DEPARTMENT OF FORESTRY · CANADA

Timber Talks

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HAVE YOU A BALSAM WOOLLY APHID INFESTATION? No. 41

Evidence suggests the possibility of balsam woolly aphid infestations in British Columbia spreading from the amabilis and grand fir forests in the southwestern part of the province to most of the important Abies forests in the southern third. Dead trees that have turned red, dying trees with thin crowns, whitish appearance of the bark on the lower bole and swellings at branch nodes are recognizable symptoms. Careful observation is necessary to detect small populations of this wind and animal dispersed insect, particularly in the branches. Air and the ground investigations were carried out to determine if the aphids could be detected when their populations were low and control measures practicable.

From fixed-wing aircraft and helicopters, areas attacked could be observed, and areas suspected of infestation deliniated for a ground survey. An attack in amabilis fir forests could be identified by dead trees, which were easily recognized from the air. Infestations in alpine fir forests could be observed as the foliage turns red soon after an attack. Aphid detection in grand fir forests was difficult as this species seldom showed discoloration until after the needles dropped.

Aphid populations were more frequent in tree crowns than on the boles, often being present in the former and absent on the latter. Thus, it cannot be inferred that trees are uninfested when aphids are not visible on the bole. Careful observation of the lower 6 ft of the tree trunk may reveal small spots of "wool" on the bark. Such indications are less evident in the winter when the insect bears little "wool".

Distribution of the insect throughout the crown is generally fairly uniform, concentrations being heavier at outer branch nodes than elsewhere. In the winter aphids are more numerous at nodes and around male buds on amabilis fir and on the lower side of grand fir branches.

To eliminate the tedium and reduce the time required for an extensive examination, branch nodes were thoroughly shaken in hot water and the liquid filtered through a Buchner filter. Aphids retrieved in this matter were 65 per cent of the number known to be present in 82 per cent of the tests. In all instances where aphids were known to be present, at least one insect was found by the washing technique and identified the collection as being positive.

Losses from balsam woolly aphid infestations may be reduced by proper forest management, but early detection of an attack is a prerequisite. Constant vigilance should be maintained for crowns that are thinning, foliage turning brown or red, swollen nodes at branch tips and tiny white wool spots on the bark. Such symptoms should be reported for further investigation.

REPORT: British Columbia Detection Surveys for Balsam Woolly Aphid, Adelges piceae (Ratz) (Homoptera: Adelgidae). J. W. E. Harris, Forest Research Laboratory, Victoria, B. C.