Balsam Fir Sawfly

Neodiprion abietis (Harris)
Hymenoptera: Diprionidae

Struble, G. R. 1959. Egg sampling reveals trend in white-fir sawfly abundance. Journal of Forestry 57: 510-511.

Objective: To develop a sampling procedure for the eggs of *N. abietis* as a means of predicting larval damage on true fir trees.

Abstract: Balsam fir sawfly (=white-fir sawfly), *Neodiprion abietis* (Harris), is a defoliator of white fir, *Abies concolor* (Gord. & Glend.) Lindl., and California red fir, *A. magnifica* A. Murr. Female *N. abietis* deposit eggs in slits cut into needles of true firs. Overwintering egg clutches hatch in June; larvae feed in June and July as gregarious colonies on last year's needles. The potential damage produced by larval *N. abietis* can be estimated by sampling egg clutches, which allows sufficient time to take control measures before larvae produce excessive defoliation.

Sampling Procedure: Divide selected sampling areas into four quadrants. In each quadrant, randomly select 25 trees and clip two twigs from each tree for a total of 200 twig samples from the sampling area. Clip branches that can be reached from the ground. Each clipping should be about 15.24 cm long with approximately 15 laterals. Keep clippings refrigerated until the number of clutches present can be tallied. A clutch of *N. abietis* eggs consists of all the eggs laid in the needles of one or more adjacent shoots on a twig, presumably laid by a single female. Sample trees between mid-May and early June, before larvae begin to hatch.

There is a direct correlation between the number of clutches observed and the level of defoliation produced by *N. abietis* larvae. Approximately 1,000 larvae are produced from a population of 20 clutches. A population of this size is likely to produce noticeable defoliation. More than 20 clutches per 200-twig sample from 100 trees indicates that control measures may be needed to limit defoliation in the sampling area.

Note: The author attributed a downward trend in the number of clutches observed over several years to a polyhedrosis virus attacking mature larvae.