

Evaluation of Head Lettuce Varieties for Liriomyza trifolii Leafminer Populations

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INTRODUCTION

Large differences in Liriomyza leafminer populations with subsequent damage have been observed among head lettuce varieties planted next to each other in field situations. The reasons for these differences are not yet clear, but may be due to such factors as leaf thickness, plant color or the nutrient content of the lettuce as perceived by the female fly as she feeds on the plant.

The purpose of this study was to obtain more information about head lettuce varieties as they related to Liriomyza trifolii populations.

METHODS AND MATERIALS

A lettuce variety trial containing 12 varieties was planted in a complete block design to determine varietal differences in leafminer numbers. This variety trial, located near Bard, California, was planted on September 23, 1988, and examined on December 23, 1988. Plots were examined by cutting three heads/plot at ground level and counting the number of leafminer puparia trapped in the lettuce head (9 heads/variety). Leafminer puparia numbers were recorded and statistically analyzed.

RESULTS AND CONCLUSIONS

Low leafminer numbers were found in this particular study; the highest number was only 14 (Table 1). Many heads did not have any leafminer puparia. Because of this low-level leafminer population incidence, no statistical differences were found between varieties. High leafminer populations of more than 100 puparia per head have been recorded from fields with heavy populations. If the leafminer populations and subsequent infestation had been greater, more evidence regarding varietal differences might have been obtained. However, with the low numbers of leafminers present, no conclusions can be drawn regarding the effect of varietal differences upon leafminer populations.

Table 1. Head lettuce varieties and resultant Liriomyza trifolii populations in trials near Bard, CA, 1988

<u>Variety</u>	<u>Mean # of puparia per head</u>	<u>High</u>	<u>Low</u>
Acacia	2.67	6	1
Autumn Gold	4.22	14	0
Classic	1.00	5	0
Desert Queen	1.22	4	0
Empire (Asgrow Co.)	1.00	3	0
Empire (Royal Sluis)	1.33	5	0
Excel	1.33	3	0
Fame	1.78	7	0
GL659 Mesa	1.11	3	0
La Jolla	1.33	8	0
Maverick	1.56	4	0
Vanpire	3.55	8	0