SEASONAL INCIDENCE OF SHOOT INFESTATION BY MAHOGANY SHOOT BORER (LEPIDOPTERA: PHYCITIDAE) IN FLORIDA

FORREST W. HOWARD
University of Florida
Institute of Food and Agriculture
Fort Lauderdale Research and Education Center
3205 College Avenue
Fort Lauderdale, Florida 33314

The mahogany shoot borer, Hypsipyla grandella (Zeller) (Lepidoptera: Phyicidae), is a major pest of trees of certain species of the family Meliaceae, including mahoganies, Swietenia spp., and Spanish-cedars, Cedrela spp., which are important timber trees in the tropics (Lamb 1966). The West Indies mahogany, S. mahagoni Jacquin, is native to southern Florida and one of the most important ornamentals in this area.

Mahogany shoot borer larvae bore into young terminal shoots or into seed capsules. The most severe effect is the death of the main terminal of a young tree, resulting in the loss of apical dominance and respouting and formation of crooked trunks. Multiple attacks result in excessive side branching (Grijpma 1974, Lamb 1966).

To provide information for estimating the best timing for control efforts, we conducted a study of the seasonal incidence of shoot infestation by the mahogany shoot borer in southern Florida. Observations were made weekly from March 1985 through October 1986 on 14 West Indies mahogany trees three years old at the beginning of the study planted in a field at the Fort Lauderdale Research and Education Center. During each weekly observation of each tree, five randomly selected terminal shoots were inspected for shoot borer infestation. Mahogany shoot borers eject frass from the larval galleries. Terminals with active shoot borer infestations were characterized by the presence of a compact mass of relatively light-colored frass. Dead terminals with darkened and dissipated masses were not considered to be actively infested with larvae.

The percentage of the total number of sampled terminal shoots actively infested with mahogany shoot borer per month peaked in May of each year (Fig. 1). This is consistent with the observations of two other authors: Larval populations of mahogany shoot borers on Cedrela spp. and S. macrophylla in Barinitas, Venezuela, during the period April through November 1968 showed four or five peaks, with the highest peak in May (Roovers 1971). The May population peak was especially pronounced on C. odorata, which supported higher populations than the other species studied. In the Caribbean National Forest, Puerto Rico, infestation of S. macrophylla and S. macrophylla X S. mahagoni by the mahogany shoot borer was recorded in May and November for three successive years. The incidence of infestation was consistently higher in May (Bauer 1987).

These results are also consistent with the observations of Gara et al. (1973) and Grijpma & Gara (1970) that mahogany shoot borers prefer mahogany trees with new growth, since in Florida the spring flush of growth in West Indies mahoganies takes place from April to June (Howard & Solis 1989). However, the environmental factors which influence mahogany shoot borer populations and seasonal activity have not been fully investigated. In any case, the incidence of shoot infestation by the mahogany shoot borers appears to be concentrated in the spring, a characteristic that should be considered in developing control strategies for this pest.

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Fig. 1. Percentage of West Indian mahogany terminal shoots infested with mahogany shoot borers per month from March 1985 to August 1986 at Fort Lauderdale Research & Education Center, Florida.

REFERENCES CITED


