Environment Canada | Environnement Canada
Forestry Service | Service des Forêts

PEST REPORT

Pacific Forest Research Centre • 506 West Burnside Rd. • Victoria, B.C. • V8Z 1M5

BLACK VINE WEEVIL DAMAGE

Victoria

R.D. Erickson and M.T. Hughes

April, 1982

Black spruce and Douglas-fir seedlings growing in modified styro blocks at the Pacific Forest Research Centre were damaged by black vine weevil, Otiorhyncus sulcatus. The 1 + 0 black spruce seedlings were outside and the 1 + 1 Douglas-fir were in a shadehouse.

The larvae fed on the bark of the stems and roots and in many cases smaller roots were completely consumed. The result was girdling of the stems and a reduction of the number of roots.

Ten percent of the 1200 black spruce seedlings were girdled and had dry, brown needles. The Douglas-fir seedlings were damaged in two different ways: (1) 20% of 2500 seedlings were girdled the same as the black spruce except for the lack of above ground symptoms of dead needles, (2) another 10% of the 2500 had only root feeding. These two types of damage combined to make 30% of the Douglas-fir unsuitable for planting or further experimentation.

The significant damage was root and stem feeding by the larvae, however the nocturnal adult does feed on foliage during its part of the life cycle in June. The eggs are laid on the soil in June-July. The eggs hatch soon after and the larvae begin feeding on the roots and continue through the winter until April when pupation occurs. The adult emerges in May to begin egg laying, completing the life cycle; however, a small percentage of adults can overwinter.

Since most of the damage is underground, detection of this nursery pest is difficult and is best accomplished in the adult stage when they are feeding on the foliage. Control is also most effective in the adult stage before they oviposit; therefore the ability to

detect the adults is important. Weevil baits or pit-falls can be used to catch adult weevils or a susceptible broad leaf plant like rhododendron, placed among the seedlings, will exhibit damage and hence adult presence.

Damage to seedlings by black vine weevil has occurred before at Pacific Forest Research Centre. In 1972, 50% of 893 western hemlock seedlings growing outside were killed by larval feeding. Later in 1975, 40% of 1200 Douglas-fir seedlings being grown outside were killed by black vine weevil larvae.