

From the Campus

OARDC declares all-out war on woody ornamental pest

A serious insect pest of woody ornamental plants throughout Ohio has become the object of an intensive study by entomologists at the Ohio Agricultural Research and Development Center.

Dr. D. G. Nielson, OARDC entomologist and project leader, says the black vine weevil is the number one nursery insect pest, particularly along Lake Erie. As yet no adequate control program has been developed to alleviate the problem.

The pest is also a major problem in nurseries and homeowners' yards in Rhode Island, Pennsylvania, New York, and Connecticut. The insect's two most important hosts in these states and Ohio are taxus and rhododendron. It will also attack other ornamentals as well as small fruit crops.

A major effort against the black vine weevil has developed in Ohio as a result of a \$33,000 grant from the Lake County Nurserymen's Association. One Lake County Nurseryman lost 2,000 rhododendron valued at \$10,000 due to the weevil.

Nielson says the larval (grub) stage of the insect does the most damage by feeding on the roots of the host plant. The larvae thrive in light sandy soils, hence their large concentration along Ohio's Lake Erie nursery belt. The entomologist adds that if the foliage of rhododendron or taxus suddenly turns yellow, it is a good bet that grubs are attacking the roots. The adult weevils will eat foliage, but this damage is secondary to root damage by the larvae.

Nielson and assistant Mike Dunlap have already discovered that a small percentage of adults overwinter. These adults start maturation feeding in early April and begin laying eggs before many nurserymen even think of spraying with recommended insecticides.

Actually, few insecticides per-

form effectively against the larvae. Nielson says the larvae are apparently able to resist most insecticides tried so far. He adds that the ideal pesticide would be a soil-applied one which would provide a chemical barrier between the young larvae and the roots on which they feed. Nielson and Dunlap hope to develop a larvicide program for nurserymen after they have learned more about the larvae's response to light, gravity and other stimuli.

There are a number of unique features about black vine weevil adults. For one thing, even though they have one pair of wings, they are flightless. This means that their movement from one place to another is limited, causing population levels to build rapidly in a specific area.

There are no male black vine weevils in the United States. This condition, known as parthenogenesis means that the weevil's eggs hatch without being fertilized. Nielsen has been told that males exist in Europe and is interested in controlling black vine weevil by using pheromones with the help of imported males. Pheromones are sex attractants produced by an insect. They have been used to help to control some pests naturally.

Nielson will be travelling to Europe this summer to investigate the pheromone possibility. Much research has been done in Europe because of extensive damage to grapes and strawberries caused by black vine weevils.

Research efforts in this area have most recently been boosted by a \$40,000 grant from the United States Department of Agriculture. According to Nielsen, the current undertaking is the most intensive venture against the black vine weevil in the United States. If effective control measures are to be found, they will probably be found in the next three years, he concludes.

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