(E13)

CABBAGE: *Brassica oleracea* L., 'Solid Blue'

CONTROL OF LEPIDOPTERAN PESTS ON CABBAGE WITH VARIOUS INSECTICIDES, 2002

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Diamondback moth (DBM): *Plutella xylostella* (L.)
Cross-striped cabbageworm (CSW): *Evergestis rimosalis* (Guenée)
Great southern white butterfly (GSW): *Ascia monuste* (L.)
Cabbage looper (CL): *Trichoplusia ni* (Hübner)
Cabbage webworm (CW): *Hellula rogatalis* (Hulst)

A large number of Lepidopteran pests may attack cole crops in south Florida although Diamondback moth (DBM) is almost always the most numerous and destructive. Furthermore, it has a long history of pesticide resistance, requiring new chemistry periodically to achieve satisfactory control. For this trial, four new or recently labeled insecticides were evaluated for efficacy in cabbage against the five lepidopteran pests that appeared. Two sets of three beds 240-ft long on 6-ft centers and separated by a 15-ft drive were prepared by centering a single drip-tape with 12-inch emitter spacing on the top of each 6-inch high bed before covering with white-face polyethylene mulch. Greenhouse-grown cabbage seedlings were transplanted on 6 Feb in a single row at 18-inch spacing and fertigated with an 8-0-8 mixture to provide a total of 150 lb N and K/acre for the growing season. The middle bed in each set was planted with collards 8 Jan and left untreated to increase pest pressure. The remaining four rows were each considered a replicate and divided into eight plots 30-ft long with 21 plants per plot to which, treatments were assigned in an RCB design. Plants (n = 15 per plot) were checked for the presence of target pests on 5 Apr and treatments initiated after an average of 40%, showed feeding damage from Lepidoptera, with no significant differences among plots or replicates (LSD, $P < 0.05$). Treated plants were sprayed on 8, 15, 22 and 29 Apr at a rate of 33 gpa using a high clearance sprayer equipped with three yellow hollow cone Albuz® ceramic nozzles/row, one overhead and one on each side, operating at 200 psi of pressure. Evaluations were made on 12, 19 and 26 Apr, and 3 May on 15 randomly selected plants/plot, counting larvae and pupa of the five Lepidopteron species that appeared in the trial. Larvas were divided into small and large with the small being the first 2 instars and the large being the later instars. Foliar damage was rated by percent defoliation as 0 = no damage, 1 = 0-1% with minor feeding on outer leaves, 2 = 2-5% but no head damage, 3 = 6-10% minor feeding on head, 4 = 11-30% leaf damage with moderate feeding on head and 5 ³ 30% with numerous feeding scars on head. On 6 May the 15 best plants in each plot were harvested and graded for marketability based on the amount of insect damage. Fancy heads had no more than 1% insect damage to wrapper leaves and no damage to the head. A Standard had between 2% and 10% damage to wrapper leaves and no damage to head. Damaged heads were counted as unmarketable.

The primary pest was DBM accounting for over 90% of larvae observed. When present, Great southern white butterfly (GSW) caused extensive damage due to their gregarious habits and large size of the later instars. Cross-striped cabbageworm (CSW) was the most destructive for young plants by feeding on the

growing point, thereby distorting the head. The other two species were present in small numbers. All treatments were effective in controlling these pests and reducing damage over the season compared to the untreated check, with no other significant differences observed. The number of marketable heads in the highest (Fancy) grade was reduced more that 62% in the untreated plants compared to other treatments among which there were no significant differences. However, in terms of weight, only plants sprayed with the high rate of Avaunt or Spintor produced significantly more Fancy heads than the untreated check. Treatment effects for Standard and unmarketable heads were not significant. Thus, this trial identified a number of different options for insecticidal control of Lepidopteran pests of cabbage in south Florida.

Table 1.

Treatment/ formulation	Rate lb (AI)/acre	Mean no. over all dates				Fancy heads harvested[c]	
		Small[a]	Large[a]	Pupa[a]	Damage[b]	Number	Weight (lbs)
Proclaim 5SG	0.0074	0.00b	0.23b	0.12b	0.67b	9.75a	21.85ab
Proclaim 5SG	0.0100	0.00b	0.12b	0.00b	0.44b	10.50a	21.20ab
Avaunt 30WG	0.0650	0.06b	0.12b	0.06b	0.53b	12.25a	27.60a
SpinTor 2SC	0.0620	0.06b	0.06b	0.06b	0.42b	12.75a	29.28a
Untreated check	—	5.37a	26.43a	3.69a	2.05a	4.75b	9.80b

Means in columns followed by the same letter are not significantly different (LSD, $P < 0.05$).
[a] Mean of total numbers from 15 heads examined per plot, which includes all species.
[b] Mean damage per head.
[c] Mean per plot for best 15 plants harvested.