

ROOT WEEVILS ON ORNAMENTALS

Several species of small root-feeding beetles (root weevils) are damaging to several ornamental species in our area. Damage from these weevils at times is quite severe but is generally localized. Localized in the sense that one nurseryman's or homeowner's planting may be heavily damaged while a nearby similar planting may only experience slight damage.

Ornamental plantings near forested areas or native brush are more likely to be damaged. Native vegetation provides an ideal habitat for the development of root weevil populations. Weevils migrate from such areas into adjacent ornamental plantings and become pests. Root weevils do not fly so their dispersal capacity is limited. This also accounts for the observed localized nature of most root weevil damage.

This article will discuss three species of root weevils. The strawberry root weevils are in the genus *Otiorhynchus* and include two species of general significance: the black vine weevil, *Otiorhynchus sulcatus* and the strawberry root weevil, *Otiorhynchus ovatus*. The third species of significance in our area is the obscure root weevil, *Sciopithes obscurus*. The two *Otiorhynchus* species will be discussed together because of the similarities between them.

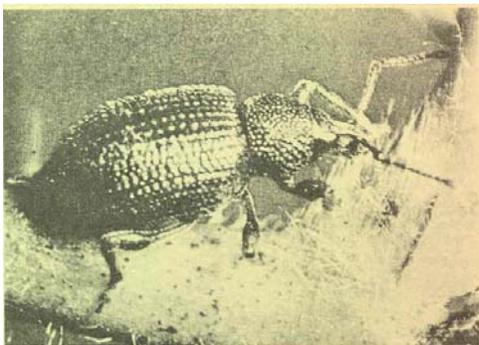


Figure 1. The black vine weevil,
Otiorhynchus sulcatus



Figure 2. The obscure root
weevil, *Sciopithes obscurus*

DISTRIBUTION

Strawberry root weevils (SRWs) are found in most of the tri-state area. The obscure root weevil (ORW) is found only west of the cascades ranging from Northern California up into British Columbia.

APPEARANCE

The immature stages (larvae) of all three weevils are very similar in appearance. They are legless, whitish, grub-like soil inhabiting insects about 1/4 to 1/2 inch in length when full grown. Adult SRWs are generally black in color with some individuals appearing light brown to chocolate color. The black vine weevil (Figure 1) is the largest of the three species and generally has small patches of yellow on its back. SRWs are about 1/5 to 2/5 inch in length. Adult ORW, however, are predominately gray in color. They are about 1/4 inch in length and have a wavy brown line across their backs (Figure 2)

TYPE OF DAMAGE

All three root weevil species are damaging to the roots of their host plants. When small, they feed on the smaller fibrous roots, but as they mature, they feed on larger roots and at times girdle them. Adult root weevils feed on leaves confining themselves usually to the leaf margin thus producing a scalloped or notched effect.

ORNAMENTALS ATTACKED

Species attacked include: Rhododendron, Azalea, Taxus (Yew), Camellia, Viburnum, Arborvitae and Rose. Non-woody plants such as Begonia, Lily of the Valley, Primrose and Peony also have been reported to be damaged.

LIFE CYCLE

All three species pass through the fall and winter as larvae in the soil feeding on roots of their host plants. Pupation occurs in the late spring with adult SRWs emerging in May and adult ORW in early June. Egg laying begins shortly after emergence with SRWs depositing their eggs near the base of the host plant on the soil surface. ORW tie leaf edges of their host plants together and lay eggs in the prepared folds. Adult SRWs are usually active from late May through July and ORWs June through August. Eggs hatch in a few weeks and young larvae work their way down into the root zone and begin feeding. All three root weevil species have one generation per year.

CONTROL OF ROOT WEEVILS ON ORNAMENTALS

The use of Aldrin and Chlordane insecticides is currently under review by the Environmental Protection Agency for possible cancellation. This cancellation order does not affect the current usage of these compounds but changes in the registration may be forthcoming. A change in the registration status of these compounds would eliminate these from control recommendations. Users of these chemicals should keep themselves informed as to the status of the registration of these particular chemicals by contacting their local Agricultural Extension Office.

Control procedures against these insects can be directed at both the larval and adult stages. Control of both stages will be discussed. Identification of the species causing damage to your planting is important because of the differences in effectiveness of chemicals against SRWs and ORW.

Larval Control: Aldrin and chlordane are not effective against the larvae of the ORW. Control of this insect is directed against the adults. These insecticides are, however, effective against larvae of SRWs when applied at either time of planting or to already established plants which show new leaf-notch injury. Insecticides for soil treatment before planting should be applied either as sprays, dusts, or granules on the soil surface and worked thoroughly into the top six inches of the soil. Use one of the insecticides at the suggested rate in Table 1. Established plants are treated in a similar manner with the insecticide being worked into the top 2" of soil if possible. Be sure the insecticide is worked into the soil and not into the mulch around the plant. This application when made in late May or June for SRW will also help control adults before they lay eggs or larvae in the soil after egg hatch.

Table 1. Insecticide required for 100 square feet of surface area for pre-planting or surface treatment

Insecticide	Granules or Dust	EC or WP
Aldrin	4 oz – 5%	5 Tsps. – 25%
Chlordane	4 oz – 10%	5 Tsps. – 44%

Adult Control: ORWs can only be controlled as adults because of the ineffectiveness of the available persistent soil insecticides. Timing of application against adults is consequently extremely important. Application of insecticides should be made in early June against adult ORW soon after their emergence and before egg laying begins, if possible. Later applications at times are needed depending upon the extent of the infestation. Applications of malathion or diazinon to the foliage and the ground around the plant provide some degree of control of adults. Applications are best made in the evening because root weevil adults feed at night and are not on the foliage during the daylight hours. To prepare the spray use malathion 57% emulsifiable concentrate or diazinon 25% emulsifiable concentrate at a concentration of 1 tablespoon per gallon of water. Dusts of these compounds also can be used containing 4% or 5% active insecticide.

Pesticide Use - Due to constantly changing laws and regulations, no liability for the suggested use of chemicals in this Newsletter is assumed by the ONW Newsletter. Pesticides should be applied according to label directions on the pesticide container.

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