Evaluation of presence– absence sampling technique to estimate densities of larvae and mines of vegetable leafminer (*Liriomyza sativae* Blanchard) on greenhouse cucumber in Jiroft

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Abstract

Efficiency of the presence– absence sampling technique to evaluate densities of vegetable leafminer *Liriomyza sativae* Blanchard (Diptera: Agromyzidae) larvae was tested by weekly sampling of a greenhouse cucumber in Jiroft, southern Iran, during two growing seasons of 2009 and 2011. At first, spatial distribution of larvae and leafmines was determined separately by calculating Taylor dispersion index. Based on R^2 and F values of regression analysis, Taylor's power law model provided suitable description of variance/mean relationships. The b values ranged from 1.174 to 1.317 (for larvae) and from 1.181 to 1.219 (for leafmines). Taylor indices were used in Wilson and Room model to evaluate the efficiency of presence– absence sampling technique. The results of Chi-square test showed that there was no significant difference between predicted and observed frequencies of infested leaves in each sampling. The mean mines and larval density may be precisely estimated by a proportion of the infested leaves. In this way, the required time and cost would be greatly reduced.

Keywords: Vegetable leafminer, Spatial distribution, Greenhouse crops.

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