

CONTROL OF LEPIDOPTEROUS PESTS ON CABBAGE, 2001

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Interpretive Summary

All insecticide treated plots produced more marketable Cabbage heads than the untreated plots. Plots treated with any rate of RH-2485, Spinosad, or Confirm produced the least yield. Plots treated with RH-2485 showed phytotoxic symptoms.

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 'Stone Head' cabbage were set on 1 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 CO₂ hand sprayer calibrated to spray 60.5 gpa at 40psi on 5, 11, 18, 26 June and on 2 July. The adjuvant CS-7 was added to all RH-2485 and Confirm treatments at 0.1% v/v. There were about 20% cabbage loopers (CL) and 80% imported cabbageworms (ICW) on all treatments and evaluation dates. Newly-damaged heads were counted on 10 plants in the middle row of each plot on 13, 20, 26 June and on 3 July. Number of marketable heads and yield were determined on 9 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. 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. Phytotoxic symptoms were evident in plots treated with RH-2485. Plots treated with Danitol, Asana,

S-1812, and the combinations of S-1812 with Asana, Danitol, Dipel, and Xentari produced the highest number of marketable heads (Table 1).

Table 1. Mean Number Newly Damaged Cabbage Heads and Marketable Yield Evaluated at The University of Tennessee Plateau Experiment Station, Crossville, 2001.

Treatment	Rate lb(AI)/A	Newly Damaged/Row			No. Markett Heads ¹	Phyto (Burn)	Yield Ton/A
		20 Jun	26 Jun	3 Jul			
S-1812 35WP	0.100	1.50	1.25	0.75	9.25	0.00	5.6
S-1812 35WP	0.150	1.25	1.50	0.25	9.75	0.00	6.4
S-1812 35WP	0.200	1.25	1.00	0.50	10.00	0.00	5.9
Spinosad 2 SC	0.045	1.00	0.50	0.75	9.25	0.00	4.9
RH-2485 80WP	0.150	1.76	1.50	0.50	9.50	0.00	4.9
Asana .66 EC	0.036	0.00	0.00	0.25	9.75	0.00	5.9
Danitol 2.4 EC	0.200	0.25	0.00	0.00	10.00	0.00	6.3
Danitol 2.4 EC	0.100	0.00	0.00	0.25	10.00	0.00	6.3
Danitol 2.4EC	0.300	0.50	0.25	0.25	9.75	0.00	6.3
RH-2485 80WP	0.100	1.50	0.00	2.00	7.25	7.25	4.1
RH-2485 80WP	0.050	3.75	3.50	4.50	5.25	5.75	2.1

Confirm 2 FL	0.125	0.75	1.00	1.00	8.25	0.00	4.30
Danitol 2.4EC +	0.100						
S-1812 35WP	0.100	0.75	0.25	0.50	9.50	0.00	6.79
Danitol 2.4EC +	0.200						
S-1812 35WP	0.100	0.00	0.00	0.00	10.00	0.00	7.09
Dipel 100DF +	0.500						
S-1812 35WP	0.100	1.75	1.25	0.00	10.00	0.00	6.44
Asana XL .66EC + S- 1812 35WP	0.020						
	0.100	0.00	0.00	0.00	10.00	0.00	7.47
Xentari 100DF +	0.500						
S-1812 35WP	0.100	0.50	0.25	0.25	9.75	0.00	6.56
Asana XL .66EC	0.020	1.25	0.25	0.50	9.00	0.00	5.80
Dipel 100DF	0.500	1.00	0.25	0.50	9.50	0.00	5.50
Untreated control	---	8.75	9.75	9.250	0.75	0.00	0.21
LSD(P=0.05)		1.44	0.79	0.99	1.00	0.64	1.10

¹Number of marketable cabbage heads

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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.