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Black Vine Weevil in Virginia

Authored by Theresa A. Dellinger, Diagnostician, and Eric Day, Lab Manager, Insect Identification Lab, Entomology, Virginia Tech

Introduction

Adult black vine weevils (*Otiorhynchus sulcatus*) feed on a wide variety of evergreen, deciduous, and herbaceous plants. The larval stage is destructive on yew (taxus), hemlock, rhododendron, cherry laurel, and other broad-leaved evergreens. Both adults (Fig. 1) and larvae (Fig. 2) will sometimes feed on strawberry, impatiens, hostas, and other ornamental plants.

Figure 1. Adult black vine weevil (Kent Loeffler, Cornell University, Bugwood.org).

Figure 2. Black vine weevil grub (Peggy Greb, USDA ARS, Bugwood.org).

The black vine weevil is a pest in Asia, Europe, and North America. Movement of infested nursery stock is thought to transport this pest into new areas. Black vine weevil is found predominantly in the northern portions of the United States, but its range extends into Virginia.

Identification

Black vine weevil adults are black, roughly 0.5" (13-15 mm) long weevils with short, broad snouts and elbowed antennae (Fig. 1). The head is narrower than the rest of the body. The thorax is rounded and somewhat bumpy in appearance. The wing covers are broad, well-rounded, and textured with corrugated ridges down the length of the back and scattered patches of yellow hairs. Sometimes soil on the body will make adult weevils appear grayish or reddish. Adults cannot fly because their wing covers are fused together. The larvae are white C-shaped grubs with well-developed brown heads and no legs (Fig. 2).

Life History

Larvae spend the winter feeding on roots deep in the soil; they pupate in May. Adults dig their way out of the ground in mid-May and crawl up the host plants to feed. Feeding occurs mostly at night with adults hiding in dark recesses on the plants or on the soil during the day. When disturbed, they quickly drop on the ground and act as if they were dead. After one to two weeks of feeding, adults return to the ground to lay eggs. They alternately feed and lay eggs over several months. Occasionally, a few adults can be found in houses during the winter, but most adults die in the fall. There is only one generation per year.

Damage

Adult weevils chew irregular notches along leaf margins, causing damage that is often confused with a disease or mechanical injury (Fig. 3). These characteristic notches can be used as an early indicator of larval populations in nearby soil. Adults cut notches on the margins only; they never make holes in the center of the leaf (Fig. 4). On yew, the needles closer to the main trunk and down inside of the shrub will show notching and feeding scars. Marginal leaf notching on broadleaved evergreens resembles damage caused by similar root weevils such as the two banded Japanese weevil and

Fullers rose beetle. Adult black vine weevils are largely nocturnal and may avoid notice on host plants. Black vine weevil larvae in the soil actually cause more damage than the adults by chewing on the roots of infested plants.

Figure 3. Feeding damage by adult black vine weevil (Jim Baker, North Carolina State University, Bugwood.org).

Figure 4. An adult black vine weevil notching the edge of a leaf (Whitney Cranshaw, Colorado State University, Bugwood.org).

Management

Scouting: Monitor host plants for the distinctive leaf notches made by feeding adults. Examine yews by looking for signs of adult feeding on needles near the center of the plant, near the main trunk or stems. Adult weevils usually hide in the branch crotches under heavy clumps of needles. On other host plants, look for feeding adults on the foliage or on the soil surface under the plants using a flashlight at night. The best time of year to look is when adults are active in May and June.

Cultural Control: Purchase pest-free nursery stock whenever possible. Leaves should not have any notched leaves, which may indicate black vine weevil larvae are present in the container's soil.

Nonchemical Control: Beneficial nematodes in the soil work well for control of black vine weevil. Two species recommended for control are *Heterorhabditis bacteriophora* and *Heterorhabditis megidis*, both of which are commercially available.

Chemical Control: If adult black vine weevils are found or freshly damaged leaves are present, apply a systemic insecticide such as imidacloprid as a soil drench to the root zone of affected plants in April or May to kill any larvae and adults still in the soil.

A foliar insecticide treatment aimed at the adult weevils as they move out of the ground and onto host plants may help in some cases. It is critical to apply a foliar insecticide after most adults have emerged, but before they begin laying eggs. The second or third week of June is an optimal treatment time. Treat the soil surface and the main stems and branches of the host plant thoroughly. See the Virginia Pest Management Guide for Home Grounds and Animals or Horticulture and Forest Crops for specific insecticide recommendations depending on homeowner or commercial production use.

Note

No male black vine weevils have ever been found; this species of weevil, like a few other insects, is able to reproduce without fertilization. Adult females lay eggs that produce more females.

Revision

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