Variable Oakleaf Caterpillar

Heterocampa manteo (Doubleday)
Lepidoptera: Notodontidae

Surgeoner, G. A.; Wallner, W. E. 1978. Foliage consumption by the variable oak leaf caterpillar, *Heterocampa manteo* (Lepidoptera: Notodontidae), its use in defoliation predictions. Canadian Entomologist 110: 241-244.

Objective: To predict defoliation by *H. manteo* on *Quercus* spp. based on the density of early instars.

Abstract: Variable oakleaf caterpillar, *Heterocampa manteo* (Doubleday), commonly defoliates oaks, *Quercus* spp., and other hardwoods in eastern North America. White oak, *Quercus alba* L., is a preferred host of *H. manteo*. Periodic outbreaks reduce tree growth but typically subside after 2–3 years and before tree mortality occurs. Two generations occur in the south and one generation occurs in the north.

Foliage consumption by *H. manteo* on leaves of both white and red, *Quercus rubra* L., oaks was determined in the lab. An average of 6.9 and 5.2 leaves per larva were observed for white and red oak leaves, respectively. Life studies of *H. manteo* conducted in Michigan indicated predation had little impact on larval survival, therefore a crude prediction of expected defoliation can be made from the density of early instars on oaks. Complete defoliation is likely when early instars average one per 5 leaves, and 50% defoliation can be expected when densities average one per 10 leaves.

Sampling Procedure: Randomly sample terminals from canopies of oak trees, using a pole pruner if necessary. Examine the leaves of each terminal for the presence of early instar *H. manteo*. First instars are gregarious on the underside of leaves. Expect 50 and 100% defoliation when early instars average one per ten and five leaves, respectively.

Notes: The authors did not specify how many terminals per tree, trees per stand, or leaves per terminal should be sampled to predict defoliation by *H. manteo*. Land managers should examine a sufficient number of trees and leaves per tree to adequately sample the pest population throughout the area of concern. Defoliation estimates will vary if larval parasitism is prevalent as parasitized larvae consume significantly less foliage.