Saddled Prominent
Heterocampa guttivitta (Walker)
Lepidoptera: Notodontidae

Grimble, D. G.; Kasile, J. D. 1974. A sequential sampling plan for saddled prominent eggs. Applied Forestry Research Inst. Rep. 15. Syracuse, NY: *State University of New York, College of Environmental Science and Forestry*; 15 p.

Objective: To develop a sequential sampling plan for *H. guttivitta* eggs to estimate defoliation levels in sugar maple stands.

Abstract: The saddled prominent, *Heterocampa guttivitta* (Walker), is a native defoliator of hardwood forests. Preferred hosts include sugar maple, *Acer saccharum* Marsh., and American beech, *Fagus grandifolia* Ehrh., but nearly all deciduous trees are attacked during outbreaks. This insect is also an important pest of sugarbushes in the northeastern USA and Canada. A sequential sampling plan was presented for evaluating the risk of defoliation in sugar maple stands.

The sample unit consisted of 10 individual leaf-clusters (about 40 leaves) removed by pole-pruners from a branch tip. By examining a series of foliage samples, field workers can predict the threat of defoliation as either negligible (<40%) or severe (>70%) based on the cumulative number of viable eggs and newly-hatched larvae. A minimum of nine samples is required, and a maximum of 30 are examined before sampling is discontinued, and defoliation is classified as undetermined until another sample can be conducted (i.e., 2-3 days later).

Sampling Procedure: Locate one plot per 10-14 ha in stands where sugar maple is the dominant species. Remove 10 individual leaf-clusters (about 40 leaves) randomly from a branch tip 61-cm in length located as high in the crown of sugar maple as can be reached with pole pruners. A leaf cluster is defined as that group of maple leaves (2-4) that develop from a single bud. Time sampling to occur at about 10% egg hatch (mid-June through early July).

Once the foliage samples are removed, record the total number of eggs (parasitized and viable) and larvae found. Eggs, which are light green in color when fresh, darkening with age, are deposited singly on the underside of leaves. Take a minimum of nine branch samples, and calculate the cumulative number of *H. guttivitta* eggs and larvae. Reference the sequential sampling plan (Fig. 6), and continue sampling until a decision is met and defoliation is classified as light or severe. After a maximum of 30 samples, discontinue sampling and classify defoliation levels as undetermined. Visit each sampling location at least once during the late-larval feeding period to verify defoliation levels.

Notes: The distribution of *H. guttivitta* eggs follows a Poisson distribution. The errors of misclassifying defoliation were set at 0.10 (light) and 0.05 (severe). Investigators should be familiar with the lifecycle of *H. guttivitta* and be able to distinguish its eggs from those of other forest Lepidoptera.
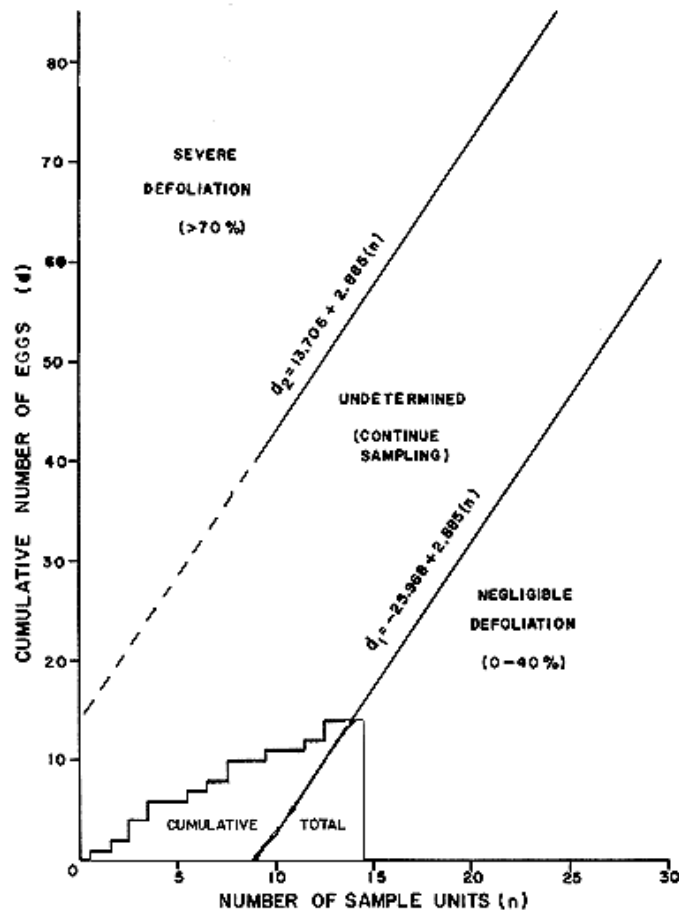
Figure:

Fig. 6. Decision lines for sequential sampling of saddled prominent eggs to predict defoliation.

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