

Some Natural Methods for Control of Rose Pests

A well-tended rose can be the most satisfying plant to have in a New England garden. What other shrub can produce substantial, glorious, blossoms from the beginning of summer to well into fall, often gracing us with blooms for thanksgiving?

Many people shy away from rose growing. Roses have specific cultivation requirements, which for the uninitiated can be daunting. However, with full sun, two inches of water per week, proper soil preparation and feeding most roses will thrive. Well-tended roses are less likely to be impacted by diseases and insects.

To minimize diseases select rose varieties that are disease resistant. Proper landscape siting, combined with good pruning practices and growing conditions will further alleviate disease problems.

Well-tended roses are also less susceptible to attack by insects. Before they become a problem out of control, know about the insects that are likely to attack roses. Adopt the IPM methods for growing roses. Integrated Pest Management focuses on prevention, avoidance, monitoring and suppression of pests. Employ chemical controls only when prevention measures fail to keep pests below damaging levels.

IPM steps for rose insect pests

Identify insect pests, know, and understand their life cycles.

Be knowledgeable of the beneficials as well as the rose pests. What you think is a pest may actually be a beneficial insect.

Do not try to eliminate pests at the first sign of damage. Beneficials need insect populations to feed on. There may be beneficials present with the pests.

Use the least toxic pest controls available. Control pests by traps or barriers, or removal of pests and infested plant parts.

These methods do not harm beneficial garden life or the environment

If populations warrant pesticides, use the least toxic methods of control.

Because the focus is on prevention, avoidance, monitoring and suppression of pests, use chemical pesticides only where and when prevention measures fail to keep pests below damaging levels.

Beneficials for Control of Pests on Roses

- **Lady beetles**, both adults and larvae.
- **Lacewings *Chrysopa spp.*** Adult green lacewings $\frac{1}{2}$ - $\frac{3}{4}$ inch long, have delicate, light green bodies; large clearwings; and bright golden eyes. The larvae are small, grayish brown, and narrow with pincer-like mandibles. Eggs are laid singly or in small groups on top of fine, silken stalks on plant stems and foliage. Both larvae and adults feed voraciously upon aphids and other small insects, insect eggs, whiteflies and spider mites.
- **Soldier beetles *Chauliognathus spp.*** several species of soldier beetles both adults and larvae are great predators of aphids and other soft bodied insect pests. These beetles with their elongated shape and brown and orange coloring resemble lightning bugs to which they are closely related.
- **Parasitic mini-wasps** the adults of many species are very small from $\frac{1}{100}$ to $\frac{3}{4}$ inch long. The wasps that parasitize aphids ***Aphidius spp.*** actively search for aphids. When found the female inserts her ovipositor into an aphid's body, to lay an egg inside. The wasp larvae will hatch and mature inside the aphid's body. The parasitized aphid turns dull brown in color and appears puffed up and hardened. When mature the adult wasp chews a round hole in the aphid abdomen to emerge leaving an aphid mummy.
- **Predatory mites**, Adult mites are tiny, about half a millimeter in length ($\frac{1}{50}$ inch), and are virtually invisible to the naked eye, they are often smaller than the prey they eat.
- **Minute pirate bug *Orius tristicolor***, is less than one eighth of an inch long, oval to triangular in shape, somewhat flattened and black with whitish marks on

the back. Both immature stages (nymphs) and adults feed on a variety of small prey including thrips, spider mites, insect eggs, aphids, and small caterpillars.

- **Big-eyed bugs *Geocoris spp.*** are small (1/4 inch long), grayish-beige, oval shaped) bugs with large eyes that feed on many small insects including aphids, spider mites, and insect eggs as both nymphs and adults. One big-eyed bug can consume dozens of spider mites in a single day

Major Pests of Roses in New England

Aphids

Aphids are small, soft-bodied insects that can be red, green, yellow, or black. Aphids infest the tips of new growth causing distortion. Except in severe cases, they are not a threat to the plant. Their populations are often kept under control by natural predators.

If the populations build to a level that requires management, the best way to get rid of aphids is to knock them off with a jet of water.

Alternative control measures include the use of insecticidal soaps, Neem

Spider mites are microscopic pests that suck the juices out of leaves. Symptoms of their injury include flecking, discoloration (bronzing) and scorching of leaves. They are most active in hot, dry weather. Roses experiencing drought stress are more susceptible to spider mites. One reason that spider mites become a problem is the use of insecticides that kill their natural predators. The best protection against an invasion of mites is good cultural conditions.

Irrigation and moisture management can be important cultural controls for spider mites. Keep plants well watered and mulched. Periodically washing the plants down with a stiff jet of water applied to the underside of leaves reduces numbers of mites and preserves predators. Predators that feed on mites include lady beetles, minute pirate bugs, and big-eyed bugs and predatory mites.

Other controls-horticultural oils, insecticidal soap.

Rose chafers and Japanese beetles can cause serious damage to rose foliage and flowers.

Physical Removal and Exclusion

One of the easiest ways to remove Japanese beetles from roses is to shake them into a bucket of soapy water early in the morning when the insects are sluggish. Protect highly valued plants by covering them with cheesecloth or other fine netting during the peak of beetle activity. The presence of beetles on a plant attracts more beetles. Thus, by not allowing beetles to accumulate, plants will be less attractive to other beetles.

Do not use pheromone traps for beetles as research shows that the traps attract many more beetles than are actually caught

Chemical control:

Insecticidal soap will kill adult Japanese beetles if sprayed directly on the beetle. It does not have any residual effect.

Neem based products. See more information on this insecticide below.

Rose Chafers

Adults emerge from the ground in late May and early June. The rose chafer prefers sandy soil to lay eggs; plants located on sandy sites are most likely to be attacked. Adult beetles feed primarily on flower blossoms but will also cause skeletonizing of leaves. They feed for three or four weeks, generally until late June. Females lay eggs in the soil, then die shortly afterwards.

Rose chafers contain a toxin that can be deadly to birds, including chickens, and small animals when they eat these beetles.

Control

Gardeners should regularly monitor their gardens starting in late May, especially if there is a history of rose chafer infestations.

Physically remove rose chafers, especially when small numbers are present.

Protect plants by erecting physical barriers, such as a cheesecloth or floating row cover around them. Place the barriers just as rose chafers become active and take them down after the rose chafers are done feeding in late June and early July.

Chemical control:

Neem-based products, insecticidal soap

Rose midge

The rose midge is a tiny fly about 1 mm long that lays eggs in the buds and shoots of roses. The larvae feed and cause bent misshapen or blasted flower buds and withering of the stem tips.

Control - remove and destroy (bury, burn, or put in the trash) all affected buds and shoots. Midge damage usually shows up in July. Because the larvae fall to the soil to pupate, an effective control is to place weed barrier fabric under the affected plants to catch the larvae and prevent them from entering the soil to pupate.

Rose Slug Larvae

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

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

Control

Begin to scout for sawfly larvae in early May. Roseslugs feed through June.

Control sawfly larvae when young, pick them off by hand or dislodge them with a

stream of water

With larger infestations, you may need to spray the leaves thoroughly on both sides with insecticidal soap, Neem, or horticultural oil.

Least Toxic Chemical Controls for Rose Pests

Neem

Azadirachtin is a general use pesticide classified as relatively non-toxic and bears the words "Caution" or "Warning" the label. Azadirachtin is sold to homeowners under the brand name Azatrol, which is an approved organic insecticide.

The key insecticidal ingredient found in the Neem tree *Azadirachta indica* native to South Asia, is azadirachtin, a naturally occurring carbon based (organic molecule) substance. This organic molecule is structurally similar to the insect hormones, which control the process of metamorphosis. Metamorphosis is the passage from larva to pupa to adult. Azadirachtin blocks the insect's production and release of vital hormones for the molting process. An insect that cannot molt does not grow thus its life cycle of that insect is interrupted. Azadirachtin may also serve as a feeding deterrent for some insects. Insect death may not occur for several days, however upon ingestion of minute quantities, insects become sluggish and stop feeding. Residual insecticidal activity is evident for 7 to 10 days or longer, depending on insect and application rate. On roses, Azadirachtin controls whiteflies, aphids, thrips, fungus gnats, caterpillars, beetles, mealy bugs, and leaf miners.

Horticultural Oils

Horticultural oils are highly refined paraffinic oils used to control scale insects, spider mites and other small insects. Because oils work by contact activity, pests are not likely to develop resistance.

Spinosad

Spinosad is a microbial insecticide that is very effective against most caterpillar pests, thrips and sawfly larvae. Some formulations of Spinosad are approved for use by organic gardeners.

Insecticidal soaps

Kill susceptible insects by washing away the protective coating on the surface of the insect and by disrupting normal membrane functions. Good coverage is essential, as the insects must come into direct contact with the spray droplets for the material to be effective. The soaps have no residual activity.