



FactSheet

Extension

Ohio State University Extension Fact Sheet

Entomology

1991 Kenny Road, Columbus, Ohio 43210

Black Vine Weevil (and other root weevils)

HYG-2016-95

David J. Shetlar

The black vine weevil, *Otiorhynchus sulcatus* (Fabricius), 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, *O. ovatus* (Linnaeus), and the rough strawberry root weevil, *O. rugosostriatus* (Goeze). 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 industry. It commonly infests containerized perennials in greenhouse and polyhouse production settings. Occasionally, adults and larvae will attack potted house plants, especially ones placed on the porch for the summer.

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 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 *Otiorhynchus* 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.

In the warmth of house plant pots or nursery polyhouses, the larvae may pupate in January or February and the adults emerge in March or April.

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. Excessively damp soils in the fall also force larvae to move

up the base of the plant where girdling can occur. Properly maintain rain down spouts and provide for adequate drainage of soil around plants.

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. Applications of the nematodes in landscapes has produced variable results.

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. Complete drenching of potted plants has been effective. See Bulletin 504 for currently registered pesticides that can be used in this manner.

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. See Bulletin 504 for a listing of currently registered pesticides.

Acknowledgment

This Fact Sheet was edited from an original by Dr. R. L. Miller, Extension Professor Emeritus, D. G. Nielsen, Professor Emeritus of Entomology, and A. W. Smith, Graduate Extension Research Associate.

NOTE: Disclaimer - This publication may contain pesticide recommendations that are subject to change at any time. These recommendations are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. Due to constantly changing labels and product registrations, some of the recommendations given in this writing may no longer be legal by the time you read them. If any information in these recommendations disagrees with the label, the recommendation must be disregarded. No endorsement is intended for products mentioned, nor is criticism meant for products not mentioned. The author and Ohio State University Extension assume no liability resulting from the use of these recommendations.

All educational programs conducted by Ohio State University Extension are available to clientele on a nondiscriminatory basis without regard to race, color, creed, religion, sexual orientation, national origin, gender, age, disability or Vietnam-era veteran status.

Keith L. Smith, Associate Vice President for Ag. Adm. and Director, OSU Extension.

TDD No. 800-589-8292 (Ohio only) or 614-292-1868

| [Ohioline](#) | [Search](#) | [Fact Sheets](#) | [Bulletins](#) |