

(E28)

CORN (SWEET): *Zea mays* L., 'GSS 5771-VP'

INSECTICIDAL CONTROL OF FALL ARMYWORM ON SWEET CORN WITH EXPERIMENTAL AND LABELED INSECTICIDES, 2002

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Fall armyworm (FAW): *Spodoptera frugiperda* (J. E. Smith)
Corn earworm (CEW): *Helicoverpa zea* (Boddie)

'Fall armyworms' is a perennial problem for sweet corn growers in southern Florida due to the prevalence of the pest and its penchant to ruin the ear through direct feeding. New products may offer advantages of low toxicity and selectivity, but must measure up to the standards of efficacy to be adapted by growers. For the present trial we prepared six raised beds 32-inches wide and 240-ft long on 6-ft centers covered with white polyethylene mulch and a single drip tape irrigation line with 12-inch emitter spacing. Plants were provided with 225 lb/acre of 19-0-19 bottom mix at bedding and fertigated with 8-0-8 liquid fertilizer to bring the total N for the season to 200 lb/acre. Beds were divided into two, three row sets separated by a 15-ft roadway. The center row of each three-row set was left untreated to provide pest inoculum. The remaining four rows were divided into six single row plots in a RCB design with four replications and planted on 3 Sep by direct seeding at 10-inch spacing. Five weekly spray applications were made using a high clearance sprayer equipped with two overhead nozzles fitted with ceramic Albuz "yellow" hollow cone tips per row delivering 22 gpa at 200 psi pressure. Treatments were initiated 30 Sep after a sample of 200 plants per row indicated a 4.3% damaged rate by FAW. Subsequently, the number of plants with live larva or fresh frass present was recorded weekly for 4 weeks during the whorl stage on 35 centrally located plants per plot. Mature ears were harvested on 4 and 8 Nov from the same 35 plants in the center of each plot. Any damage to the ear was considered sufficient to render it unmarketable. Weight and number of marketable and non-marketable ears was recorded.

Fewer larvae were seen on treated plants than on the untreated checks. Lowest incidence of larvae was observed on plants treated with Lannate, but not significantly less than those treated with Warrior. The most marketable ears were harvested from the Warrior treatment, but not significantly more than XDE-225. There was no significant difference in the number of marketable ears between the Lannate treatment and the untreated check. Untreated plants lost up to 32% of their yield by weight compared to the best treatments. Of 166 larvae recovered from the damaged ears, only 4% were CEW scattered among the treated and untreated plots, the rest being FAW. All treated plants produced fewer damaged ears than those untreated, but again, Lannate stood out as being less effective than the remaining treatments. Given that Lannate is a standard for FAW control, good performance was observed from the other treatments.

Florida Agricultural Experiment Station Journal Series No. N-023007.

Table 1.

Treatment/ formulation	Rate lb (AI)/ acre	% plants with larva	Combined harvest data from 35 plants per plot			
			Marketable		Non-marketable	
			Number	Weight (lb)	Number	Weight (lb)
XDE-225 0.5 SC	0.0125	9.2b	45.5a	28.3ab	6.0b	3.4b
Warrior (T) 1 L	0.0249	2.1cd	46.5a	32.2a	6.5b	3.6b
Lannate 2.4 LV	0.3750	0.6d	38.3b	26.0bc	14.8ab	8.7b
Untreated check	—	18.1a	34.5b	22.0c	23.3a	14.1a

Means in columns followed by the same letter are not significantly different (LSD, $P < 0.05$).