

BIOLOGY AND CONTROL OF THE OBSCURE ROOT WEEVIL ON RHODODENDRON

The foliage of rhododendron species in the Pacific Northwest is attacked perennially during the summer and fall by adult root weevil species. These weevils spend six or more months of their life cycle as immature forms in the soil feeding on the roots of their host plants. In the last issue of the ON, we discussed the root feeding problem on ornamentals. As was stated in that article, "we are at the mercy of the weevils" as far as root feeding is concerned. Such is not the case, however, with regard to foliage feeding caused by the adult weevils.

Two years of research in the Department of Entomology at Oregon State University on the Biology and Control of Obscure Root Weevils on rhododendron is near completion. The intent of this article is to provide commercial growers and homeowners with information as to how they can effectively control these destructive pests on rhododendron species.

Life Cycle

In Oregon, the obscure root weevil, *Sciopithes obscurus*, is the predominant foliage-feeding root weevil species. It represents more than 95% of our collections off rhododendrons in the Willamette Valley during the past two growing seasons. In Washington, however, Dr. Lee Campbell (WSU Western Washington Research and Extension Center, Puyallup) reports that the Woods Weevil, *Nemocestes incomptus*, also is quite common and was found to feed later in the fall (October and November). This article will deal specifically with the Obscure Root Weevil in the Pacific Northwest.

The adult weevils emerge during June and early July from soil beneath rhododendrons and other host plants. They feed on leaf margins causing the characteristic leaf "notching" effect so familiar to rhododendron growers (Figure 1). The peak feeding activity on the leaf (the interval



Figure 1. Rhododendron leaves with feeding "notches" caused by adult obscure root weevils

of most concern to growers) is between July 1 and October 1. Eggs are laid beginning about July 15 and through early fall. Weevils place their eggs in pieces of foliage, flower parts or other plant litter which soon drops to the plant debris beneath the plant. Obscure Root Weevil eggs are very sensitive to drying which may be why they have the instinctive behavior of depositing eggs on folded pieces of plant material.

Eggs hatch in about two weeks with young grubs (larvae) moving down to the root zone or plants where they begin feeding on the small fibrous roots. Feeding and larval development continue through the fall and into the winter in our mild climate. The larvae eventually transform into pupae, then into adults, which emerge in June the following year. This is the basic life cycle (Figure 2) that growers should keep in mind when we discuss the timing of insecticide applications later in this article.

Adult weevils in the fall attempt to overwinter in protected areas on plants or in the plant litter. The majority, however, die before spring. Thus, the grower's major concern is directed toward newly emerging adults in June. These individuals will cause extensive foliage damage if present in high numbers. A grower's previous experience will tell him the extent of his weevil problem and which plants are likely to be attacked at his location. His control efforts are then directed toward problem areas.

Control Procedures

State registrations for Orthene® insecticides have been granted in Oregon and Washington for control of adult root weevil on rhododendron species. Two years of testing by Dr. Campbell and ourselves have shown 95-99% reductions in foliage feeding following four-week interval applications of Orthene® insecticides to rhododendron foliage.

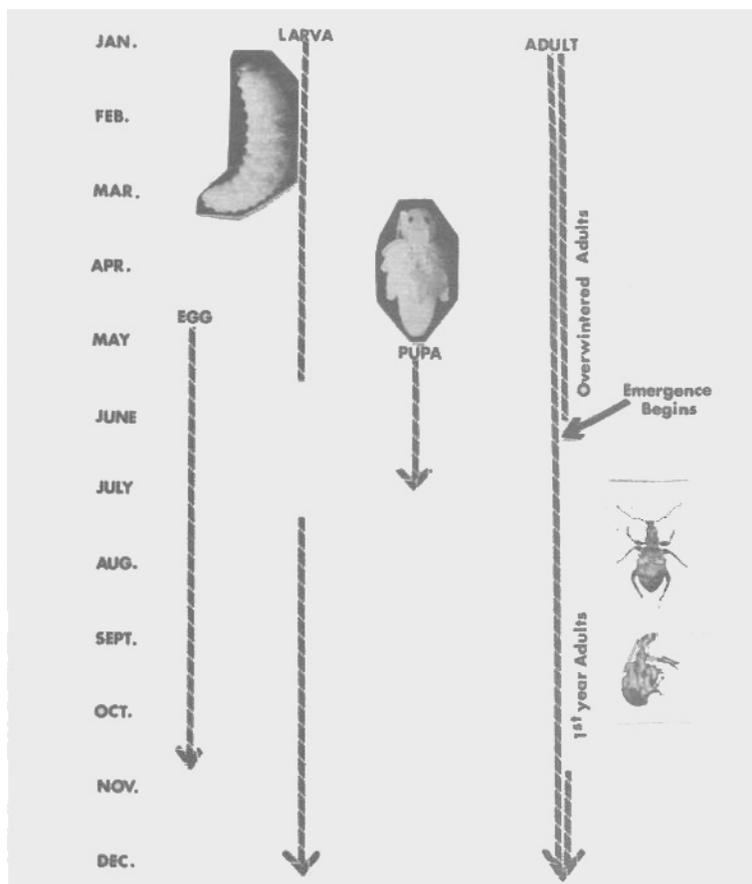


Figure 2. Life cycle of the obscure root weevil showing the predominant life-stage during a particular month of the year.

Research data suggests that in moderate to heavy infestation areas, applications should begin in early June and continue through September at four-week intervals. Dr. Campbell has found that in Washington, where Woods Weevils also are present in significant numbers, applications in October and November may be necessary. In Oregon, this does not appear to be the case and a September application is generally the last needed. Judgment of the grower is important in determining how many applications are necessary and if late season applications are required. Inclement weather in the fall (October) causes Obscure Root Weevils to become inactive for the most part.

<u>Insecticides</u>			
Insecticide*	Rate	Interval	Plants
Orthene® Insect Spray	1 1/2 Tablespoons per gallon	4-week beginning June 1	Rhododendron Azalea Viburnum
Orthene® Tree and Ornamental Spray	1 lb. AI per 100 gal.	4-week beginning June 1	Rhododendron Azalea

*Apply full coverage spray to foliage.

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.

Permission to Reprint material appearing in the ONW Newsletter is granted with the request that you credit the source: Ornamentals Northwest Newsletter, date, volume, issue, page numbers. Do not excerpt or reprint in such a manner as to imply the author's endorsement or criticism of a product or concept.

Nondiscrimination - The information in the Ornamentals Northwest Newsletter is provided with the understanding that no discrimination is intended and that listing of commercial products implies no endorsement by the authors. Criticism of products or equipment is neither intended nor implied.