Crop Pest

Black Vine Weevil

Otiorhychus sulcatus

Description

Black vine weevils are generalist pests that attack over 100 species of plants. In their larval stage they live underground and feed on young roots, making this the most damaging stage of this pest. The larvae are white and grow up to half an inch long. Adults are generally grayish black with a characteristic 'snout' used for feeding on leaf edges. Adults reach 1 inch in length and feed at night. This nocturnal behavior makes them difficult to control once established. They also lack natural predators, and the females reproduce parthenogenically, so populations can grow very quickly if not checked. Prevention should be the goal for management.

Target Crops

Although known to attack many different crops in both greenhouse and field settings, susceptible plants are hops, grapes, azaleas, rhododendrons, cyclamen, yew, hemlock, begonia, fuchsia, bergenia, impatiens, primrose and sedum. One early sign of black vine weevil damage in container plants is wilting, even when watered.

Life Cycle

Black vine weevils have one generation per year. Larvae emerge from eggs, feeding on roots throughout the summer and fall, and overwinter in pupal cases. Once spring arrives, late May to early July, they pupate and emerge as adults ready to feed on leaf edges. In about 2 weeks, they start laying their eggs. One female can lay up to 200 eggs during its 3-month lifetime. Larvae hatch after 10 days and begin to feed on root systems, continuing the life cycle.

Beneficial Insect Control

Beneficial nematodes are effective for beetle larvae. These parasitic roundworms actively seek out grubs in the soil. Two species of entomopathogenic nematodes are used for weevil control, Heterorhabditis bacteriophora and Steinernema kraussei. These work across a wide range of crops and potting media. Sufficient water must be used during application for the nematodes to penetrate the soil and reach the root zone. *S. kraussei* are effective between 40ºF to 86ºF while *H. bacteriophora* works best in soil temperatures above 70ºF. Multiple applications may be required, depending on the extent of the larval infestation and their age.

While nematodes will not kill adult Black Vine Weevils, they will lower beetle populations by decreasing the larval stages. Nematodes can be used in an irrigation system. Refer to our Beneficial Nematode Tech Sheet for rates and further application information.

Insecticide Options- Use in rotation for best results.

For adults on foliage

For a quick knockdown, use Pyganic with Pyrethrin for an organic adulticide.

AzaGuard, Molt-X, and Azatin O can also be used for Black Vine Weevil management. The active ingredient, azadirachtin, has been shown to reduce oviposition and increase laying of nonviable eggs. It can also increase larval mortality by up to 46%.

For larvae/grubs below ground

Mycoinsecticides containing entomopathogenic fungal spores. These include Botanigard, Mycotrol, NoFly and PFR 97.

LalGuard M-52 OD used as a drench is especially good for the soil dwelling grub stage. It contains the pathogenic fungus *Metarhizium brunneum*. Once this product is drenched into the soil, and comes in contact with the insect, the spores will then attach, germinate and grow, causing the larva and the adults to die within 3-7 days. LalGuard M52 requires temperature above 59ºF to infect vine weevil larvae.

Cultural Control Tips

Monitoring is key to successful management. Due to their nocturnal behavior and subterranean habitat, growers may not notice this destructive pest until the they have suffered from significant crop losses. Scout for adults under leaf debris or in soil under benches in the evening. For container plants, remove susceptible varieties from pots and examine the root systems for larvae. When located, remove adults by hand.

Site selection and physical barriers are helpful in controlling adult weevils which are flightless and travel short distances. Wrapping sticky traps or tanglefoot around base of stems will restrict adult movement. Prevention should be the goal for management.

One strategy for vine weevil management is to reduce excess soil moisture, which increases egg and larval survival. Remove heavy mulches and do not water plants unless necessary to create an unsuitable habitat. Black Vine weevil hide in yard debris during the day, removal of excessive crop debris can help disturb their habitat. Removing weed patches which are another food source will also disrupt their life cycle.

It's always a good idea to check with your state department of agriculture for regional Black Vine Weevil information, control options, and pest levels in your specific area.

Vine Weevil, Otiorhynchus sulcatus (Coleoptera: Curculionidae), Management: Current State and Future Perspectives, Annual Review of Entomology January 2022, by Tom W. Pope and Joe M. Roberts

Black Vine Weevil (and Other Root Weevils), Ohio State University Extension, by David J. Shetlar and Jennifer E. Andon, Dept. of Entomology. April 20, 2015.

Weeding out the Weevil, Greenhouse Management, by Raymond Cloyd, January 2015.