

(E37)

**CORN (SWEET):** *Zea mays* (L.) 'Primetime Plus'

## **INSECTICIDAL CONTROL OF FALL ARMYWORM ON SWEET CORN WITH BT AND SYNTHETIC PYRETHROIDS, 2001**

**P. A. Stansly and J. M. Conner**

University of Florida/IFAS

Southwest Florida Research and Education Center

2686 State Road 29 North

Immokalee, FL 34142-9515

Phone: (941) 658-3427

Fax: (941) 658-3470

E-mail: [pas@icon.imok.ufl.edu](mailto:pas@icon.imok.ufl.edu)

Fall armyworm (FAW): *Spodoptera frugiperda* (J. E. Smith)

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 400 lb/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 two 3-row sets separated by 15 ft of uncultivated land. The center row of each 3-row set was left untreated to provide pest inoculum. The remaining four rows were divided into seven single-row plots in an RCB design with four replications and planted on 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 lb nitrogen/acre for the growing season. Nine 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 with delivery pressure of 200 psi and rate of 22 gpa. A pretreatment 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 larvae present was recorded weekly for six 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 check. 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 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 check. Thus, all treatments provided significant control of FAW.

TABLE 1.

Treatment/ formulation	Rate amt/acre	% plants with larva <sup>a</sup>	No. mature ears/20 plants/plot <sup>a</sup>			
			Marketable		Unmarketable	
			No.	Wt (lb)	No.	Wt (lb)
Karate Z 2.1CS	0.0249 lb (AI)	0.6 c	41.5 a	18.9 a	8.3 bc	3.0 bc
SpinTor 2SC	0.0936 lb (AI)	0.1 d	40.5 a	18.5 a	4.3 c	1.7 c
GF-317 0.5CS	0.0125 lb (AI)	0.6 c	37.3 a	15.0 ab	7.8 bc	3.0 bc
Karate Z 2.1CS	0.0075 lb (AI)	0.8 c	33.3 ab	14.0 ab	15.3 bc	6.0 bc
CER 1604	1 lb product	11.9 b	31.4 ab	14.0 ab	20.8 b	7.5 b
GF-317 0.5CS	0.0037 lb (AI)	0.7 c	25.8 b	12.1 b	18.0 b	7.4 b
Untreated check		24.5 a	13.0 c	5.3 c	34.0 a	13.0 a

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

<sup>a</sup>Combined data for all samplings.