

CORN (Sweet): *Zea mays* (L.) 'Primetime Plus'
Fall armyworm (FAW) *Spodoptera frugiperda* (J.E. Smith)

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INSECTICIDAL CONTROL OF FALL ARMYWORM ON SWEET CORN WITH BT AND SYNTHETIC PYRETHROIDS, 2001: Fall armyworms are a perennial problem for sweet corn growers in southern Florida that require stringent control because even slightly damaged ears are unmarketable. In this trial we evaluated formulations of pyrethroids, and the biologically derived insecticides, spinosad and *Bacillus thuringiensis* (Bt). Six raised beds 32 inches wide and 240 ft long on 6 ft centers were fertilized with a bottom mix of 400lbs/acre 5-16-8. A single driptape irrigation line with emitters spaced every 12 inches was laid on the surface of each bed and the bed was covered with white-face polyethylene mulch. Beds were divided into 2, 3-row sets separated by either a 15 foot of uncultivated land. The center row of each 3 row set was left untreated to provide pest inoculum. The remaining 4 rows were divided into 7 single row plots in a RCB design with 4 replications and planted 7 Sep by direct seeding at 10 inch spacing. Additional fertilizer in liquid form with an analysis of 8-0-8 was injected through the irrigation system to provide a total of 150 lbs nitrogen/acre for the growing season. Nine weekly spray applications were made using a high clearance sprayer equipped with 2 overhead nozzles fitted with ceramic Albus® "yellow" hollow cone tips per row with delivery pressure of 200 psi and rate of 22 GPA. A pre-treatment sample on 20 Sep of 200 plants per row indicated 20.3% were damaged by FAW and the treatments were initiated 21 Sep. The Bt treatment was switched to SpinTor at the same rate as the other SpinTor treatment on 26 Oct when tassels were emerging. The number of plants with live larva present was recorded weekly for 6 weeks on 20 randomly selected plants per plot after the initiation of the treatments. Mature ears were harvested on 14, 19 and 26 Nov from the same 20 plants in the center of each plot. Ears were evaluated for marketability recording total weight and number of ears.

Fewest larvae were seen on plants treated with SpinTor, followed by the pyrethroid treatments and finally CER 1604 which however had fewer larvae than the untreated control. The greatest number and weight of marketable ears was seen from plants treated with SpinTor and the high rate of Karate Z, although not significantly different from the remaining treatments except for CER 1604, which however produced almost twice the control. Fewest unmarketable ears were seen from plants treated with SpinTor, although not significantly different from all but CER 1604 and the low rate of GF-317 which was still around half of the untreated. Thus, all treatments provided significant control of FAW.

Treatment/ formulation	Rate amt/acre	% plants with larva	Combined harvest data from 20 plants per pl			
			Marketable		Nonmarketable	
			No.	Wt (lbs)	No.	Wt (
Karate Z 2.1CS	0.0249 lb ai	0.6c	41.5a	18.9a	8.3bc	3.0
SpinTor 2SC	0.0936 lb ai	0.1d	40.5a	18.5a	4.3c	1.7
GF-317 0.5CS	0.0125 lb ai	0.6c	37.3a	15.0ab	7.8bc	3.0
Karate Z 2.1CS	0.0075 lb ai	0.8c	33.3ab	14.0ab	15.3bc	6.0
CER 1604	1 lb product	11.9b	31.4ab	14.0ab	20.8b	7.4
GF-317 0.5CS	0.0037 lb ai	0.7c	25.8b	12.1b	18.0b	7.4
Untreated control	—	24.5a	13.0c	5.3c	34.0a	13.1

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

