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PEST REPORT

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A NEW PEST ON WESTERN HEMLOCK SEEDLINGS

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A pathogen, Colletotrichum acutatum Simmonds, new to North America, was found on western hemlock seedlings grown in containers on standard media at an Aldergrove nursery. The fungus causes terminal crook disease of radiata pine in New Zealand but has not been previously reported from western hemlock. A survey for the pathogen was conducted January 18 - 20 and 26 - 27 following a January 12 request by the nursery and subsequently by the Plant Products and Quarantine Division of Canada Agriculture.

A stratified random sampling of every seedlot and bay containing western hemlock, Sitka spruce and western red cedar was completed. All spruce seedlings were examined. Half of the cedar closest to the infected hemlock was examined. The hemlock and the balance of the cedar in that house were sampled at the 10% level. Cedar in an adjacent house were sampled at the 5% level. All seedlings selected were scrutinized for damage and for acervuli (fruiting bodies). Portions of acervuli were examined with a compound microscope. Tissues with typical damage but lacking acervuli were cultured.

Colletotrichum acutatum was found in five of the eight 1-0 western hemlock seedlots. A total of 38 infected seedlings were found among approximately 32,800 examined from seedlots with some infection present. This number may be low compared to earlier in the season when the pathogen was active. Damaged tissues were brittle and may have broken off.

Damaged hemlock seedlings had dead leaders and branches which were quite rigid and mostly reddish-brown. Small dark brown acervuli occurred on some needles. Many needles had already fallen. Crooking, typical of infections on radiata pine, was rare. The fungus was readily isolated and yielded cultures with the distinctive reddish pigment characteristic of this species of Colletotrichum.

About 177,000 cedar and 690,000 spruce seedlings were examined without finding C. acutatum.

The origin of the fungus and its damage potential in B.C. is uncertain. Until the first sample was received in 1981 from the nursery it had not previously been found among the many samples of diseased seedlings submitted each year to this laboratory. Ornamental stock imported from New Zealand is being checked by Canada Agriculture and the B.C. Ministry of Agriculture. The damage suggests it could become important in nurseries raising western hemlock and possibly on natural regeneration of the same species. The fungicides used at the nursery probably restricted its spread there but spraying would be impractical in a forest situation.