



Black Vine Weevil *Otiorhynchus sulcatus* (Fabricius)

Injury: The black vine weevil (BVW) is a pest of over 100 landscape plants including taxus, hemlock, rhododendron, euonymus, azalea andromeda and many herbaceous species. It is a problem in nurseries as well as in home ornamental plantings.

The most severe damage is caused by the grubs (larval stage) which feed on the roots and underground stems. They may girdle the root crown. Larvae even feed on roots of houseplants that spent the summer out of doors near infested plants. The symptoms are of general plant unthriftiness including stunting and yellowing or off-color foliage. Root feeding often results in death of the plant. Plants may fail to put out new growth in the spring as a result of the root injury, or may put out the first flush of new growth, and subsequently die. Unfortunately, it is when plants are close to death that home gardeners often first notice the problem.

Adult weevils feed on foliage, chewing out characteristic notches (**Fig. 1 & 2**), and while foliar damage is often not severe, it can be unsightly.

Adults may also be considered nuisance pests when found indoors, especially during the winter months. Some adults overwinter, seeking shelter near foundations and occasionally wander inside. Removing by hand when seen is the best control for a few individuals inside the home.

Description: The adult is a black wingless weevil (snout beetle) about 3/8" (10 mm) long (**Fig. 3**). All of the weevils are females and they reproduce parthenogenetically (reproduction by development of an unfertilized egg). Since the weevils do not fly, they disperse chiefly by walking, although they may be transported by man with infested plant material. The weevils feed at night and hide under leaf litter or in the soil during the day. When disturbed, the adults feign death.



Fig. 1. The arrows indicate feeding injury of the BVW creating the characteristic notches on a rhododendron leaf. (Michael Masiuk, Penn State University Cooperative Extension)

The grub is a legless, white (with a brown head) larva with a wrinkled c-shaped appearance (**Fig. 4.**). It is found in the soil under host plants.

Life History: There is one generation of the black vine weevil each year. Adults usually emerge between mid-May and late July and live for several months. A few adults may overwinter and be found in early spring. **Weevils feed for 3-4 weeks before females begin to deposit eggs.** Eggs are dropped indiscriminately to the ground under the plants (as many as 500 per female!) over her entire life. If houseplants are placed under shrubs during the summer, eggs may be deposited on the soil of the containers. Ten to 14 days later the grubs hatch and burrow down into the soil searching out roots to feed on.

Larval feeding occurs through the growing season and when colder temperatures arrive, grubs burrow deeper in the ground to overwinter. They resume feeding the following spring for a short while before they enter the pupal stage. Pupation lasts about 1 month and adults are most abundant from early June to mid-July.

Management: Monitor plantings: Look for symptoms of feeding injury by adults. Injury (notches in leaves) will be easy to see on broad-leaved evergreens such as rhododendron, but may be hard to find on narrow-leaved ones such as Taxus. Weevils may be feeding on leaf edges, especially near the trunk. Use a flashlight at night (adults are nocturnal) during early to mid-June to inspect plants for the presence of weevils. Or use a burlap cloth gathered in folds around the base of plants which provide a hiding place for adults during the daytime; gently unfold to see if adults are present. Ideally you want to detect the start of adult emergence activity so that you can accurately time a spray for adults when most have emerged, but before egg laying begins.

Pit fall traps (you can easily make one by placing a paper cup in the ground, with the rim at soil level, and bending a piece of paper to make a cone in the top (**Fig. 5 & 6**) so the insect slides down into the cup) or beating sheets (white cloth placed under the plant and the foliage is "beat" with a stick) are also sometimes used to monitor adult activity.

Check traps at least twice a week for insects (or other critters that may accidentally fall in).

Hand removal of weevils can be effective especially in small plantings or for individual plants. Where possible, quarantine plants with leaf notches.

Treat for the adults: If needed (on azalea, rhododendron, *Taxus*/yew), treat with acephate or lambda-cyhalothrin. At three-week intervals beginning early May (148-400 GDD) if overwintering adult weevils are present; or in early June and at three week intervals for the rest of growing season¹. Apply full coverage spray to foliage and the soil beneath plants.

For information on utilizing GDD contact Cornell Cooperative Extension – Suffolk County or visit the CCE web site

<http://ccesuffolk.org/assets/Horticulture-Leaflets/Using-Growing-Degree-Days-for-Insect-Pest-Management.pdf>

Some rhododendrons and azaleas show resistance to weevil feeding. Those that have a rolled edge may be difficult for weevils to feed upon.

Insect parasitic nematodes are a promising biological control for larvae. They provide an alternative to chemical control; but certain

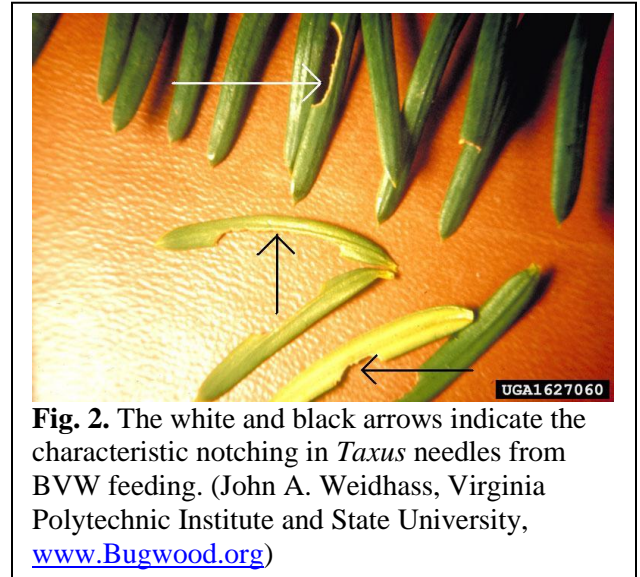


Fig. 2. The white and black arrows indicate the characteristic notching in *Taxus* needles from BVW feeding. (John A. Weidhass, Virginia Polytechnic Institute and State University, www.Bugwood.org)



Fig. 3. An adult black vine weevil. (Joseph Berger, www.Bugwood.org)

conditions must be met to have success with them. To be effective there must be adequate soil moisture and temperatures must be warm enough in the top 5 inches of soil (60 degrees F. or higher) for the nematodes to actively search out the larvae.

Research has shown that certain strains of the *Heterorhabditis* sp. nematodes are very effective if the above conditions are met. Nematodes need to be applied when the larvae are present in mid to late summer. They have been recommended especially in warm greenhouse container culture for root weevil control.

If houseplant roots are found to be infested with larvae, discarding the plant may be the best practice. Washing off the roots and repotting might be an alternative, but success will depend on the amount of damage already done (often too late by the time one notices it).



Fig. 4. The grub stage of the black vine weevil. (Peggy Greb, USDA Agricultural Research Service, www.Bugwood.org)

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References: "IPM for the Black Vine Weevil on Ornamental Plants," Shelia Darr, *IPM Practitioner*, Volume XIII, Number 5/6, May/June 1991; *Monitoring Adult Black Vine Weevil and Strawberry Root Weevil in Field grown crops using burlap traps*, Cooperative Extension, University of Massachusetts, Prepared by Dr. S.M. Mulgrew; "Nematodes Control Root Weevils," S. Paul Wilhelm, President, Nematoc. in Readers Column: *IPM Practitioner*, IX(2), Feb. 1987; "Black Vine Weevil Management in Nursery Plants," M.W. Stimmann, H.K. Kaya, T.M. Burland, J.P. Studdert, *California Agriculture*, January-February 1985.

¹Timing of insecticide applications obtained from *2012 Pest Management Guidelines for Commercial Production and Maintenance of Trees and Shrubs*

Pesticide recommendations obtained from: *Part II Guide to Pest Management around the Home – 2009-2010 Pesticide Guidelines*, Cornell Misc. Bulletin S74II. Contact Cornell Cooperative Extension – Suffolk County for Information on ordering copies.

The Pesticide Management Education Program (PMEP), in cooperation with the New York State Department of Environmental Conservation (NYSDEC), maintains a web site with a searchable database for pesticide products currently registered in New York State. Individuals who have Internet access can locate currently registered products containing the active ingredients suggested above at <http://pims.psur.cornell.edu/index.php> (NYS PIMS).

This publication contains pesticide recommendations. Changes in pesticide regulations occur constantly and human errors are still possible. Some materials mentioned may no longer be available, and some uses may no longer be legal. All pesticides distributed, sold or applied in New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension Specialist or your regional DEC office. Read the Label before Applying Any Pesticide.

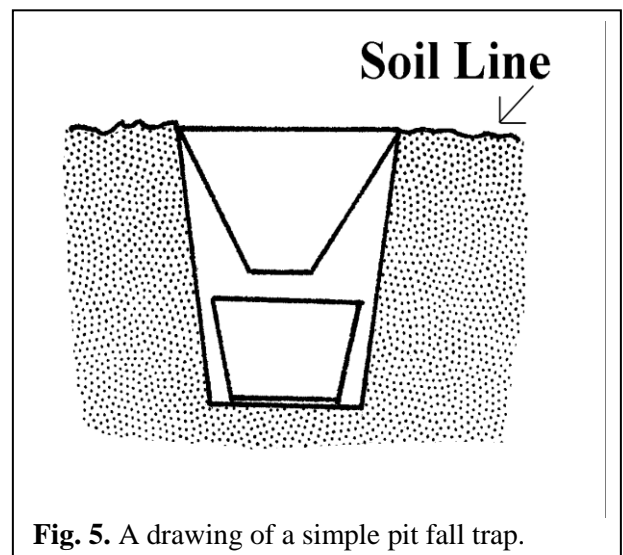


Fig. 5. A drawing of a simple pit fall trap.

TK: 1/2010 AW: 3/2012