

Jack Pine Budworm

Choristoneura pinus Freeman

Lepidoptera: Tortricidae

Kulman, H. M.; Hodson, A. C. 1962. A sampling unit for the jack-pine budworm, *Choristoneura pinus*. *Journal of Economic Entomology* 55: 801-802.

Objectives: To identify a sampling unit for estimating larval density of *C. pinus*, which would also facilitate the forecasting of defoliation levels.

Abstract: The jack pine budworm is an important pest of jack pine, *Pinus banksiana* Lamb., and to a lesser extent red pine, *P. resinosa* Ait., in the Great Lakes region and Canada. Extensive top kill is common during outbreaks, but tree mortality is rare unless infestations coincide with periods of drought.

A sampling unit for estimating *C. pinus* larval populations was determined from examination of the distal cluster of new shoots. A consistent ratio was found between larval density in the distal cluster of new shoots and the population of the next 10 lateral clusters. The number of larvae on the next 10 lateral shoots (*Y*) was related positively to the number of larvae on the distal cluster of new shoots (*X*) ($Y = 0.459 + 0.475X$).

Sampling Procedure: Sample the distal cluster on new shoots of three branches per tree, and count and record the number of larvae. There is a consistent relationship between the larval population on the distal cluster of new shoots, and the population of the next cluster of older shoots of approximately 3:1. This relationship can be described by the equation:

$$Y = 0.459 + 0.475X$$

where, *X* represents the number of larvae on the distal cluster of new shoots and *Y* represents the number on the next 10 lateral shoots.

Notes: The relationship described here was established during low population levels and may not reflect those during higher ones. Further studies are needed to determine the number of shoot clusters that would need to be sampled to estimate defoliation levels.