

DIAGNOSING INSECT PROBLEMS

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Some insect problems are easier to diagnose than others. Insects that attack stems, leaves, flowers, or fruit are usually easy to see and fairly easy to identify. Insects that attack the root system are more difficult for two reasons. Often they are small or cryptically colored, making them difficult to find in the soil (white grubs are a notable exception). Second, sampling for soil insects is often very damaging to the planting. Another thing to keep in mind is that above ground symptoms may be similar for several different types of soil problems. Even root diseases or poor drainage may cause symptoms that are superficially similar to those cause by root-feeding insects.

Routine pest scouting is the best way to find and correctly identify potential pest problems before they become acute. Also, there is no substitute for an observant eye and a curious mind. The following is a brief synopsis for diagnosing some common cranberry insect problems.

Stem and Foliage Insects

Several types of caterpillars (“worms”) feed on cranberry foliage. Only some of the most common ones will be mentioned. Other stem and foliage pests include dearness scale, flea beetle, and tipworm.

Blackheaded fireworm. Larva up to about 1/3 inch long; pale tan body with jet-black head. Spins silken webbing to tie leaves together. Two or three uprights may be tied together. Feed by removing the lower leaf surface; this is called skeletonizing. Remaining tissues turn reddish brown. Occur in spring and again during or just after bloom. Older larvae can be swept with insect net. Pheromone traps are available for monitoring adults.

Sparganothis fruitworm. Damage is similar to fireworm. Larva is about the same size, but with a pale colored head and the body has small but distinct spots. Activity may be a bit later in the growing season than fireworm. Monitoring as for fireworm.

Spanworms. Several types of spanworms can attack cranberry. All move in an “inchworm” fashion. Larvae may be brown or green, and from 1/4” long up to almost an inch. Sometimes buds and flowers may be eaten. Sweep sampling is an effective way of monitoring.

Dearness scale. Uncommon. Occurs as small white raised bumps on the stems. Vines become water stressed; stems become dry and brittle; foliage turns reddish. Best scouted by visual observation.

Flea beetle. Adults are small jumping beetles, black in color with a reddish head. They are easily picked up during sweep sampling. They skeletonize leaves in the summer, causing the leaves to turn brown as with fireworm. However, there is no silken webbing.

Tipworm. Our smallest insect pest of cranberry. The larvae are only about 2 mm long, and the adults are about the same size. They feed at the very apical growing point of the upright, causing leaves to cup around the tip, and eventually killing the tip. The best monitoring practice is to clip uprights and examine them under a microscope to find eggs and larvae.

Fruit Insects

In Wisconsin, there are three primary fruit pests.

Blackheaded fireworm. See above for larval description and monitoring. Second generation larvae can feed on the surface of the fruit but rarely do they tunnel inside. The fruit is left with a rough, open scar on the surface and usually becomes infected with secondary pathogens.

Sparganothis. See above for larval description and monitoring. Second generation larvae can feed on the surface of the fruit and will enter to the inside. The entry hole is rather rough in appearance. Fully developed larvae will pupate right in the fruit. Usually associated with the leaf injury described above.

Cranberry fruitworm. Never feed on foliage. Larvae get up to about 1/3 inch long, are pale colored with a pale head. Each larva will tunnel through several fruit. Entrance holes are very circular and clean, and often covered with a silken “window”. A pheromone trap is available for adults. Monitor eggs by looking under the calyx lobes at the flower end of the fruit. Infested berries turn red prematurely; cut these with a knife to examine for larvae or injury.

Soil (Root and Runner) Insects

Cranberry girdler. This moth larva feeds near the soil surface on the roots and runners. The bark is chewed off of runners, causing girdling of the stems and resultant dieback of the uprights. Damage tends to be concentrated in patches from several to many feet in diameter. Damage occurs late in the growing season, and affected spots are often overlooked until the winter flood is removed the following spring. At this time, most of the foliage is lost. Examine runners for small patches of removed bark that appear to be chewed off. Pheromone traps are available to monitor adult moths.

Cranberry (redheaded) flea beetle. See description of the adult in leaf and stem section above. Larvae are small elongate pale cream colored insects that feed in the soil and do damage similar to cranberry girdler. However, the damage is done early in the growing season, and chewed areas of runners attempt to callous over, and may put out very weak uprights sprouting from near the area of damage. Larvae are very difficult to monitor.

White grubs. In Wisconsin, there is only one type of white grub that damages cranberry; this is the larva of the June beetle *Phyllophaga anxia*. The grubs live in cranberry soil for about three years. Because of their large size and typical C shape, they are easily diagnosed. In heavily infested areas the vines will appear as if affected by drought because the roots will have been removed by grub feeding. The cranberry sod will be very loose and easily lifted because there are few roots to anchor it to the soil. The grubs will usually be found right under the sod on the soil surface, or within the top few inches of soil.

General Tips for Insect Diagnosis

- Routinely use standard insect monitoring techniques.
- Be observant.
- Some insect activity occurs at night; night monitoring may sometimes be necessary.
- If you find something that you can't identify, use the university's insect diagnostic lab, which is in the Department of Entomology in Madison. The best approach is to take the specimens in to your county Extension office. They will assist you in filling out the appropriate diagnostic form and will send the materials into the lab for you. You will usually receive a response within one week. There is no charge for this service.