

Eastern Hemlock Looper

Lambdina fiscellaria fiscellaria (Guenée)

Lepidoptera: Geometridae

Otvos, I. S.; Bryant, D. G. 1972. An extraction method for rapid sampling of eastern hemlock looper eggs, *Lambdina fiscellaria fiscellaria* (Lepidoptera: Geometridae). *Canadian Entomologist* 104: 1511-1514.

Objective: To describe an efficient method of processing moss and bark for sampling *L. fiscellaria fiscellaria* eggs.

Abstract: The eastern hemlock looper, *Lambdina fiscellaria fiscellaria* (Guenée), causes severe defoliation, growth loss and subsequent mortality in balsam fir, *Abies balsamea* (L.) Mill., stands. The young larvae feed on a variety of hosts, but survive best on newly developing balsam fir needles. Older larvae feed indiscriminately, and defoliation is usually evident by late July to early August. Traditional sampling procedures for newly-hatched larvae provide only 2 weeks advance notice for control scheduling. Eggs are present from September to June, and could be sampled in fall, thereby providing ample time for planning control actions the following spring. Bleach solutions (2, 5, 10, 15, and 20%) were examined for their potential to loosen eggs from shredded moss and bark samples.

The stronger solutions (5, 10, 15, and 20%) released eggs quicker than the weakest one, but the eggs disintegrated following soaking. A 2% bleach solution bath for 45 minutes will release *L. fiscellaria fiscellaria* eggs without deleterious effects. This sampling technique is more efficient and permits egg sampling over more extensive areas than the use of direct observations.

Sampling Procedure: Collect moss and bark samples containing *L. fiscellaria fiscellaria* eggs within the area of concern. Soak samples in a 2% bleach solution for 45 min in a mechanical shaker to separate eggs from their substrate. Remove large debris and filter the remainder through Number 10 and 40 sieves to collect eggs. Rinse screens under running water for 10 min to halt the corrosive action of the bleach. Wash eggs onto filter paper, and place under a dissecting microscope to tally. Hand shredding of moss and bark samples into smaller pieces increased significantly the number of eggs obtained. Eggs collected by this method can be used subsequently to determine egg viability.