



Woody Ornamental IPM

Black Vine Weevil

The black vine weevil, *Otiorhynchus sulcatus* (Fabricius), is a serious pest in nurseries as well as in home ornamental plantings in Pennsylvania. While the adult weevils feed on foliage, often resulting in an unsightly appearance, the more serious damage is done by grubs (larval stage), which feed on the roots and may girdle the main stem often killing the plant.



Plants Attacked

Adult will feed on over 100 different kinds of trees, shrubs, vines, and flowers in Pennsylvania landscapes. They have a strong preference for *Taxus* (yews), and various species of rhododendrons, but can also be found on *Tsuga* (hemlock), *Pieris japonica* (Japanese andromeda), *Euonymus*, *Kalmia* (mountain laurel) and *Ilex crenata* (Japanese Holly). Occasionally, this pest will feed on herbaceous plants including houseplants placed outside during the summer.



Black Vine Weevil adult



Black Vine Weevil larvae



Black Vine Weevil eggs

Images courtesy of David Shetlar

Insect Identification

Adults are 3/8" long, oblong-shaped, with a short snout, and elbowed antennae. Their bodies are a dull, slate gray to brownish-black color, and their wing covers have numerous small pits with small patches of short golden hairs. All adults are female and unable to fly. The legless, C-shaped larvae are cream colored with shiny brown heads and measure 5/8" long at maturity. Black vine weevil eggs, which are initially white but turn brown as they mature, are laid in the soil or leaf litter at the base of the affected plant.

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Life History

Winter	Immature larvae spend the winter in the soil. On occasion, adults overwinter.
Spring	In early spring, the larvae mature and feed on roots. The larvae pupate inside an earthen chamber before emerging as adults from late May through June. Adults weevils must feed on plant material for 21-45 days prior to egg laying.
Summer/Fall	Adults begin egg laying in July, depositing an average of 200 eggs in the soil or leaf litter during their 90-100 day lifespan. Eggs hatch in 2-3 weeks and the larvae begin to feed on small plant rootlets. As larvae mature, they begin to feed on larger roots and underground stems. Maturing larvae continue to feed on roots until the soil temperatures drop, signaling them to move deeper in the soil, where they overwinter.

Damage Symptoms

Adults feed along the leaf margins leaving distinctive hemispherical notches. Several other weevils and some caterpillars can produce similar notching, so efforts should be made to locate adults for positive identification. While the foliar feeding is often not severe, it can leave the plant looking unattractive. Larval stage feeding can have more serious consequences for the host plant.

Monitoring

Look for the characteristic marginal notching on new foliage. Monitoring should be directed to the lower foliage. Since the weevils crawl and cannot fly, the foliage on the lower portion of the plant will be injured first. Black vine weevil adults feed at night and hide at the base of plants during the day. Placing a 6" x 6" board on top of the mulch beneath the affected plant or loosely wrapping a piece of burlap around the stem will provide a place for the adults to hide and can be checked easily during the day to determine early season adult activity.

Management Options

Mechanical	Hand removal of adults can be effective when utilizing the 6" x 6" board or burlap, especially on small plantings or individual plants.
Biological	The entomopathogenic nematodes, <i>Steinernema</i> and <i>Heterorhabditis</i> spp., have been effective for controlling larvae, especially in potted plants. Applications of these nematodes in landscapes have produced variable results.
Cultural	Egg and larval survival are 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. Some rhododendrons show resistance to weevil feeding. Varieties with a rolled leaf edge may be difficult to weevils to feed upon.
Chemical	Treat infested plants when larvae are active during late June through July. Chemical treatment after larvae reach one inch is ineffective, since larvae stop feeding and begin to prepare for overwintering.