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COLLEGE OF AGRICULTURAL, FOOD, AND ENVIRONMENTAL SCIENCES

Insect Pests of Roses

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Roses are very popular landscape plants grown for their beauty. Roses are susceptible to several insects and diseases which reduce flower growth and quality as well as frustrate rose gardeners. In general, these insects do not kill the plant, but may stunt or kill parts, affect flowering, or cause aesthetic damage. Learning the proper care of roses and management of pest problems increases your success in growing a beautiful rose bush.

Plant Health Care (PHC) is a strategy for keeping plants stress free by considering factors related to growing and maintaining the plant. An important result of PHC is that roses in healthy condition are less impacted by insects than plants under stress. Start by selecting a suitable cultivar and site. Remember some rose cultivars and species are more resistant to disease. For suggestions on disease-resistant shrub roses, refer to the University of Minnesota Extension Service publication *Selecting Hardy Roses for Northern Climates*, FO-6750, and *Roses for the North*, MR-6594.

Kathy Zuzek

Photo 1: Healthy rose blossoms.

Next, select a proper site. Make sure that soil and light requirements are met and that the roses are planted at the correct depth. After planting, appropriate long-term maintenance is important. Follow the instructions found on the tag for water and fertility requirements, and provide a mulch around the base of the plants. See Extension publication *Culture of Garden Roses*, FS-1105, for more information on cultivation.

Management of insects and diseases is called Integrated Pest Management (IPM). IPM is a decision-making process which includes scouting, damage-threshold decisions, control options, and timing of insecticide application. IPM practices reduce non-target effects on beneficial insects and permit control decisions based on pest species and the most vulnerable stage in its life history.

This publication serves as a companion to the slide set, CUES for Insect Identification on Roses, SS-6954.

IPM for insect pests of roses

First inspect your plants for damage or insects. This is called scouting. Look for discoloration, unusual growth, swellings, and leaf defoliation. Set a threshold for your acceptance level of insect and disease damage. While this can be related to plant health, in the case of ornamental plants, such as roses, it often relates to aesthetics. When damage is discovered, be sure the damaging insects are still present. It will not help to use controls after the insects have left. When pest insects are found, consider the range of options available for controlling that particular pest. Control suggestions are given below for specific pests. There may be options other than conventional insecticides to control the pest. The use of physical measures, low-toxicity insecticides (called biorational insecticides), or the judicious use of conventional insecticides help preserve beneficial insects that naturally help keep pest insect populations in check. If physical measures are an option for your pest, try them first. If not, use the least toxic insecticide that is effective for your pest. Proper timing of insecticidal usage to the vulnerable stage of the pest is important.

The target is the pest, therefore inspect the plant to see where the pests are located and treat only those areas. Spot treating puts the insecticide only where it is needed and reduces the amount of pesticide used.

Specific pesticides are suggested for each pest. The pesticides are listed by the common chemical name found in the active ingredient area of the product label. An example of a trade name is in parentheses. Look for the appropriate active ingredient on the label and verify that the product can be used on roses. Some pesticide products are ready to use, while others require preparation. Also, some pesticides are harder to find and may require more effort to locate. Always read and comply with the pesticide label. Use of trade names does not imply endorsement.

Steps in IPM

1) Routinely inspect plants for pests before damage becomes severe.

2) Determine an acceptable threshold of pest damage.

3) Consider a range of options available to control the pest once the threshold is reached.

4) Choose the least toxic treatment that will effectively solve the problem.

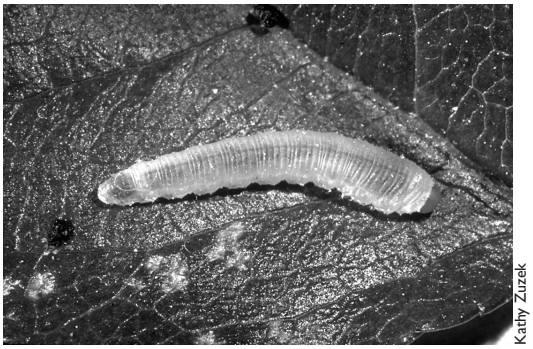
5) Begin inspecting. Return to step 1.

See Extension publication *Sustainability in Urban Ecosystems*, FO-6709, for more information on limiting the use of pesticides. Other information on roses can be found in Extension publications: *Rose Diseases*, FS-1163; *Selecting Hardy Roses for Northern Climates*, FO-6750; the slide set *CUES for Hardy Roses*, SS-6751; and *Roses for the North*, MR-6594; and the slide set *CUES for Insect Identification on Roses*, SS-6954.

Three species of sawflies (Roseslug, *Endelomyia aethiops*: Bristly roseslug, *Cladius difformis*; and Curled rose sawfly, *Allantus cinctus*)

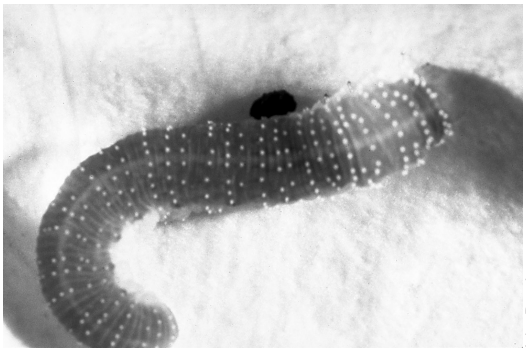
Identification

Sawflies are small, dark, non-stinging wasps. Sawfly larvae skeletonize rose leaves. These larvae look much like butterfly or moth caterpillars, but can be identified by the number of fleshy legs (prolegs) that follow the front three pairs of legs. Sawflies have five or more pair of prolegs, while caterpillars have less than five.



Kathy Zuzek

Photo 2: Roseslug larvae.



John Davidson

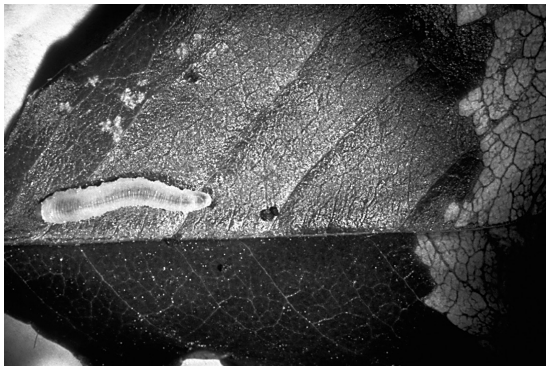
Photo 3: Curled rose sawfly larvae.

Three species of sawflies feed on rose foliage. All three species are light green with orange heads and late larvae can reach 3/4 inch (19 mm) in length.

Scouting

Rose sawflies produce damage called skeletonization by chewing away a layer of the leaf except for the veins. The thin layer remaining turns clear or brown and the uneaten veins appear like a skeleton. The older larvae of the bristly roseslug and curled rose sawfly chew holes rather than skeletonizing the leaves.

Begin to scout for sawfly larvae in early May. Roseslugs feed through June and are not seen again until the next spring. The curled rose sawfly also has one generation per year. The bristly roseslug has several generations throughout the summer. Sawflies often feed on the undersides of leaves, so inspect all leaf surfaces.



John Davidson

Photo 4: Roseslug and skeletonizing of leaf on right side of photograph.

Control

Sawflies are best controlled when young. Several options exist for control. A physical tactic is to simply pick them off by hand. Dislodging them with a stick or a stream of water also works. If using water be sure to spray early enough in the day to allow foliage to be dry by sunset so as not to create favorable conditions for fungal development. Horticultural oil, insecticidal soap and azadiractin (sometimes called neem), are low-toxicity biorational insecticides for young sawflies. Azadiractin is slower acting. *Bacillus thuringiensis* (Bt) is effective on young lepidoptera caterpillars but NOT on larval sawflies. Conventional insecticides include acephate (Orthene), carbaryl (Sevin), chlorpyrifos (Dursban), malathion, and diazinon. Avoid spraying the rose flowers as many conventional insecticides are highly toxic to bees.

John Davidson

Photo 5: Curled rose sawfly and leaf defoliation.

Japanese beetle (*Popillia japonica*)

Identification

The Japanese beetle is a scarab beetle and an exotic insect which became established in the East and is spreading across the United States. Japanese beetles are approximately 7/16 inch (10-12 mm) long. The front of the beetle is dark metallic green and the wing covers are dark tan. There are five small, white patches of short hairs along each side of the dorsal abdomen on the beetle. These patches are a key characteristic for identification. If it doesn't have these white hair tufts, it isn't a Japanese beetle. Other beetles can be found on roses and are described below.

Kevin Stroom/ Vera Krischik

Photo 6: Japanese beetle.

Scouting

One of the favored foods of adult Japanese beetles is rose foliage and flowers, although adults feed on many plant species. Larvae feed on the roots of grasses. Inspect your plants for skeletonized leaves and the presence of adult beetles.

Control

The Minnesota Department of Agriculture has a quarantine on Japanese beetles as of 1997. Report any sightings to the Minnesota Department of Agriculture at (612) 296-3343. Control is the same as the rose chafer.

False Japanese beetle (*Strigoderma arbicola*)

Identification

The false Japanese beetle is scarab beetle that resembles the Japanese beetle and is native to Minnesota, but is less of a problem species. The adult beetles are about 7/16 inch (10-12 mm) long and are a dark tan to brown color. Some may have a slight metallic green color on the front third of the body, though not as bright as the Japanese beetle. There are no white tufts along the dorsal abdomen edges as is found on the Japanese beetle.

Kevin Stroom/ Vera Krischik

Photo 7: False Japanese beetle.

Scouting

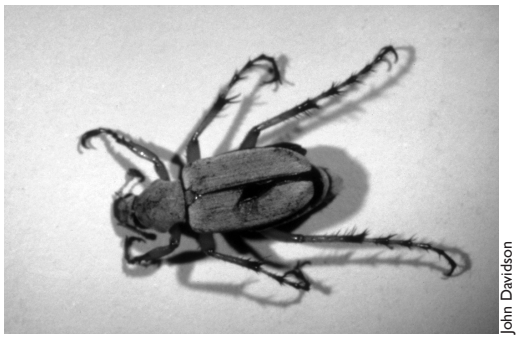
This insect has not been studied extensively. Larvae feed on plant roots, but a species list is not well known. Adults are found on wild and cultivated roses. When numbers of adults are large, the beetles damage roses by feeding on buds and flowers.

Control

Control is the same as for the rose chafer.

Rose chafers (*Macrodactylus subspinosus*)

Identification
Rose chafers are scarab beetles approximately 3/8 inch (8-9 mm) long, slender, light tan, and lacking the white hair tufts of Japanese beetles.


John Davidson
Photo 8: Rose chafer.

Scouting
Rose chafers are generally found in areas with sandy soil. Adults feed on rose flowers and foliage. The larvae feed on the roots of grasses, alfalfa, or clover sod. Inspect your plants for skeletonized leaves and adult beetles.

Control
While rose chafers can be numerous, hand pick if infestation is light. The insecticides carbaryl (Sevin), acephate (Orthene), diazinon, and chlorpyrifos (Dursban) control these beetles. However, the beetles are quite mobile and new beetles may replace those killed by insecticides. Avoid spraying flowers so as to not kill bees.

Fuller rose beetle (*Asynonychus godmani*)

Identification
The Fuller rose beetle is a weevil with a short snout. The adult weevil is brown with black mottled markings and about 5/8 inch (14-15 mm) long.


Kevin Stroom/Vera Krischik
Photo 9: Fuller rose beetle.

Scouting
Both larvae and adults are pests. Larvae feed on roots while the adults chew foliage and flowers. Adults generally feed during the night and are considered to be more damaging.

Control
Control is similar to other beetle defoliators. Hand picking at night is an option with low populations. Control is the same as for the rose chafer.

Leafcutting bees (*Megachile spp.*)

Identification
Leafcutting bees are similar in size to honeybees, but are blackish in color.

Scouting
Leafcutting bees cut out sections of rose and other plant leaves to line their nests. The damage of leafcutting bees is quite distinctive. The holes are large and round with a smooth edge. The edges of holes chewed by most insects are irregular or ragged.


Kevin Stroom/Vera Krischik
Photo 10: Leafcutting bee.

Control
Control of leafcutting bees is not recommended because they are beneficial pollinators.

Piercing/sucking feeders

Aphids (Rose aphid, *Macrosiphum rosae*; Potato aphid, *Macrosiphum euphorbiae*)

Identification

Aphids are small, inconspicuous insects that feed in groups near the tips of new shoots and flower buds. Those found on roses are generally green or pinkish and up to 1/8 inch (3 mm) long.

Scouting

Aphids feed by sucking plant juices, causing distortion of young leaves and stunting new growth. Flowers may also be affected when aphids feed on the buds. Watch for honeydew, a clear, shiny, sticky waste product that collects on the leaves below the aphids and attracts ants. A black fungus called sooty mold also grows on the honeydew.


John Davidson

Photo 11: Aphid.

Look for beneficial insects where you see aphids. Lacewing and ladybird beetle larvae and adults are among the naturally occurring predators of aphids. Tiny parasitic wasps also control aphids by laying their eggs inside the aphids. The wasp larva feeds inside the aphid, killing it and leaving mummies–dark, swollen, motionless aphids with a hole in them.

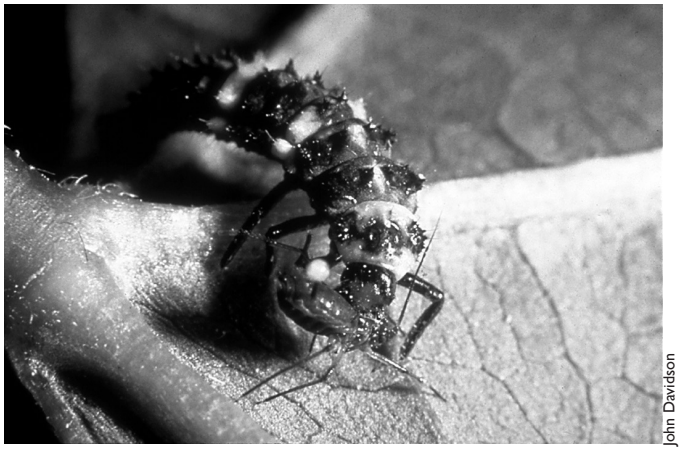

John Davidson

Photo 12: Ladybird beetle larva eating an aphid.

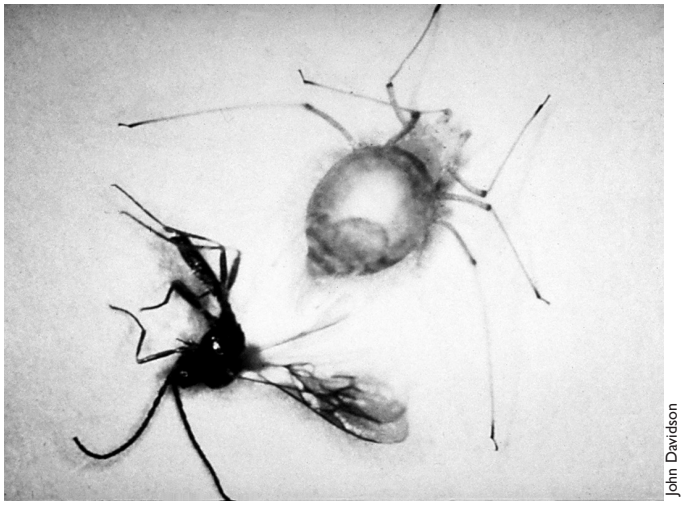

John Davidson

Photo 13: Parasitic wasp emerged from mummified aphid.

Control

While they have many natural predators and parasites, aphid populations can increase rapidly. Spraying with water can dislodge aphids. Do this early enough so that leaves dry by sunset. Biorational insecticides such as insecticidal soap are effective on aphids. Since insecticidal soaps work well on aphids and have low toxicity, they are suggested over conventional insecticides. Insecticidal soaps must contact the aphids directly. Conventional insecticides for aphids include pyrethrins, malathion, acephate (Orthene), chlorpyrifos (Dursban), and diazinon. A long-term strategy is to add beneficial insects (such as ladybird beetles or lacewings) to the area, though it can be difficult to get good control of the aphids. Feeding ladybird beetles honey before release can improve their retention on the plant.

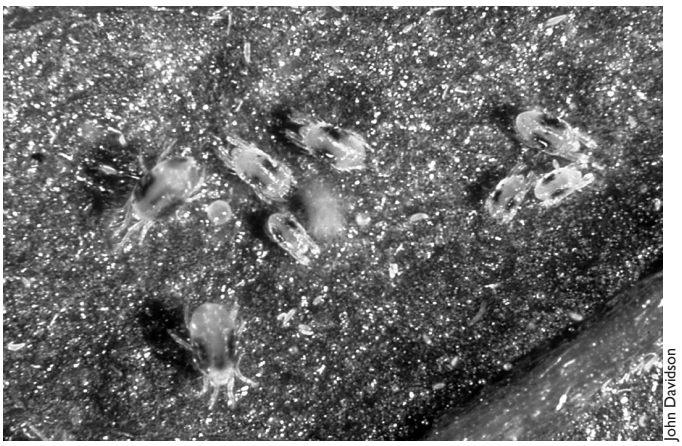
Twospotted spider mites (*Tetranychus urticae*)

Identification

Mites are not insects, but are closely related to both insects and spiders. They are a yellowish green with a black spot on each side of the body. Mites are very small and difficult to see. A magnifying glass may aid in viewing mites

Scouting

Mites feed by sucking plant juices out of individual cells from a wide variety of ornamental plants including roses. This causes small yellowish stippling (like spray paint droplets) on the foliage of host plants. Also look for very fine webbing on leaves and stems. As a result of heavy mite populations, leaves may turn yellow and drop from the plant. You can also check for mites by shaking branches over a white sheet of paper. The mites show up as tiny moving specks.



John Davidson

Photo 14: Twospotted spider mites.

Control

Insecticidal soap and horticultural oil are biorationals for mites, although subsequent application is neccessary. If the population is high, conventional pesticide use may be warranted. Mites are not insects. Consequently, pesticides called miticides are used for control. Dicofol (Kelthane) is an available miticide. Conventional insecticides with miticidal properties are appropriate. Read the product label to see if spider mites are listed. Focus mite control on the undersides of leaves and treat the entire plant.

Jody Fetzer

Photo 15: Twospotted spider mite damage. Notice bleaching of color in leaf.

Rose midge (*Dasineura rhodophaga*)

Identification
The rose midge is a tiny fly that lays its eggs in the buds and shoots of roses. The legless fly larvae are small whitish maggots about 1/16 inch (1mm) in length.

Scouting
Feeding by the larvae causes bent, misshapen, or blasted buds and withering stem tips. Flower buds and growing shoots turn brown and finally black. With a magnifying lens, look for the small whitish larvae between the petals and sepals at the base of the flower bud to verify the presence of midge larvae.


Robert Mugaas

Photo 16: Rose midge damage to a bud.

Control
Prune out these infested buds to remove the larvae, reducing the number of midges available to reinfest the plants. Midge damage is often noticed after July. Chemical control is needed for persistent problems. Systemic insecticides are the best choice. Acephate (Orthene) and dimethoate (Cygon-2E) are systemic chemical controls. Diazinon, a non-systemic, is also an option, but larvae can be protected from the chemical within the flower or vegetative buds. Be sure to get good coverage of flower buds.

Rose curculio (*Merhynchites bicolor*)

Identification
The adult rose curculio weevil is reddish in color with a long snout. The head, snout, legs, and underside are black. Adults are approximately 3/16 inch (6 mm) in length.

Scouting
These weevils feed on all types of roses, especially shrub roses. Adults feed on rose buds and on shoot tips, resulting in damaged petals and dead shoot tips. Feeding on the stem below the bud can cause it to bend over. Larvae feed in rose flower buds. The legless larvae are similar in color to rose midge larvae, are up-to-1/4 inch (6 mm), and are more robust. There is a single generation each year with adults appearing in June.


Kevin Stroom/Vera Krischik

Photo 17: Rose curculio.

Control
Hand pick adults if few in number. When bothered, adults fall from the plant. Therefore, gently shake canes over a bucket or tray to collect fallen adults. Prune out and remove finished flowers to remove larvae, which can help reduce future problems. Conventional insecticides include carbaryl (Sevin), acephate (Orthene), diazinon, and chlorpyrifo (Dursban).

Gall wasps (Mossy rose gall, *Diplolepis rosea*; Spiny rose gall, *Diplolepis bicolor*)

Identification

Wasp galls are abnormal plant growths resulting from activity of the tiny, non-stinging cynipid wasps.

Dave Hansen

Photo 18: Mossy rose gall

Scouting

Rose galls occur on leaves or stems of the rose plant and are specific to the species of gall maker. The mossy rose gall looks like a mossy sphere. The spiny rose gall is round with many pink spines. Insect larvae develop inside the gall. Stem galls can damage plants above the location of the gall, especially if there are many galls on a particular stem. Numerous galls may stress the plant because nutrients otherwise available for plant growth are used to produce galls.

Control

Control is best done by pruning out galls before the wasps have matured and emerged from the gall. Since adults emerge from the old galls in spring, prune out the galls after the leaves drop in fall, cutting below the gall and above a bud. For leaf galls, pick up fallen leaves. Removing the galls from the garden may not totally eliminate future problems if adult wasps fly in from nearby areas. Timing for insecticidal treatment of these wasps is difficult and not suggested.

Rose stem girdler (*Agrilus aurichalceus*)

Identification

The adult rose stem girdler beetle is about 3/8 inch (9-10 mm) long, with a flattened body shape. Adults are not likely to be seen. The larva is cream-colored, noticeably segmented, and has a large head. Larvae cannot be seen on the exterior surface of the plant.

Scouting

The rose stem girdler larva feeds just beneath the bark of rose stems. Its feeding prevents water and nutrient flow in the stem, causing the stem above the feeding area to die. The stem also swells just below the dead area.

Control

When injury is noticed, prune out the affected stem below the injury and above a bud. Dispose of the pruned canes to remove the insects from the garden. Effective chemical control is difficult and not recommended.

Jody Fetzer

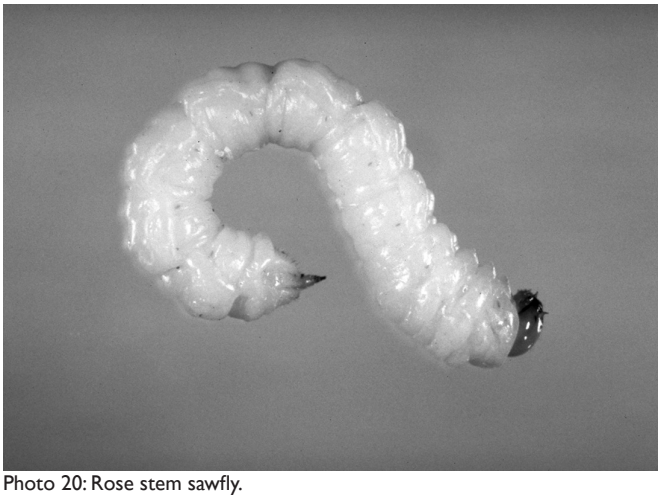
Photo 19: Rose stem girdler

Rose stem sawfly (*Hartigia trimaculata*)

Identification
Adult rose stem sawflies are small, dark, non-stinging wasps. The larva is cream colored with a brownish orange head. It is grublike and legless. Larvae will not be seen on exterior surfaces of the plant.

Scouting
This sawfly feeds inside the rose cane rather than on foliage. The larva first feeds just beneath the bark and can girdle the cane from the inside, causing the cane to wilt and die. Older larvae feed in the center of the cane and work downward. One generation is thought to occur per year.

Control
Control recommendations are the same as for the rose stem girdler. As the larvae move downward in the stem, prune in small increments until you come upon the larva or the pith is solid. Prune above a bud.

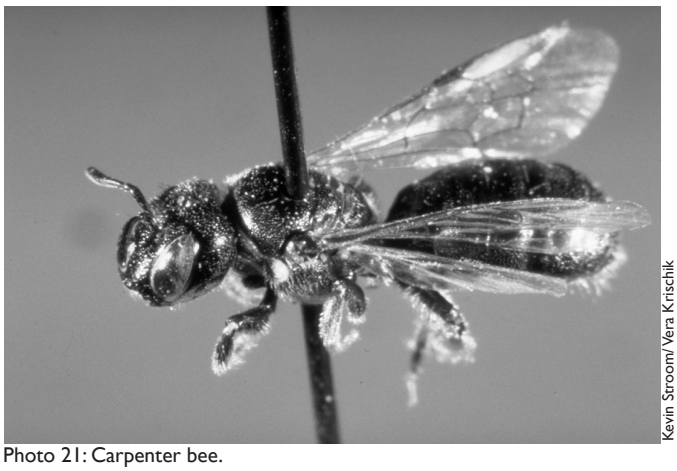


John Davidson

Photo 20: Rose stem sawfly.

Carpenter bees (*Ceratina spp.*)

Identification
Carpenter bees are small, thin, and metallic blue-black.



Kevin Stroom/Vera Krischik

Photo 21: Carpenter bee.

Scouting
Rose is one of the favored plants of small carpenter bees for nesting. The carpenter bees tunnel in canes to provide a series of rearing cavities for their grublike young. These bees usually tunnel in dead canes. When they tunnel into live parts of the cane those parts die. Damage is generally minimal.

Control
Prune out dead canes to reduce the likelihood of attracting carpenter bees. Chemical control is not recommended.

Table 1. Physical and Biorational Controls for Rose Insects. Read the information within the text for further details about these control options.

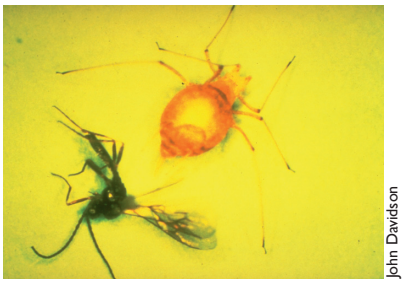
Insect	insecticidal soaps	horticultural oils	azadiractin	water spray	pruning	hand-picking
Sawflies	●	●	●	●		●
Japanese beetle*						
False Japanese beetle						●
Rose chafer						●
Fuller rose beetle						●
Leafcutting bees						
Aphids	●			●		
Spider mites	●	●				
Rose stem girdler					●	
Rose stem sawfly					●	
Carpenter bees					●	
Rose midge					●	
Gall wasps					●	

*See text

Table 2. Insecticides for Rose Insects. Read the information within the text for appropriate chemicals, timing of application, and other management suggestions. Other professional recommendations are provided in the Extension publication, Insecticide Suggestions to Manage Landscape Tree and Shrub Insects, FO-0704.

Insect	pyrethrins	malathion	(Sevin) carbaryl	diazinon	(Orthene) acephate	(Dursban) chlorpyrifos	(Kelthane) dicofol
Sawflies		●	●	●	●	●	
Japanese beetle**		●	●		●	●	
False Japanese beetle			●	●	●	●	
Rose chafer			●	●	●	●	
Fuller rose beetle			●	●	●	●	
Leafcutting bees*							
Aphids	●	●		●	●	●	
Spider mites							●
Rose stem girdler*							
Rose stem sawfly*							
Carpenter bees*							
Rose midge***				●	●		
Gall wasps*							

* Report sightings to the MDA.
** See text.
*** Dimethoate (Cygon-2E) is another systemic chemical for rose midge.



John Davidson

Parasitic wasp

John Davidson

Curled rose sawfly

Dave Hansen

Mossyrose gall

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