

# PEST REPORT

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## COOLEY SPRUCE GALL APHID INFESTATIONS IN SEED ORCHARDS ON SAANICH PENINSULA

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With plans in progress to enlarge and increase the number of seed orchards on the Saanich Peninsula, a problem commonly encountered when Douglas-fir trees are planted in close proximity to either coastal or interior spruce should be considered. The Cooley Spruce Gall Aphid is seldom a serious pest in forest conditions, but a very high population developed in the Tahsis seed orchard in Central Saanich.

The 2-year life cycle of the aphid is complicated, but several generations and all of its six life stages occur each year. Reproductive cycles take place on either Douglas-fir or spruce trees, but can be intensified if the two species are planted close together as in seed orchards or young plantations.

In the Tahsis seed orchard, all foliage of the Douglas-fir seed trees planted adjacent to Sitka spruce was heavily attacked by aphids, and by late May the 1979 foliage was shrivelling and turning brown. The 1979 cone crop was also heavily attacked, but it is not yet known what impact this will have on seed production. Early in June, winged adults were leaving the Douglas-fir trees and attacking the Sitka spruce, where new galls were beginning to form. The attacked terminals will die and tree growth and seed production will be reduced.

In the Dewdney seed orchard, about 1 km away, where only Douglas-fir were planted, the trees were only lightly attacked. However, it is understood that interior spruce may be planted here in the near future.

At the Lost Lake seed orchard, where spruce is to be the main tree species for seed, the approximately 100 recently-planted Douglas-fir trees should be removed to prevent the aphid from becoming a problem. Although mature Douglas-fir trees are present nearby, they are not as great a threat, apparently being less susceptible to attack or possibly the upper level microclimate is less favorable for the aphid, which is a relatively poor flier.

Preferably, Douglas-fir and spruce should not be planted together. However, where it is necessary, alternative measures may reduce the aphid populations to acceptable levels.

1. If Douglas-fir and spruce trees are pruned when the aphids are in flight, pruned material should be immediately removed from the site and burned.
2. Spruce and Douglas-fir plantings should be separated by a 50 to 100 m wide buffer planting of another tree species, such as western hemlock or western red cedar.
3. Spraying with an insecticide, or an insecticidal soap mixed with an insecticide, could effectively reduce populations - but timing is critical. The first spray should be applied just prior to bud break, followed by two more sprays if concentrations of white wool are noted on the needles.