(E10)

CABBAGE: *Brassica oleracea* L., 'Bravo'

REDUCED RISK INSECTICIDE EVALUATION FOR CONTROL OF LEPIDOPTERAN PESTS IN CABBAGE, SPRING 2004

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Diamondback moth (DBM): *Plutella xylostella* (L.)
Imported cabbageworm (ICW): *Pieris rapae* (L.)

'Bravo' cabbage was transplanted at the E.V. Smith Research Station in Shorter, AL on 5 Mar. Treatments were arranged in a RCB design with three replications. Plots were 45 × 30 ft with plants spaced 1.5 ft apart within a row and 3 ft between rows, and separated by a 50-ft alley. Each plot consisted of 300 plants, the plants were grown bare ground, and a pre-season fire ant treatment was done to minimize mortality due to the ants girdling the plants. A standardized cabbage looper equivalent (CLE) method was used to determine when plots were to be treated (1 CLE = 10 DBM larvae = 1.5 ICW larvae). When the plots reached a threshold of 0.5 CLE per plant they were treated. Treatment applications were made with a CO_2-pressurized backpack sprayer using a 3-ft boom with 3 nozzles calibrated to deliver about 25 gpa at 40 psi. In general, each plot received 2 to 3 treatment applications for the season.

Plots were evaluated weekly for pest infestation by sampling ten randomly selected plants per plot for larvae and pupae of DBM and ICW. At harvest, ten randomly selected plants per plot were harvested and rated for caterpillar feeding damage and marketability using Greene's damage rating scale ranging from 1 to 6 with ratings greater than 3 considered to be unmarketable. In addition, the weight of harvested cabbage heads were taken and compared between treatments. Data were subjected to ANOVA and means were separated using Fisher's LSD ($P \leq 0.05$).

All treatments resulted in a significant reduction in DBM and ICW larvae and immatures (larvae + pupae) compared with the untreated control. Similarly, all treatments resulted in significantly lower cabbage damage and better marketability rating compared with the untreated control. There was a significant difference in damage (marketability) rating among the treatment. The lowest damage ratings were achieved with Entrust and Xentari, and these were significantly lower than ratings in plots treated with the Xentari + Dipel mixture. However, all the treatments provided a marketability rating of less than 3. The highest mean head weight was achieved with Entrust and this was significantly higher than mean head weights in plots treated with the VBC-60064 (50% Xentari + 50% Dipel mixture), or in untreated control plots.

Treatment/ formulation	Rate amt product/acre	Average no. of applications/plot	Mean no. per plant per wk				Marketability rating	Head weight (kg)
			DBM		ICW			
			Larvae	Immatures[a]	Larvae	Immatures[a]		
Dipel DF	1.0 lb	2.8	0.13b	0.22b	0.30b	0.92b	1.90bc	3.21ab
Xentari DF	1.0 lb	2.3	0.10b	0.13b	0.22b	0.32b	1.77c	3.25ab
VBC-60064	2.0 lb	2.8	0.17b	0.21b	0.30b	0.36b	2.43b	2.83b
EnTrust 80WP	2 oz	2.3	0.10b	0.14b	0.24b	0.30b	1.45c	3.43a
Untreated control	--	--	0.36a	0.47a	1.50a	2.27a	5.00a	2.76b

Means in columns followed by the same letter are not significantly different ($P > 0.05$, LSD).
[a]Immature is defined as the sum of the larvae and pupae.