

RELATIVE SUSCEPTIBILITY OF CERTAIN FABA BEAN BREEDING LINES TO INFESTATION BY THE SERPENTINE LEAF MINER, *Liriomyza trifolii* (BURGESS) UNDER FIELD CONDITIONS IN NORTH DELTA

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ABSTRACT

Seasonal fluctuations and the relative susceptibility of eleven breeding lines of faba bean in addition to the local variety Sakha 3 to the infestation by the serpentine leaf miner, *Liriomyza trifolii* (Burgess) were investigated at Farm of Sakha Agricultural Research Station during two successive growing seasons; 2005/06 and 2006/07.

Data collected weekly using binocular microscope and by visual counts indicated that the population of the leaf miner, *L. trifolii* was higher in the second season than in the first one and the highest number of the live larvae was recorded during the second half of February on all tested breeding lines and variety Sakha 3 . The mean number of *L. trifolii* larvae indicated that the highest number was recorded on the line 1566/574 in the first season, while in the second season the highest number was observed on line 461.Sakha1. On the hand, the breeding line 1618/837 recorded the lowest number of larvae during the two study seasons.

Regarding to the susceptibility degree to this insect, line 461.Sakha1 appeared as highly susceptible, while the lines 1566/574; 1571/638; 81/38; 96/67 and variety Sakha 3 appeared as susceptible. The other lines showed some sort of resistance, where 1561/492; 1610/705; 1618/ 846 and 92/59 appeared as low resistant lines, but 1618/837 appeared as moderately resistant one . Thus, from the gained results, entomologists and the plant breeders could develop a management strategy for the control of the leaf miners on faba bean in north Delta through selecting lines that have a desirable resistance levels.

INTRODUCTION

In Egypt, the serpentine leaf miner , *Liriomyza trifolii* (Burgess) is one of the serious insect pests of faba bean , *Vicia faba* L. , causing considerable loss in yield (Awadalla, 1998 ; Salem *et al.*,1998; Abou-Elhagag & Salman,2001 and Abdel-Galil *et al.*, 2002). Nowadays, the control strategies must be developed to control the pests of faba bean without using insecticides which cause environmental pollution, destruction of beneficial insects and insect resistance to many insecticides. Therefore, there is an urgent need to determine the sources of resistance existing within faba bean breeding lines and cultivars, as the resistant plants are much better than use of chemicals for pest control. From the point of view of the farmer, entomologists and others, the use of resistant cultivars to insect species represents one of the simplest and most convenient method in insect pest control (Dent, 1991), since they spread rapidly without much extension effort (Dyck,1974). Also, the resistant cultivars represent the inherent ability of crop plants to restrict, retard or overcome pest infestation and thereby to