

European Pine Shoot Moth

Rhyacionia buoliana (Denis & Schiffermüller)

Lepidoptera: Tortricidae

Miller, W. E. 1960. The European pine shoot moth: relationship between proportion of trees infested and number of insects per tree. *Journal of Forestry* 58: 647-648.

Objective: To determine if the number of *R. buoliana* per tree was related positively to the proportion of trees infested by *R. buoliana*.

Abstract: The European pine shoot moth, *Rhyacionia buoliana* (Denis & Schiffermüller), has become an important pest of two- and three-needle pines, *Pinus* spp., in the northern USA following its introduction into Long Island, NY in 1914. This insect primarily infests terminal shoots causing severe deformation, and reduced growth. This study was conducted in red pine, *Pinus resinosa* Ait., plantations in Michigan.

The number of *R. buoliana* per tree (Y) was related positively to the proportion of trees infested by *R. buoliana* (X) ($Y = -1.09 + 0.02X$). The sampling of at least 15 trees per stand to determine the proportion of infested trees was recommended.

Sampling Procedure: Use this method in pine plantations at 1.8 by 1.8-m spacing and from approximately 1 m in height to crown closure. Sample at least 15 trees in the area of concern by selecting every fifth tree in every fifth row. Inspect the terminal bud cluster of each sample tree for pitch globules and distorted or dying shoots (i.e., shepherd's crooking). Damage from *R. buoliana* persists throughout the winter so this method can be carried out when populations are in diapause. Enter the proportion of infested trees (X) into the equation $Y = -1.09 + 0.02X$ to determine the number of *R. buoliana* per tree (Y).

During April and June in lower Michigan, the late larval and pupal stages could be collected and sent for identification to confirm the presence of *R. buoliana* to distinguish from other closely related species in the genus *Rhyacionia*.

Note: The inter-tree distribution of *R. buoliana* was random within all plantations.