Control of Lepidopterous Insects on Head Lettuce

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Interpretive Summary

All treatments had similar numbers of marketable heads, but head weight varied between treatments. Lettuce heads from the plots treated with S-1812 were among those with higher head weights.

Introduction

Increasing interest by local retailers for a source of locally grown lettuce; with emphasis on specialty varieties, has occurred in recent years. Experiments have been conducted with hydroponic production of lettuce by the University of Tennessee. These experiments have shown promise, but production costs could be a limiting factor for development markets. Field grown lettuce can be successful in the spring and fall, and would help reduce production costs. Insect pests could be a severe problem in some areas of the state. An experiment was conducted at the Plateau Experiment Station in Crossville to evaluate the efficacy of several insecticides against these pests.

Material and Methods

The site was prepared using conventional tillage in late April. Fertilizer was broadcast at 300 lb/A of 15-15-15 before final disking May 12. Bensulide (Prefar 4E) at 5.5 lb ai/A and Trifluralin (Treflan 4 EC) at 0.75 lb ai/A were incorporated on May 12 for weed control. Transplants of 'Iceberg' were set on May 14. Plots were three rows on 3 ft centers, 15 ft long. Ten plants were planted in each row. Experimental plot design was randomized complete block with four replications. Insecticide applications were made using a 2.5 gal compressed CO_2 hand sprayer calibrated to spray 35 gpa at 40 psi. Treatments took place after weekly insect counts on June 19, June 26, and July 3. Another insect count was carried out before the harvest on July 10. The center row of each plot was harvested July 10, and the number of marketable heads and the weight of the heads was taken. All data was analyzed using the analysis of variance method, and the means were separated by Duncan's multiple range test at the 0.05 level.

Results and Discussion

Pest pressure on the lettuce was not very heavy during this trial. All treatments had significantly fewer worms than the untreated plots, with the exception of the July 10 evaluations (Table 1). The reason for the discrepancy is not known. Plots treated with Asana, Avaunt, and Dipel were among those with fewer worms present during evaluations on June 19, June 26, and July 3. All treatments had similar numbers of marketable heads, but head weight varied between treatments. Lettuce heads from the

plots treated with S-1812 were among those with higher head weights. Plots that were treated with either formulation of S-1812 or S-1812 combined with other insecticides had no phytotoxic symptoms.

Table 1. Number of worms present on lettuce heads and marketable yield evaluated at the Plateau Experiment Station, Crossville, 2003.

Treatment Formulation	Rate lb ai/A	Worms / 10 Heads				No. Market Heads	
		June 19[z]	June 26	July 3	July 10		
S-1812 4 EC	0.150	2.00 b	0.50 b	0.50 a	0.25 a	10.00 a	18
S-1812 35 WP	0.100	0.75 b	0.25 b	0.50 a	0.00 a	10.00 a	17
S-1812 35 WP	0.150	0.75 b	1.00 a	0.25 a	0.75 a	09.50 a	17
S-1812 35 WP	0.200	1.00 b	0.00 b	0.00 a	0.50 a	10.00 a	17
S-1812 35 WP Dipel 10.3 DF	0.100 0.050	0.50 c	0.00 b	0.25 a	0.00 a	10.00 a	18
Dipel 10.3 DF	0.050	0.00 c	0.00 b	0.00 a	0.25 a	10.00 a	17
S-1812 4 EC Asana XL .66 EC	0.100 0.020	0.00 c	0.00 b	0.25 a	0.25 a	10.00 a	17
Asana XL .66 EC	0.020	0.00 c	0.00 b	0.00 a	0.00 a	10.00 a	15
Spintor 2 SC	0.063	0.50 c	0.00 b	0.00 a	0.25 a	09.75 a	16
Avaunt 30 WD	0.063	0.00 c	0.25 b	0.25 a	0.50 a	10.00 a	16
UTC	---------	3.00 a	1.00 a	0.25 a	0.00 a	10.00 a	17

[z] Means within a column followed by the same letter are not significantly different at the 0.05 level of probability, Duncan's multiple range test.

This research represents one season's data and does not constitute recommendations. After sufficient data is collected over the appropriate number of seasons, final recommendations will be made through research and extension publications.