

(E)

CORN (Sweet): *Zea mays* (L.) ‘Silver Queen’

**INSECTICIDAL CONTROL OF FALL ARMYWORM ON SWEET CORN WITH
EXPERIMENTAL AND LABELED INSECTICIDES, 2004**

Philip A. Stansly

University of Florida/ IFAS

Southwest Florida Res. and Ed. Center

2686 State Road 29 North

Immokalee, FL 34142-9515

Phone: (239) 658-3427

Fax: (239) 658-3469

Email: pstansly@ufl.edu

James M. Conner

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

Corn earworm (CEW): *Heliocoverpa zea* (Boddie)

Fall armyworm (FAW) 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, with corn earworm (CEW) usually acting as a secondary pest. Carbamates and pyrethroids continue as standards although frequency of application is high and any improvement in efficacy can have a positive impact on cost or efficiency of control. For the present trial we prepared three raised beds 32 inches wide and 240 ft long on 6 ft centers covered with white polyethylene mulch under which was placed a single drip tape irrigation line with 12 inches emitters spacing. Plants were provided with 225lb/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 4 replications and treatments assigned in a RCB design in single row plots. Corn was direct seeded 26 Aug at 10 inch spacing. Seven weekly spray applications were made using a high clearance sprayer equipped with 2 overhead nozzles fitted with ceramic Albuz® “yellow” hollow cone tips per row delivering 22 gpa at 200 psi pressure. Treatments were initiated 14 Sep after a sample of 25 plants per plot were examined with a 12 % infection rate by FAW with no significant difference (LSD, $P < 0.05$) between replications. Subsequently, the number of plants with live larva or fresh frass present was recorded weekly for 6 weeks on 25 centrally located plants per plot. Mature ears were harvested on 2 Nov from 36 row feet per plot. Any damage to the ear was considered sufficient to render it unmarketable. Weight and number of marketable and non-marketable ears was recorded. Larvae found in damaged ears were identified as either FAW or CEW.

More than 30% of unsprayed plants were infested compared to less than 7% of treated plants, with no difference among the latter. Similarly, significantly greater number and weight of ears were harvested from treated plants with no differences among the latter. However, fewer damaged ears were harvested from plants sprayed with Proaxis compared to those treated with the other 2 insecticides, and there were more damaged ears from untreated plants than all others.

No significant differences among treatments were observed in number of FAW found in damaged ears at harvest. In contrast, fewer CEW were seen in ears from plants treated with Proaxis or Warrior compared to Lannate with more yet CEW found in ears from untreated plants. Therefore, treatment effects on yield appeared to be due more to damage from CEW than from FAW.

Florida Agricultural Experiment Station Journal Series No. N-02647

Treatment/ formulation	Rate product/ acre	% Plants with larvae ¹	<u>Yield</u>					
			Marketable		Unmarketable			
			Number	Weight (lbs)	Number	Weight (lbs)	FAW (No.)	CEW (No.)
Proaxis 0.5 CS	3.84 fl oz	6.5b	43.4a	25.5a	18.4c	11.0c	4.8 a	1.5c
Warrior 1 CS	3.84 fl oz	4.0b	41.8a	25.0a	26.1b	16.0b	5.8 a	3.0c
Lannate 2.4 LV	1.25 pt	6.0b	33.7a	19.4a	26.8b	16.0b	9.0 a	8.0b
Untreated check	—	30.8a	14.3b	7.1b	45.6a	25.4a	14.5a	24.3a

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

¹Mean of 25 plants per evaluation over 6 evaluations

Part II: Materials Tested for Arthropod Management

CORN (Sweet): Zea mays (L.) 'Silver Queen'

INSECTICIDAL CONTROL OF FALL ARMYWORM ON SWEET CORN WITH EXPERIMENTAL AND LABELED INSECTICIDES, 2004

Philip A. Stansly

University of Florida/ IFAS
Southwest Florida Res. and Ed. Center
2686 State Road 29 North
Immokalee, FL 34142-9515
Phone: (239) 658-3427
Fax: (239) 658-3469
Email: pstansly@ufl.edu

Common name	Trade name/ Cultivar	Concentration/ Formulation	Chemical name/resistance	Manufacture/source
gamma-cyhalothrin	Proaxis	0.5CS	Cyclopropanecarboxylic acid, 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-demethyl,cyano(3-phenoxyphenyl)methyl ester	United Agri Products 7251 W 4th Street Greeley, Colorado 80634 Phone: 970-356-4400 and Tenkoz, Inc. 100 North Point Center East, Suite 330 Alpharetta, GA 30022
lambda-cyhalothrin	Warrior	1CS	(1 α (5*),3 α (Z)-(±)-cyano-(3-phenoxyphenyl)methyl-3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-	Syngenta Crop Protection P.O. Box 18300 Greensboro, NC 27419

			dimethylcyclopropanecarboxylate	
methomyl	Lannate	2.4LV	(S-methyl-N- ((methylcarbamoyl)oxy)thioacetimidate)	DuPont Company Stine-Haskell Research Center Dupont Crop Protection Newark, DE 19711