Seasonal fluctuation of *Empoasca longibrachiata* (Southern) (hemiptera: cicadellidae: typhlocybinae) in Viçosa, Minas Gerais State, Brazil

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Introduction

The diversity of adaptations related to seasonal activities is of extreme importance in the geographic distribution of insects (WOLDA, 1978; TAUBER& TAUBER, 1981). Insects had developed physiological or behavioral adaptations, such as metabolism reduction and development restriction, to survive at adverse conditions. Typhlocybinae, small sized leafhoppers, occupy several ecological niches, feeding in a wide variety of trees, bushes, herbaceous plants and grasses. In face of their potential role as agricultural plagues, populational studies of species of the subfamily Typhlocybinae are of great importance. This work describes the seasonal activities of one species of the subfamily Typhlocybinae in Minas Gerais state, Brazil: *Empoasca longibrachiata* Southern, 1982.

Objectives

Find possible interactions between abiotic variables (temperature and pluviosity levels) and the abundance of the species studied in Viçosa, MG.

Methods

The study was done at Mata do Paraíso, a natural reserve area of the Universidade Federal de Viçosa (UFV) with approximately 194 ha of secondary forest in Viçosa, Minas Gerais, SE Brazil. The dry season lasts from June to August, and the rainy season the remaining months COELHO (1997). The specimens studied were collected through Luiz de Queiroz light trap (SILVEIRA NETO & SILVEIRA, 1969) at 2.5 m above the soil and functioning in the crepuscular-nocturnal period. The sampling occurred in the periods of August 1981 to November 1983, February 1986 to June 1988 and August 1992 to September 1993. The specimens collected were identified through taxonomic keys and comparison with the literature. The total of every month precipitation and evaporation was used as basis for the characterization of the two climatic stations: the months in which the precipitation overcame the evaporation characterized the rainy season, whereas the opposite defines the dry season (PAULA, 1996; COELHO, 1997).Through the Kruskal-Wallis Test (SIEGEL, 1975) the dry and rainy seasons were compared to the number of individuals. The environmental data of mata do Paraíso was obtained at the setor de Meteorologia Agrícola (Agricultural Meteorology Sector) of Universidade Federal de Viçosa, wich is located approximately 8 km north of Mata do Paraíso (COELHO & DA-SILVA, 2003)

Results

In 68 months of sampling with light trap at Mata do Paraíso, 150 specimens of *Empoasca longibrachiata* were obtained. Based on the results of the Kruskal-Wallis test, the species did not vary significantly between rainy and dry seasons. Apparently, in Mata do Paraíso *Empoasca longibrachiata* can be considered a non-seasonal species.

Conclusions

Temperature and precipitation are factors traditionally correlated with variations in tropical insect populations (SILVEIRA-NETO **et al**., 1976; WOLDA, 1978). According to WITSACK (1988), the developmental time in Auchenorrhyncha depends on the weather conditions, with the cold during winter and dry climate during the summer being the most unfavorable factors. Temperature also has a great influence on the egg development of *Empoasca decipiens* Paoli, 1930 (RAUPACH **et al**., 2002). According to WOLDA (1980), most Cicadellids of Las Cumbres, Panama present higher abundance during the rainy season, although non-seasonal species and species with abundance in the dry season also occurred. In Mata do Paraíso *Empoasca longibrachiata* did not respond as a seasonal species, maybe because its hosts plants (probably graminae) did not suffer significant alterations throughout the seasons.

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