



Black Vine Weevil (and other root weevils)

The black vine weevil, has been reported as being accidentally imported from Europe and was first detected in Connecticut in 1910. However, there is evidence in the scientific literature that this species was actually detected in the 1830's. It was probably introduced along with some plant material brought from Europe. Mainly through movement of ornamental plants, the black vine weevil has been spread across much of northern North America from Maine to the Carolinas and west to Washington and Oregon. It occurs in all counties in Ohio.



There are two close relatives of the black vine weevil, the strawberry root weevil, and the rough strawberry root weevil. All of these weevils are collectively called root weevils because their larvae feed on a variety of plant roots. The strawberry root and rough strawberry root weevils are often found in seedling nurseries, nursery poly-houses and occasionally in small fruit farms. Neither is very important in the landscape in Ohio.

Plants Attacked

Adult black vine weevils will feed on over 100 different kinds of plants including trees, shrubs, vines and flowers. The preferred hosts seem to be *Taxus* (yews), hemlock and various rhododendrons. *Taxus capitata* seems to be particularly susceptible to attack. This pest is often called taxus weevil by the nursery.

Damage

Adults that feed along leaf margins produce typical crescent shaped notches. Careful searches should be made to try and locate specimens since several other weevils and some caterpillars can produce this same type of notching. Moderate to light notching seems to have little effect on-plant health. The legless larvae prefer to feed on young tender roots of *Taxus*, rhododendrons and hemlock. If young roots become scarce or the soil becomes overly moist the larvae will move to large roots near the base of the plant. Large larval populations or moist soils cause feeding on the plant stem and the plant may be girdled.



Injury to *Taxus* has appeared throughout Ohio, particularly in northeastern counties where nurseries are located on sandy loam soils. This pest can also reach epidemic populations in polyhouses where liners and perennials are being grown. Occasionally, hundreds of field grown plants are killed with dramatic suddenness. Perennial producers occasionally open their polyhouses in the spring, only to find that many of the plants are dead because all of their root systems have been eaten away.

Description and –Life Cycle

Black vine weevils are oblong oval in shape, about 1/2-inch long and have a short, broad snout with elbowed antennae. The body is slate grey to blackish brown and the wing covers have numerous small pits and short hairs. This pest is difficult to distinguish from other Otiorynchus weevils. The strawberry root weevil is usually half the size of the black vine weevil, and more brown in color. The rough strawberry root weevil is only slightly smaller than the black vine weevil but the collar just behind the head, the pronotum, is heavily pitted. Only females are known in North America, and only one generation occurs outdoors annually in Ohio.

Female weevils emerge from soil pupation chambers late May to early July. These weevils must feed on plant material for 21 to 45 days before they are ready to lay eggs. After the preoviposition period has passed, the females place several eggs each day into the soil or leaf litter nearby suitable host plants. The weevils hide during the daytime at the base of plants or in mulch and

leaf litter near food plants. Adults may live 90 to 100 days and usually lay 200 eggs during this time. The eggs hatch in two to three weeks and the small C-shaped; legless larvae feed on plant rootlets. The larvae grow slowly over the summer, molting five to six times. By late fall the larvae have matured and are about 5/8-inch long. The mature larvae enter a quiescent prepupal stage in an earthen cell and pupate the following spring. A single generation occurs each year.

These weevils can not fly but they are very active walkers. They are easily transported in potted plants or transplants using a soil root ball.

Control Hints

These weevils are difficult to control once established because of their nocturnal behavior, the subterranean habits of the larvae, and the lack of natural predators or parasites.

Strategy 1: Habitat Modification - Egg and larval survival is helped when soil moisture is moderate to high in July and August. Heavy mulches also help maintain critical moisture levels, Remove excessive mulch layers and do not water plants unless necessary.

Strategy 2: Biological Control Using Parasitic Nematodes- The entomopathogenic nematodes, *Steinernema* and *Heterorhabditis* spp., have been effective for controlling black vine weevil larvae, especially in potted plants. Sufficient water must be used during application to wash the infective nematodes into the soil and root zone. If the nematodes are to be used in landscape plantings, remove as much of the mulch as possible and thoroughly wet the remaining thatch and soil before and after the nematode application.

Strategy 3: Soil Drenching with Insecticides - This technique has not worked well for larval control unless moderately soluble, long residual insecticides are used. Most pesticides get bound up in the organic matter under plants and never reach the larvae.

Strategy 4: Foliar Sprays of Insecticides - Since the adults are active after dark, the most common method of control is to place a stomach poison on susceptible plant foliage. Because adults are active for a long period, several sprays may be needed. Early applications are encouraged so that adults are affected prior to their egg laying period.

Information obtained through the Ohio State Extension Factsheet HYG-2016-95



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