. One way to detect them is to hold a piece of white paper under a branch and then tap the branch sharply. Wipe your hand over the paper. If mites are present, red streaks will be seen.

Two-spotted spider mites (*Tetranychus urticae*) and southern red mites (*Oligonychus ilicis*) are pests on roses in South Carolina. Two-spotted spider mites are more of a problem during hot, dry weather and susceptibility increases when a rose is drought stressed. Southern red mites are more of a problem during cool weather in spring and fall, and their populations drop during summer.



Spider mite webbing and plant injury
Clemson University – USDA Cooperative Extension Slide Series

Mites have piercing-sucking mouthparts. They suck plant sap, typically feeding on the lower surface of a leaf. Early damage is seen as yellow or white speckling on the leaf's upper surface. Fine webbing may be seen on the undersides of leaves. With severe infestations, leaves may develop a grayish green or bronze color, and webbing may cover both sides of leaves as well as branches. Severely infested leaves may drop prematurely. Webbing can collect dust, making the plant look dirty.

Control: Both beneficial insects, such as lacewings and lady beetles, and predatory mites prey on spider mites. Predatory mites are about the same size as spider mites but can be distinguished from spider mites by their long legs and the speed with which they move. Several species of predator mites are available commercially for use as biological control agents.

A strong spray of water is a non-chemical control option that removes eggs, larvae (six-legged immature stage), nymphs (eight-legged immature mites) and adult mites. Be sure to spray lower surfaces of leaves and repeat as needed. This method is most effective with light infestations as seen with early detection. An important advantage of this control method is that populations of natural enemies are not harmed.

Insecticidal soaps and horticultural oils are effective control options for spider mites, and are essentially nontoxic to humans, wildlife, and pets, and only minimally toxic to beneficial predators. When using these products, good coverage is critical to ensure contact with the pest, and reapplication may be needed as determined by follow-up monitoring for the pest. Foliar injury from soaps and oils may occur on plants under drought stress. Water the plants well prior to spraying. Do not spray with soaps or oils if the temperature exceeds 85 degrees.

When growing roses, the use of broad-spectrum insecticides should be avoided as much as possible as these products can kill off natural enemies that help keep spider mite populations in check. Also avoid pesticides that claim to "suppress" mites as they tend to be weak miticides. When stronger chemical control is needed, the following insecticides/miticides are available in homeowner size packaging: tau-fluvalinate or bifenthrin sprays or granular applications of disulfoton. See Table 1.

Thrips

Various thrips species feed on roses. Two of the most common are flower thrips (*Frankliniella tritici*) and western flower thrips (*F. occidentalis*). Adult female thrips of both species are tiny, yellowish-brown insects with fringed or feathery wings. At less than $\frac{1}{16}$ inch long, they are barely visible without a magnifying glass. However, blowing lightly into the blooms and leaves causes thrips to move around, making them easier to see.



Thrips damage on roses
Clemson University

Both immature and adult thrips feed by scraping surface cells to suck plant sap. They feed on both leaves and flower petals with the majority of their damage to roses occurring from early to midsummer. Their feeding may result in distorted buds that open only partially or abort prematurely. Feeding on petals may result in petals streaked with silvery-white or brown as well as petals with browning edges. White and light-colored rose blossoms appear to be particularly attractive to thrips. Young leaves may be distorted and flecked with yellow as a result of thrips feeding.

Control: Control of thrips is difficult. Infested rose blossoms should be removed and destroyed. Grass and weeds in the area should be kept mowed or removed when possible. Insecticides are available but timing of sprays is very important. They must be applied before thrips enter unopened buds. In addition, because rose blooms expand rapidly, it is difficult to keep them adequately covered with

insecticide. If it becomes absolutely essential to spray an insecticide, the following are available in homeowner size packaging: acephate, bifenthrin, cyfluthrin, esfenvalerate, lambda cyhalothrin, permethrin, or spinosad. Insecticidal soaps will help control thrips, but thorough coverage is necessary. The soap spray must contact the pest to be effective, and may require three sprays at 5 to 7 day intervals. Soil drenches or granular applications of dinotefuran, disulfoton or imidacloprid will give thrips suppression. See Table 1 for specific products.

Rose Scale

Adult scale insects have an unusual appearance. They are generally small and immobile, with no visible legs. They secrete a waxy covering, making some appear white and cottony while others appear like white, yellow, brown or black crusty bumps. The waxy covering or "scale" protects adult scale insects from many insecticides. Their immature forms, called crawlers, are susceptible, however.



Adult rose scale on a rose cane
U.S. National Collection of Scale Insects Photographs
Archive, USDA ARS, www.insectimages.org

Several species of scale are pests of roses, but rose scale (*Aulacaspis rosae*) is one of the most serious. Female rose scales are round, gray to white and

about $\frac{1}{16}$ inch long. Males are elongate, white and much smaller than females. These insects overwinter as eggs under the waxy covering of the mother.

Rose scales are usually found on rose canes where they feed on sap with their piercing-sucking mouthparts. With a heavy infestation, rose scale can cause cane decline or twig dieback.

Control: Various natural enemies, including ladybird beetles (ladybugs) and parasitic wasps, usually keep scale insects under control. With light infestations, scale can be scraped off by hand and destroyed. Pruning out and destroying heavily infested canes is helpful. Horticultural oils (also called supreme, superior or summer oils) work well to control armored scales, such as the rose scale, by penetrating their waxy covers and smothering them. Horticultural oils applied at higher rates of 3% to 4% during the dormant season (i.e., to a rose bush that has lost its leaves) will penetrate the thick waxy covers of the overwintering adults. Applications at lower rates of 1% to 2% can be used during the spring to target the crawlers (immatures) and the newly settled scales with thin waxy covers. It is best to spray when temperatures are between 40 and 85 degrees.

Monitor the crawler emergence in the spring with sticky cards, double faced tape wrapped around a branch, or by putting an infested shoot into a baggie and watching for crawler movement. The presence of crawlers can sometimes be determined by sharply tapping an infested twig on a piece of white paper. Crawlers are very small and will appear as moving specks of dust.

Avoid using insecticides as much as possible as they will often kill the naturally occurring enemies of scale. When insecticides are necessary, they should be applied only when the crawler stage is present. The following insecticidal sprays are effective against crawlers only: acephate, bifenthrin, cyfluthrin, esfenvalerate, lambda cyhalothrin, malathion, or permethrin. Soil drenches of imidacloprid do not control these armored scales, but soil granular applications of dinotefuran may give some control.

Rose Leafhopper

Adult rose leafhoppers (*Edwardsiana rosae*) vary in color from white to gray to yellow to green. They are wedge-shaped and between $\frac{1}{4}$ - $\frac{1}{2}$ inch long. When a plant is disturbed, they hop or fly away quickly.

The adult female deposits eggs within the bark of rose canes in the fall. Dark, purple, pimple-like spots on the bark indicate the presence of eggs. In the spring the young nymphs (immature forms that resemble adults but are wingless) emerge from the cane. The wounds that remain in the bark as they emerge, as well as wounds made during egg-laying, can provide openings for stem canker-causing fungal pathogens to enter. Stem canker can result in plant death.

Nymphs and adult leafhoppers feed on the undersides of leaves, using their piercing-sucking mouthparts to suck plant sap. Their feeding causes white stippling (small dots) on the upper surface of the leaf. The stippling spots may merge, causing leaves to appear almost white. Damaged leaves may drop prematurely. Between feeding by the nymphs and adults, and egg laying by adult females, a severely infested rose bush may be killed.

Control: Natural enemies of rose leafhoppers include damsel bugs and assassin bugs. As such, broad spectrum insecticides that may kill these beneficial predators should be avoided. When an insecticide is necessary, be sure to spray lower leaf surfaces thoroughly. The following insecticidal sprays are effective against rose leafhoppers: acephate, bifenthrin, cyfluthrin, esfenvalerate, lambda cyhalothrin, malathion, or permethrin. Soil drenches or granular applications of dinotefuran, disulfoton or imidacloprid will suppress leafhopper populations. See Table 1 for specific products.

Rose Slugs

Rose slugs are the larvae (immature forms) of sawflies, non-stinging members of the wasp family. Three species of sawflies, the roseslug (*Endelomyia aethiops*), bristly roseslug (*Cladius difformis*), and curled rose sawfly (*Allantus cinctus*), are pests of roses. The larvae of some sawfly species are hairy and often mistaken for caterpillars. Others appear wet and shiny, superficially resembling slugs. The larvae generally reach about $\frac{1}{2}$ to $\frac{3}{4}$ inch in length.



Rose slug feeding on leaf surface
John A. Weidhass, Virginia Tech, www.insectimages.org

Generally rose slugs feed at night. Depending on the species, young rose slugs feed on the upper or lower surfaces of leaves between veins, leaving a 'window' of translucent tissue that turns brown. As some species of rose slugs get larger, they chew large holes or the entire leaf with only the midrib remaining. Regular inspection of roses is important because feeding typically progresses quickly, and extensive leaf skeletonizing can occur if infestations are not noticed. In addition, with their coloring, they can be very difficult to spot on leaves.

Control: Rose slugs can be controlled by handpicking. They can also be removed by spraying with water. Once dislodged, they cannot climb back onto the plant. Insecticidal soap and horticultural oil are also effective against rose slugs. Other insecticidal sprays that are labeled for homeowner use include acephate, bifenthrin, carbaryl, cyfluthrin, esfenvalerate, lambda cyhalothrin, permethrin or spinosad. Sprays should thoroughly cover both upper and lower leaf surfaces. Soil drenches or granular applications of dinotefuran or imidacloprid will control sawfly larvae. *Bacillus thuringiensis* will only control true caterpillars and not the larvae of sawflies. See Table 1 for specific products.

Leafcutting Bees

Leafcutting bees (*Megachile* species) are similar in size to honeybees, but are a blackish or metallic purple or green color. The females cut out semi-circular sections of leaves, which they use to line their nests. The cut surface is very smooth as compared to the ragged edge that results with most leaf feeding insects.



An unusually severe leaf cutting injury to wild rose
Whitney Cranshaw, Colorado State University,
www.insectimages.org

Control: No control is recommended because the damage caused by leafcutting bees is minimal, and the bees are important as pollinators.

Caterpillars

Infrequently caterpillars (immature stage of moths and butterflies) will be found feeding on rose foliage. Damage will appear as holes or irregular-shaped areas of the leaf blade that have been eaten. Several caterpillars may feed upon rose foliage, including the corn earworm, eastern tent caterpillar, stinging rose caterpillar and puss caterpillar.

Control: Insecticidal sprays of *Bacillus thuringiensis*, acephate, bifenthrin, carbaryl, cyfluthrin, esfenvalerate, lambda cyhalothrin, malathion, neem oil, permethrin, pyrethrin or spinosad will control caterpillars. Granular soil applications of disulfoton will control caterpillars and last longer within the plant to prevent future infestations. See Table 1 for specific products.

Grasshoppers

Grasshoppers are general feeders that feed on the foliage of many kinds of plants.

Control: Keep weeds and grass near roses under control because these are the breeding sites for grasshoppers. Insecticidal sprays with acephate, bifenthrin, carbaryl, cyfluthrin, esfenvalerate, lambda cyhalothrin, malathion, permethrin or pyrethrin will control grasshoppers. See Table 1 for specific products.

Table 1. Insecticides for Rose Pest Control

Pesticide Active Ingredient	Brand Names & Products
Acephate ¹	Ortho Japanese Beetle Killer Concentrate Bonide Systemic Insect Control Concentrate
<i>Bacillus thuringiensis (Bt)</i>	Green Light Worm Killer Concentrate Safer Caterpillar Killer Concentrate American Brand Thuricide Concentrate Bonide Thuricide Concentrate Southern Ag Thuricide <i>Bt</i> Caterpillar Control
Bifenthrin	Ortho Bug-B-Gon MAX Lawn & Garden Insect Killer Concentrate Hi-Yield Bug Blaster II Bifen Concentrate Bayer Advanced Rose & Flower Insect Killer RTU
Carbaryl	Garden Tech Sevin Concentrate; and RTS; and RTU Bayer Advanced Complete Insect Killer for Gardens RTU
Cyfluthrin	Bayer Advanced Garden Power Force Multi-Insect Killer Concentrate Bayer Advanced Triple Action Insect Killer for Lawns & Gardens Conc.
Dinotefuran	Green Light Tree & Shrub Insect Control with Safari 2G Insecticide
Disulfoton	Bayer Advanced Garden 2-in-1 Systemic Azalea, Camellia & Rhododendron Care RTU Granules (with 16-8-8 Fertilizer)
Esfenvalerate	Ortho Bug-B-Gon MAX Garden & Landscape Insect Killer Concentrate
Horticultural Oil	Ferti-lome Scalecide Green Light Horticultural Oil Spray Concentrate Ortho Volck Oil Spray Concentrate Bonide All Seasons Spray Oil Southern Ag Parafine Horticultural Oil SunSpray Horticultural Oil
Imidacloprid ²	Bayer Adv. Garden Tree & Shrub Insect Control Concentrate (Drench) Bonide Annual Tree & Shrub Insect Control with Systemaxx Fert-lome Tree & Shrub Systemic Insect Drench
Insecticidal Soap	Bonide Multi-Purpose Insect Control Soap Concentrate Safer Rose & Flower Insect Killer Schultz Safe Insecticidal Soap Insect Killer RTU Safer Insect Killing Soap RTU
Lambda Cyhalothrin	Spectracide Triazicide Once & Done Insect Killer Concentrate; & RTS
Malathion	Ortho Malathion Insect Spray Concentrate Green Light Malathion Insect Spray Concentrate Spectracide Malathion Insect Spray Concentrate Southern Ag Malathion 50% EC Bonide Malathion Concentrate
Neem Oil	Southern Ag Triple Action Neem Oil Concentrate Ferti-lome Rose, Flower & Vegetable Spray Concentrate Green Light Rose Defense Concentrate Ferti-lome Triple Action Plus: Neem Oil RTU Bonide Bon-Neem Insecticidal Soap Concentrate Green Light Neem II RTU (with Pyrethrins)
Permethrin	Bonide Eight Insect Control Vegetable, Fruit & Flower Concentrate Bonide Borer-Miner killer Concentrate Hi-Yield Kill-A-Bug II Concentrate Bonide Eight Yard & Garden RTS Green Light Conquest Insecticide Concentrate; & RTS Bonide Eight Garden & Home Insect Control RTU

Pesticide Active Ingredient	Brand Names & Products
Pyrethrin	Bonide Garden Insect Killer Concentrate Green Light Rose Defense II RTU Spectracide Garden Insect Killer Concentrate (with Piperonyl Butoxide) Spectracide Bug Stop for Gardens Concentrate (with Piperonyl Butoxide)
Spinosad	Green Light Lawn & Garden Spray Spinosad Concentrate; & RTS Bonide Captain Jack's Deadbug Brew Concentrate; & RTS Ferti-lome Borer, Bagworm & Leafminer Spray Concentrate
Tau-Fluvalinate	Bayer Advanced 3-in-1 Insect, Disease & Mite Control Concentrate; & RTU
<p>RTS = Ready to Spray (hose-end applicator) RTU = Ready to Use (pre-mixed spray bottle) Drench = Add to water and pour around base of plant ¹Other products containing acephate include: Ortho Orthenex Garden Insect & Disease Control Concentrate. ²Other products containing imidacloprid include: Bayer Advanced Dual Protection Azalea, Camellia & Rhododendron Insect & Disease Control Concentrate (Drench), Bayer Advanced 3-in-1 Insect, Disease & Mite Control Spray Concentrate (also in RTU), and Bayer All-in-One Rose & Flower Care Concentrate (Drench).</p>	

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