

Roses and Rose Pest Management in Ohio Landscapes



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Notes:

Hi, this is Dave Shetlar, a professor emeritus of entomology. I go by the professional nickname of The BugDoc. Jenny Andon has asked me to step in to discuss pests of roses as the original speaker is unavailable. My background is quite varied, but at Ohio State, I was the urban landscape entomologist who performed research, extension outreach and teaching, primarily in the field of turfgrass and ornamental plant entomology.

I am by no means an expert in rose cultivation, but I have quite a bit of experience working with the several rosarian clubs in Ohio. These folks have extremely high standards and most verge on being a bit radical in producing perfect roses. Any missing petal or blemish can cause them to lose a contest when they have their frequent rose shows.

I'm approaching this talk more for general home landscapers who just want a few roses to provide their beauty in an Ohio landscape.

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Types of Roses Broad Categories

- ❖ **Old Garden Roses** – single bloom time, double-flowered, fairly disease resistant.
- ❖ **Modern Roses** – hybrids after 1867, continuous blooming, multiple flower types, often lack hardiness and disease resistance.
- ❖ **Wild Roses (=species roses)** – single bloom time, single flowered.

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Notes:

If you do an Internet search on rose types, you'll find that there are many different classifications and dozens of rose types. However, most of these web sites start with these three basic rose types. Old Garden Roses are cultivars that were in common usage prior to the mid-1800s. These were true roses that were most commonly grown in European landscapes and they were generally selected for their hardiness and ability to withstand diseases. These early types generally bloomed once per season.

In 1867, new rose hybrids were described and patented so that they could be sold as better revenue generators. These hybrids were often grown and developed in glass houses and they were specifically selected for large and continuous blooming. Many of these roses lack winter hardiness, so they often require careful winter protection in more northern growing zones.

The last category are species roses. These are roses that keep their wild-type characteristics. Most have a single bloom time and have a single petal row.

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Types of Roses

Hybrid Teas	China
Grandiflora	Damask
Floribunda	Gallica
Polyantha	Climbing
Alba	Shrub
Bourbon	Groundcover
Centifolia	Miniature
English (David Austin)	Wild Prairie

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Notes:

There are a couple dozen other names used to describe types of roses. Some of the most famous are the large-blooming, multi-petal hybrid teas. These are some of the most spectacular hybrids and are the ones most think of when they order long-stemmed roses for a sweetheart! I don't have time to cover all the types listed here, but many of the names describe their characteristics. Grandiflora and Floribundas describe that these roses generally produce extensive, multi-bloom floral displays. Climbing roses are great at producing long, extensive canes that can be trained up trellises. Shrub, groundcovering and miniature roses often need less pruning and will stay in place. In most of these categories, there are specific rose cultivars that may be highly fragrant, lightly fragrant or lack any fragrance. You have to read the description in order to determine their amount of fragrance.

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Notes:

As an entomologist, I'm often more concerned with the number of petals and petal opening when dealing with roses. Single-petal roses expose their internal floral parts so that pollinators will frequent them for pollen and nectar. Many of the hybrid tees never fully open and some of the other types have so many petals that the internal stamens are never exposed.

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Major Diseases That Attack Roses

- ❖ **Black Spot** - (foliar fungus)
- ❖ **Powdery Mildew** – (foliar fungus)
- ❖ **Stem Canker** - (several stem/branch fungi)
- ❖ **Rust** – (foliar fungus)
- ❖ **Botrytis Blight** – (floral fungus)
- ❖ **Rose Rosette Disease** – (virus spread by mites)
- ❖ **Rose Mosaic** – (virus spread by sucking insects)

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Notes:

Beside winter hardiness, many of the hybrid roses are highly susceptible to debilitating, even lethal diseases. In Ohio, the two most important foliar diseases are black spot and powdery mildew. Both of these disease can completely defoliate susceptible roses unless the roses are on a strict spray schedule. Fortunately, some of the newer cultivars of roses have been selected specifically to resist these diseases. The so-called Knock-out roses are probably the best-known series of hybrids that have bush habitat and excellent blackspot and powdery mildew resistance. Unfortunately, these roses are highly susceptible to the lethal rose rosette virus and most are highly susceptible to several insect pests. Bottom line, when selecting any rose, it is wise to check out the cultivar on web sites and determine its hardiness and disease susceptibility rating.

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Rose Blackspot Disease



- ❖ Spores spread by splashing water.
- ❖ Can defoliate plants.
- ❖ Overwinters in infected leaves and small stems.
- ❖ Requires fungal spray program.
- ❖ Remove old leaves and stems in fall.
- ❖ Some cultivars highly resistant.

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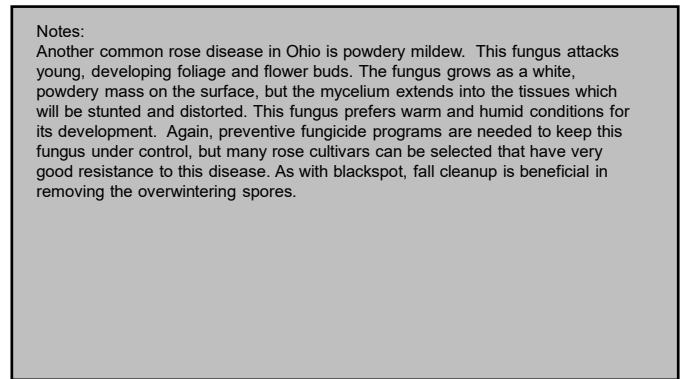
Notes:

Without a doubt, rose blackspot is the most common foliar disease issue found attacking Ohio's landscape roses. This is a fungal disease that can quickly spread by spores being splashed from infected leaves and stems, especially during warmer weather. Other than picking resistant cultivars, pruning back small branches and completely removing all leaf residues in the fall will help reduce inoculum the next season. If susceptible cultivars are to be used, fungicide protectant sprays will be needed, often on a weekly or every other week basis. This spray program will need to be started in the middle of the first flush of leaves because once leaves and stems are infected, fungicides won't cure the infections.

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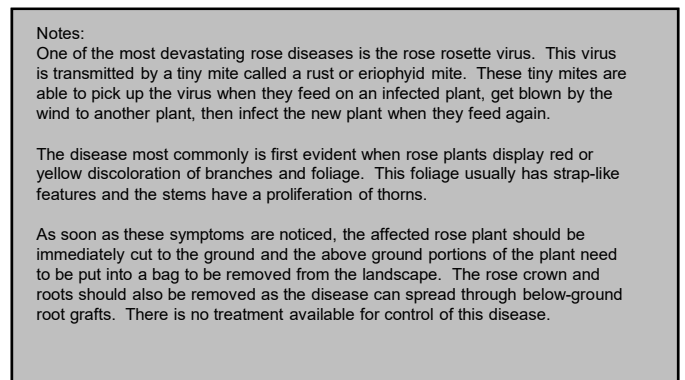
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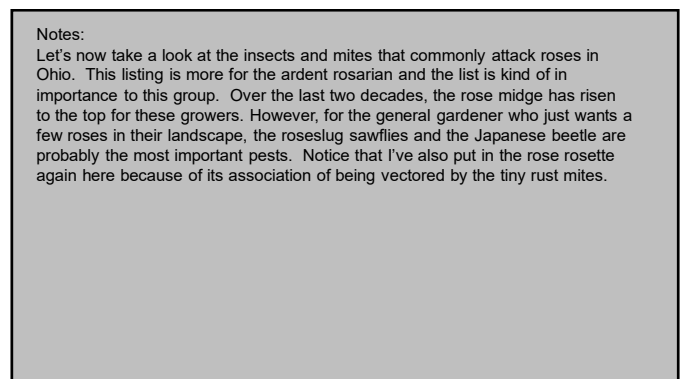
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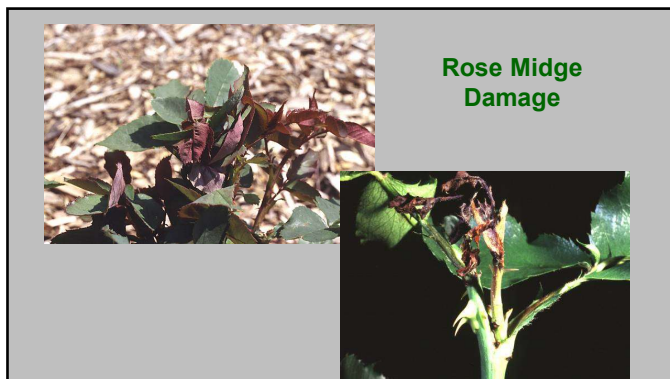
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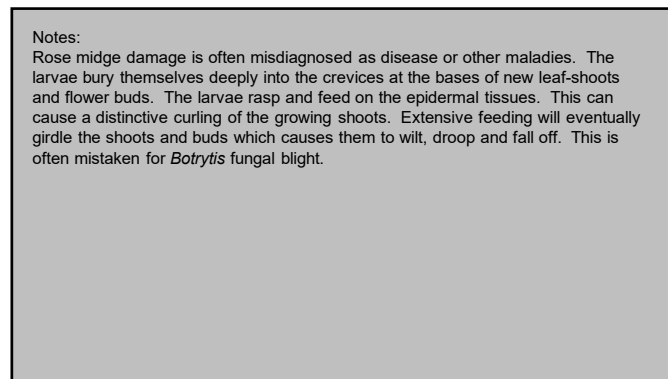


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**Rose Midge
Damage**

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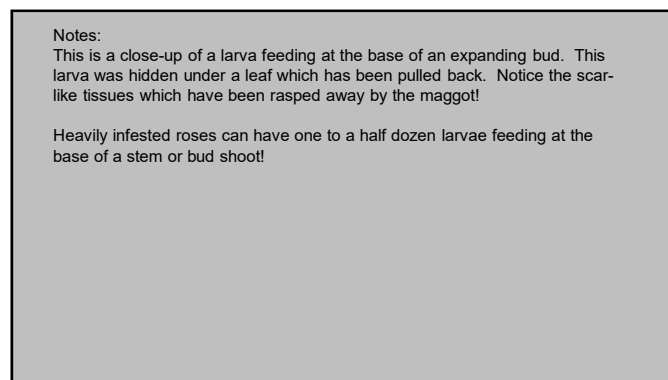
Notes:

Rose midge damage is often misdiagnosed as disease or other maladies. The larvae bury themselves deeply into the crevices at the bases of new leaf-shoots and flower buds. The larvae rasp and feed on the epidermal tissues. This can cause a distinctive curling of the growing shoots. Extensive feeding will eventually girdle the shoots and buds which causes them to wilt, droop and fall off. This is often mistaken for *Botrytis* fungal blight.

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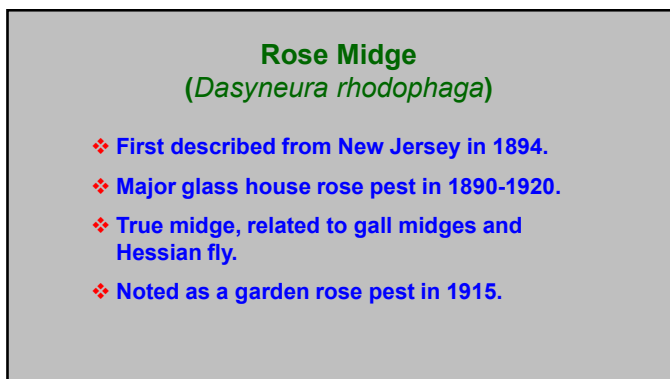


Notes:

This is a close-up of a larva feeding at the base of an expanding bud. This larva was hidden under a leaf which has been pulled back. Notice the scar-like tissues which have been rasped away by the maggot!

Heavily infested roses can have one to a half dozen larvae feeding at the base of a stem or bud shoot!

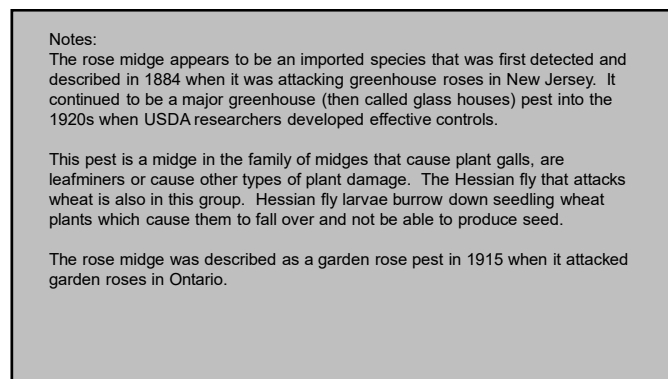
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**Rose Midge
(*Dasyneura rhodophaga*)**

- ❖ First described from New Jersey in 1894.
- ❖ Major glass house rose pest in 1890-1920.
- ❖ True midge, related to gall midges and Hessian fly.
- ❖ Noted as a garden rose pest in 1915.

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Notes:

The rose midge appears to be an imported species that was first detected and described in 1884 when it was attacking greenhouse roses in New Jersey. It continued to be a major greenhouse (then called glass houses) pest into the 1920s when USDA researchers developed effective controls.

This pest is a midge in the family of midges that cause plant galls, are leafminers or cause other types of plant damage. The Hessian fly that attacks wheat is also in this group. Hessian fly larvae burrow down seedling wheat plants which cause them to fall over and not be able to produce seed.

The rose midge was described as a garden rose pest in 1915 when it attacked garden roses in Ontario.

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Rose Midge Biology

- ❖ Eggs 0.3 mm long, take 2 days to hatch.
- ❖ Larvae 0.3 to 1.8 mm long, white to pinkish in color, take 5 to 10 days to mature.
- ❖ Pupae 1.6 mm long, in cocoon in soil, take 5 to 7 days to mature.
- ❖ Adults 1.0 to 1.25 mm long, yellowish with long legs and short antennae, live for 1 to 2 days.

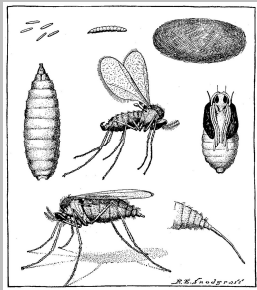
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Notes:

The biology of the rose midge was investigated by USDA entomologists at the turn of the last century. Under greenhouse conditions, the little midge can complete its development in two to three weeks. In landscapes, at cooler temperatures, the life cycle can take four to six weeks to complete. In Ohio, we suspect that there are three to four generations in a typical growing season.

It is important to note that the mature larvae drop to the ground to pupate. The little pupae look like tiny sesame seeds but they are wrapped in a cocoon which can be covered by surrounding debris. Also note that the adults apparently don't feed, but mate and lay eggs in one to two days!

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Rose midge life stages,
USDA, 1909

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Notes:

This is a copy of the illustration included in a 1909 USDA publication on the rose midge life stages. Note that this midge has a typical fly life cycle with egg, larval (maggot), pupal and adult stages. The larval stage is the only one that feeds and grows. The larvae undergo three molts or three instars. The larvae have tiny mouthparts that are used to rasp on the epidermis of the rose tissues. The macerated tissues are swallowed as food. As stated before, when mature, the larvae drop to the ground, spin an oval cocoon and then pupate. The pupa is the transformation stage whereby the entire body and internal organs are being transformed into those found in the adult. Female midges have a more pointed abdomen tip which can be extended to insert eggs into folds and crevices of developing buds.

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Rose Midge Controls (BugDoc Perspectives)

Cultural Controls

Ground covers, hand pick?

Preventive Insecticides

Imidacloprid (every month – not on label!)

Dinotefuran (every month – label allows)

Acetamiprid (every month)

Azadirachtin (Azatin, Azatrol, NeemAway)?

Spinosad?

Curative Insecticides (??) IGRs?

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Notes:

The neonicotinoid insecticides provide good control of rose midge, but early treatments are essential for season-long success! The soil drench (pull back the mulch so that the bases of the plants are exposed) is one of the easiest methods to apply these pesticides. Granular formulations are also available, but again, be sure to apply the granules to the soil surrounding the rose plants, NOT the mulch! Imidacloprid is not very soluble and takes a week to 10 days to achieve active levels in the plant. I recommend applications start when there is 1.5 to 2.0 inches of green showing in the spring! This is pretty early! Dinotefuran (Safari & Green Light systemic insecticide with Safari) is highly water soluble and moves much more rapidly in plants. Again early applications are important for success. Most imidacloprid labels only allow one application in a season, while dinotefuran labels allow several. To be most effective, dinotefuran seems to work best when applied during flushes of new growth (about every 30 to 40 days). Some web blogs are also suggesting that the botanical insecticide, azadirachtin, and the microbial insecticide, spinosad, can be effective if used on a regular basis.

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Rose Midge Controls (Let's do some brainstorming!)

Insecticides?

Distance (pyriproxyfen) (IGR)
Acelepryn (chlorantraniliprole)
Azatin, Azatrol, NeemAway (azadirachtins)
DeltaGard (deltamethrin)
Demand (lambda-cyhalothrin)

Cultural?

Remove top two inches of mulch?

Notes:

Unfortunately, there are few research entomologists who are doing any work testing the new insecticides for control of the rose midge! In greenhouses, insect growth regulators are pretty good at controlling midges and other fly pests. The new diamide, like Acelepryn, also had fly control abilities, but I've not seen any replicated trials using this molecule. Early studies in Oregon found that regular applications of pyrethroids to wet the top surface of mulch under roses seemed to kill the larvae that drop to the ground to pupate and possibly newly emerging adults.

The Oregon researchers also found that black plastic covering mulch and removal of the top layers of mulch helped manage the midges, but both of these techniques are not very useful in practice.

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Roseslugs

- ❖ Roseslug
- ❖ Curled roseslug
- ❖ Bristly roseslug
- ❖ All are SAWFLIES

Notes:

Notice that the name roseslug is one word which indicates that these pests are not true slugs. They are actually the larvae of a group of sawflies. Ohio roses are commonly attacked by three species of roseslugs. The roseslug or common roseslug, the curled roseslug and the bristly roseslug.

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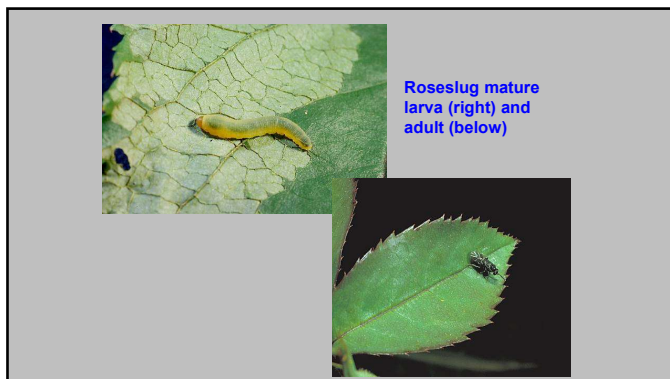
Roseslug larva and damage

Notes:

Usually, roseslugs are first detected when the larvae skeletonize leaves! The larvae eat the leaf epidermis and underlying spongy layer, but they leave the underlying layer of epidermis intact. This is sometimes called "windowpane" feeding. Even if you can't find the larvae (which may have finished their development and dropped to the ground to pupate!), you can often determine which roseslug was present. The common roseslug feeds on the upper leaf surfaces while the bristly and curled roseslugs feed from the lower leaf surfaces. The roseslug and bristly roseslugs are the most common pests in Ohio. The curled roseslug is doubly damaging since the larvae prune small branch tips and burrow into the pith to pupate!

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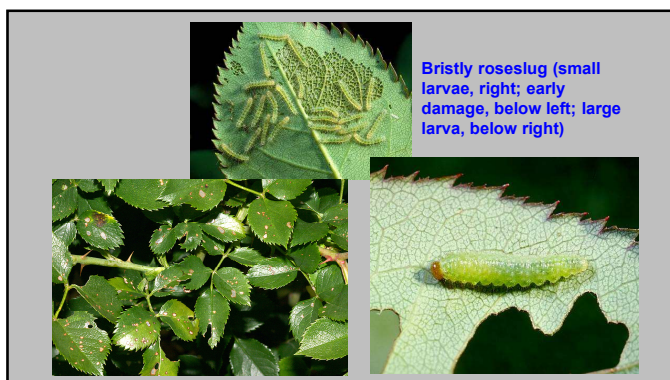
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Notes:
Here is another image of the common roseslug which skeletonizes the rose leaf upper surface. The small black adult is seldom seen unless you are really looking for them.

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Notes:
The bristly roseslug larvae are covered with stout hairs and they feed on the undersides of rose leaves. This species can be doubly damaging because the mature larvae often will burrow down small rose stems to pupate. This can cause small stem dieback.

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Sawfly Controls

Hand pick?

Preventive Insecticides

- Imidacloprid
- Dinotefuran
- Acetamiprid

Curative Insecticides

- Sevin
- Orthene
- Any Pyrethroid (Bifenthrin, Permethrin, Beta-Cyfluthrin)
- Azadirachtin (NeemAway)

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Notes:
Hand picking and crushing is always an option! However, if insecticides are used, remember that these insects are sawflies, not caterpillars. For this reason, the systemic neonicotinoid insecticides (imidacloprid and dinotefuran) are very effective, either as drenches or foliar sprays. When these are used to manage rose midge, roseslugs are also controlled. Since these insects feed on rose foliage, all the foliar, stomach insecticides work quite well. Even horticultural oils and insecticidal soaps will kill these larvae if they are hit by the sprays.

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Thrips in Greenhouses & Urban Gardens

- ❖ Flower Thrips (*Frankliniella tritici*)
- ❖ Western Flower Thrips (*Frankliniella occidentalis*)
- ❖ Greenhouse Thrips (*Heliethrips haemorrhoidalis*)
- ❖ Banded Greenhouse Thrips (*Hercinothrips femoralis*)
- ❖ Chilli Thrips (*Scirtothrips dorsalis*)



Notes:

There are many species of thrips that can occur in urban landscapes and out greenhouses, but the flower thrips are the most ubiquitous. These are the yellowish thrips that are commonly seen in flower parts and on petals, including roses. In the greenhouse, the greenhouse thrips and the banded greenhouse thrips are semitropical species that attack rose foliage. The chilli thrips is the most recent introduction into the United States and is common in Gulf States, and occasionally is imported into Ohio greenhouses and garden centers.

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Thrips feed by piercing plant cells to remove their contents. This causes "blanching" of the feeding area. Thrips also produce small "tar spot" type of excrement.



Adult thrips have bladelike wings with a long hair fringe.

Notes:

Thrips are very tiny, slender insects that are difficult to see without a hand lens. Their damage is most visible on the darker colored petals of roses. As they remove cell contents, the damaged area appears as small blanching spots. With a hand lens, these spots often have dark fecal spots which are called tar spots.

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Western flower thrips nymphs feeding on leaf. Note typical "blanched" areas on leaf and tarspots.



Greenhouse thrips adults are black, but the nymphs are light colored. Note the greasy tarspots on this leaf.



Notes:

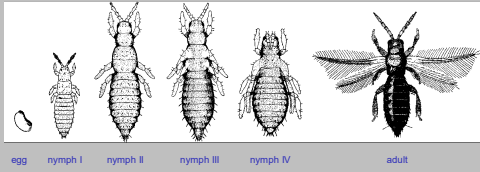
Here are some closeup images of the little blanching areas on a leaf. If you look at the pink flower petals, you will see an adult thrips and a small feeding spot on the lower left area. Greenhouse and chilli thrips generally feed on rose foliage and their bodies are nearly black.

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Thrips Life Cycles

(using gladiolus thrips)



Entomologists that work with thrips often call the first two nymphal instars "larvae," the non-active third instar nymph a "prepupa," and the fourth instar nymph a "pupa."

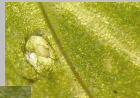
Notes:

Thrips are considered to be in the insect orders that have incomplete life cycles with egg, nymphal and adult stages. However, all thrips have somewhat modified this type of cycle and parts of their development are similar to insects with a complete life cycle. Thrips females insert little oval eggs into leaf, petal or soft stem tissues. When they hatch, the first instar nymph is often called a first larva by thrips specialists. This feeds and molts into the second instar nymph or second larval stage. This second instar larva grows to be the largest form. Upon maturing, the second instar nymph or larva molts into a non-feeding stage, technically, the third instar nymph, which thrips experts call a prepupa. This form is usually active, but in some species the prepupa drops to the ground to find a pupation site. After a short period of time, the prepupa molts again into the fourth instar nymph or pupa. This stage is completely inactive and usually formed in the soil or potting medium. After a few days, the pupa molts into the winged adult which emerges and flies back to the host plant.

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Western Flower Thrips



Egg (above), 1st instar nymph (up right), 2nd instar (below right) and adult (below left).

Notes:

Here are some images of some of the flower thrips stages. The eggs, first instar nymph or first larva is very small and actively feeds on the host plant. The second instar nymph or second larva is much larger and also is found on the host plant.

The adults move rapidly when disturbed and will quickly take flight if they can't find a crevice in which to hide.

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Development Times for Western Flower Thrips

- ❖ **Eggs** – about 3 days at 80-85°F
- ❖ **"Larvae"** (1st & 2nd instar nymphs) – 3-4 days
- ❖ **"Prepupa"** & **"Pupa"** (3rd & 4th instar nymphs) – 3-4 days
- ❖ **Adults** – average 28 days longevity at 85°F and 57 days at 68°F
- ❖ **Fecundity** – 125 to 250 eggs per female, mating is not necessary.

Notes:

Thrips biology makes them difficult to manage. Their eggs and the prepupa and pupae are non-feeding stages, so even systemic insecticides are no use against these stages. To make things worse, the pupae are usually located in the ground and the adults can quickly fly from one plant to another.

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Effective Products 7 Different Modes of Action

Acephate	Foliar	N, G, L
Acetamiprid	Foliar	N, G, L
Clothianidin	Foliar	N, G, L
Dinotefuran	Foliar	N, G, L
Imidacloprid	Foliar	N, G, L
Thiamethoxam	Foliar	N, G, L
Spinosad	Foliar	N, G, L
Abamectin	Foliar	N, G, L
Flonicamid	Foliar	G
Chlorfenapyr	Foliar	G
Pyridalyl	Foliar	G

N=Nursery
G=Greenhouse
L=Landscape

Courtesy – Luis Canas, Ohio State

Notes:

Systemic insecticides that have several weeks of effective residual action are the most effective for managing thrips. Unfortunately, flower thrips are major greenhouse pests and pests of various field crops. Because of this, they are often treated repeatedly which can force populations to become resistant to different categories of insecticides. In this table each color represents a unique mode of action. Notice that many of the insecticides, in pink, are neonicotinoids, so they have the same mode of action. To counteract resistance, entomologists usually recommend alternating modes of action and don't use the same mode of action if control was not achieved after an application of one of these insecticides.



Notes:

Without a doubt, one of the most devastating pests of roses in Ohio is the Japanese beetle! The adults relish dining of the soft, succulent rose flowers and they will also skeletonize the leaves. While there are some cultivars and flower colors that appear to be less preferred, when Japanese beetle populations are high, almost all plants will be attacked!

Japanese Beetle Controls

Traps – NO

Preventive Insecticides

Imidacloprid
Dinotefuran
Acetamiprid
Acelepryn

Curative Insecticides

Sevin
Deltamethrin
Bifenthrin
Azadirachtin (NeemAway)

Notes:

Probably the most effective insecticide that has ever been used to control Japanese beetle adults is carbaryl (Sevin), though the newer systemic neonicotinoid insecticides are quite effective! Basically, these insecticides are not normally acutely toxic to the beetles (they don't hit the ground twitching!). Instead, when the beetles nip a leaf containing one of the neonics, it stops feeding and just sits there! It appears that the beetles may actually die from sun exposure. Bottom line, there will be some minor leaf damage when using the neonics! Unfortunately, neonics are highly toxic to pollinators, so if you are treating open-flower roses, don't use the neonics! The diamide, Acelepryn, is a much better option as it is practically non-toxic to bees.

For those wishing to use an organic insecticide, the azadirachtin (neem) often comes in certified organic formulations. These usually have to be applied every 10 to 14 days while the beetles are active. Traps only bring in more beetles and should be avoided.

Rose Rosette Virus (RRV)

- ❖ Also called Rose Rosette Disease (RRD)
- ❖ *Emaravirus*
- ❖ Transmitted by eriophyid mite (*Phyllocoptes fructiphilus*)

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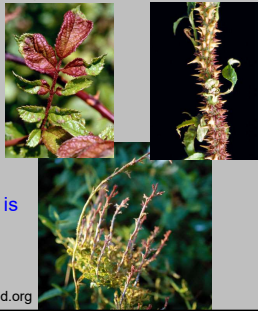
Notes:

I briefly talked about rose rosette virus in the disease section, but I want to emphasize it again here. The most important thing to remember is that this virus is spread by a tiny mite that can balloon, that is carried by the wind, for some distance to infect new rose plants.

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Rose Rosette Disease Symptoms

- ❖ Leaves and twigs produced are a bright, rich, red color.
- ❖ Leaves are distorted and twisted.
- ❖ There may be a proliferation of leaves.
- ❖ The stems grow slowly and produce excessive thorns.
- ❖ There may be so many thorns that there is no stem available to be seen and the thorns are often red-tinged.



Images: Bugwood.org

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Notes:

I briefly talked about rose rosette virus in the disease section, but I want to emphasize it again here. The most important thing to remember is that this virus is spread by a tiny mite that can balloon, that is carried by the wind, for some distance to infect new rose plants.

Knockout roses are highly susceptible to this disease and I see these so called, maintenance free, plants being planted around store and business landscapes, community entrances and other commercial settings. When these plants become infested, there seems to be nobody around to remove them. Thus, they become infection centers for all the other roses in the neighborhood.

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Rose Rosette Virus Control

- ❖ Diseased roses cannot be cured!
- ❖ Remove roses **AS SOON AS DETECTED!**
- ❖ Also remove roots that may send up sprouts
- ❖ Mite is very difficult (=impossible) to control

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Notes:

Infected plants must be removed as soon as there is any sign that infection has occurred. Since there is no cure for the disease, the only option is complete removal as soon as possible. This includes the rose roots which can root graft with nearby roses or sprout new shoots. Many have asked about controlling the eriophyid mite vector, but this tiny pest is very difficult to find and there are very few systemic miticides that have long-term efficacy.

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Notes:

The twospotted spider mite is the most common spider mite pest in the northern States. In more southern States, the southern red mite can be a major fall, winter and spring pest. The twospotted spider mite is a warm-season mite which does best in warm, non-rainy conditions. Adult mites overwinter by hiding in protected places, especially in crack and crevices of landscape stones and timbers. They also do pretty well in the crevices of brick or stone siding when roses are grown next to a house or building! Twospotted spider mites actually don't survive well in most of Ohio landscapes but they are commonly reintroduced each season when bedding plants are purchases and planted among rose plants!

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Mite Controls

Traditional

- ❖ Dimethoate (nursery only)
- ❖ Orthene ? (injection, drenches only)

Cultural

- ❖ Regular syringing

Alternatives

- ❖ Avid (all mites!)
- ❖ Hexygon (eggs & larvae only, spider mites only)
- ❖ Floramite (spider mites only)
- ❖ Sanmite (spider mites only)
- ❖ Forbid (all mites!)
- ❖ Conserve
- ❖ Pyrethroids – NO!??
- ❖ Soaps or Oils

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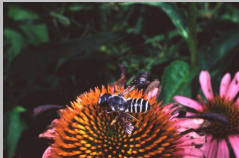
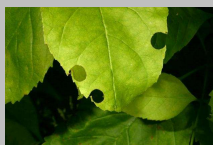
Notes:

Unfortunately, there are NO good miticides contained in the common over-the-counter products! Several products claim spider mite control, but these usually increase the mite problems as they kill natural predators! Most of the true miticides are not "restricted use," so you can purchase them without having to obtain a license. You will have to go to a commercial distributor and purchase a larger container than you probably want to buy! However, many of these miticides are now available on the Internet in smaller quantities.

Twospotted spider mites are subjected to commercial miticides in greenhouses and in field crops! Because of this constant pressure, populations may be resistant to one or more categories of miticides. If you purchase a miticide and it doesn't work, switch to another compound!

Of interest is the fact that all mites are still susceptible to horticultural oils and insecticidal/miticidal soaps! These only work by contacting the mite body.

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Leafcutter Bees



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Notes:

There are several nuisance bees that use roses for nesting and/or making nesting materials! One of the most obvious of these bees is the leafcutter bee. This black bee which is about the same size as a honey bee may have white bands on the abdomen and it collects pollen on the abdomen undersurface. This is a solitary bee that uses a pithy stem to build a brood nest. They also cut circles and ovals of leaves which are used to line their burrows. Basically, when a female bee finds a stem that has an approximate 1/4-inch diameter pith area, she will chew out the pith to a dept of several inches to nearly a foot! Removal of pith can kill the stem! Once the burrow has been cleaned out, the bee cuts a circle and rams this down the burrow to serve as an end cap. She then cuts longer pieces which are used to line the sides of the burrow. Pollen and nectar are then collected and deposited in a chamber. Once completed, she lays an egg in the chamber, cuts another end cap and starts another cell. These bees, while important plant pollinators can damage roses through their leaf-cutting and pith removal!

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Lesser Carpenter Bee

Notes:

The lesser carpenter bee is a tiny blue-black species that commonly uses the smaller diameter pithy stems of roses. This one doesn't line its burrows with leaf fragments, but supplies larval cells with pollen and/or nectar. The pith removal can cause the canes to die back prematurely and such canes are often more susceptible to winter damage.

Both the carpenter bee and lesser carpenter bee is best managed by covering the recently cut rose canes. Many rosarians simply light a wax candle and drip some wax on the cut tips. Others cut short pieces of toothpicks or wooden matches which are shoved into the pith of the cut canes.

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Flecking (spots) caused by rose leafhopper feeding.

Leafhoppers are small, wedge-shaped insects that run sideways and jump if disturbed.



Notes:

The rose leafhopper is primarily a nuisance pest of roses. This wedge-shaped, white to light green insect feeds by piercing the foliage and removing cell contents. This produces a series of yellow to white speckles on the leaves. The nymphs and adults feed on the leaf undersurfaces and are easy to miss as they quickly run or jump and fly if disturbed. This pest often completes two generations per year, occasionally three. The adults that emerge late in the season insert eggs into canes which remain until the following spring. Therefore, pruning and destroying the canes in the early spring, before the eggs hatch can greatly reduce populations and spring damage. The adults are very capable of flight and will commonly reinfest plants during the summer months.

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Leafhopper Controls

Trim back canes, keep out brambles

Preventive Insecticides

Imidacloprid
Dinotefuran
Acetamiprid

Curative Insecticides

Sevin
Deltamethrin
Bifenthrin
Azadirachtin (NeemAway)
Spinosad

Notes:

As previously described, the systemic insecticides, imidacloprid and dinotefuran, can effectively knock out these insects if their residues are in the leaves when the leafhoppers begin to feed. Early applications are therefore recommended. The leafhopper nymphs and adults are also susceptible to many contact insecticides. These usually have to be applied to the leaf undersurfaces where the leafhoppers tend to reside.

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