Control of Lepidopterous Pests on Cabbage 2002

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Interpretive Summary

All insecticide treated plots produced more marketable Cabbage heads than the untreated plots. Plots treated with Asana produced more damaged heads than any other treatment.

Introduction

Cabbage is widely grown in Tennessee for fresh market usage. Acreage has expanded in recent years as an alternate crop to tobacco. However, the cabbage-worm complex which includes the imported cabbageworm and cabbage looper can destroy the crop rather quickly with constant pressure during the growing season. Insect control incorporating good Integrated Pest Management Strategies should be implemented for a successful cabbage crop. Cabbage, a cool season crop, is best grown in the spring or fall as the summer season is usually too severe for satisfactory cabbage production.

Materials and Methods

Transplants of 'Early Round Dutch' cabbage were set on 16 May at The University of Tennessee Plateau Experiment Station, Crossville. Plots were 3 rows wide by 10ft long. Plants were set 12 inches apart and rows were planted on 3 ft centers. Treatments were arranged in a randomized complete block design with four replications. Blocks were separated by 5ft alleys. Soil type was classified as Lily sandy loam with a pH 6.2. Insecticide applications were made using a 2.5 gal compressed CO_2 hand sprayer calibrated to spray 60.5 gpa at 40psi on 6 , 13, 19, 26 June and on 1, and 10 July. There were about 30% cabbage loopers (CL) and 70% imported cabbageworms (ICW) on all treatments and evaluation dates. Number of worms were counted on 10 plants from the middle row of each plot on 12, 18, 25 June and on 9 July. Number of marketable heads and yield were determined on 30 July. All data were subjected to ANOVA.

Results and Discussion

All insecticide-treated plots had significantly fewer damaged heads when compared to the untreated control after each insecticide application (Table 1). One week after the last insecticide application, plots treated with any rate of RH-2485 had more damaged cabbage heads and the lowest yields than the other treatments but less than the untreated control. Plots treated with Asana had more damaged heads than any treatment but less than the untreated check. The new biological insecticides were effective for the control of the worms. The combination of S-1812 with the other insecticides were effective in worm control with no phytotoxic symptom.

Table 1. Mean number newly damaged cabbage heads and marketable yield evaluated at the University of Tennessee, Crossville, 1998.

		Worms/10 Heads					
Treatment	**Rate lbs (AI)/Ac**	**12 June**	**18 Jun**	**25 Jun**	**9 Jul**	**No. Market Heads**	**Yi lb**
S-1812 35WP	0.075	1.75	0.75	2.00	0.25	8.50	1
S-1812 35WP	0.100	0.00	0.00	1.25	2.25	9.50	1
S-1812 35WP	0.150	0.50	0.50	3.75	0.75	8.50	1
S-1812 35WP	0.200	0.50	0.00	2.50	1.00	9.25	1
Proclaim 5WD	0.015	0.00	0.25	2.00	0.00	8.75	1
Asana .66 EC	0.020	0.00	0.00	0.25	2.00	4.25	
Danitol 2.4 EC	0.200	0.00	0.25	1.00	1.25	9.25	2
Danitol 2.4 EC	0.100	0.00	0.00	0.50	0.75	8.75	1
Danitol 2.4EC + S-1812 35WP	0.100 0.100	0.00	0.00	0.00	0.75	9.50	2
Danitol 2.4 EC + S-1813 35WP	0.200 0.100	0.50	0.00	0.75	0.50	9.25	3
Dipel 10.3DF + S-1812 35WP	0.052 0.100	0.00	0.00	1.00	1.50	7.75	1
Asana 0.66 EC + S-1812 35WP	0.020 0.100	0.00	0.00	0.25	1.00	9.25	2

Dipel 10.3 DF Spintor 2SC	0.052 0.063	0.50 0.50	0.00 0.00	2.00 1.50	3.75 0.50	6.25 8.75	16.58 21.41
Untreated control	- - -	12.00	8.25	12.75	13.00	1.75	3.63
LSD(P=0.05)		1.55	0.69	1.79	1.58	1.62	6.04

[1]Number of marketable cabbage heads

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.