

(E62)

TOMATO: *Lycopersicon esculentum* (Mill.) 'Neptune'

CONTROL OF SOUTHERN ARMYWORM AND TOMATO PINWORM ON STAKED TOMATO, 2006

P. A. Stansly

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

R. E. Riefer

Southern Armyworm (SAW): *Spodoptera eridania* (Cramer)
Tomato pinworm (TPW): *Keiferia lycopersicella* (Walsingham)

Southern armyworm and tomato pinworm are the principal lepidopteran pests of fresh market tomatoes in southwest Florida. This trial compared present standards with a new chemical class that could provide growers an additional option for controlling these pests. Greenhouse-raised tomato seedlings were planted at the Southwest Florida Research and Extension Center, Immokalee, FL on 6 Mar 2006 at 36-inch spacing on 3 raised beds 240 ft long on 6-ft centers, each covered with black polyethylene film. A seedling of *Amaranthus viridis* was placed between each tomato plant to serve as an attractant for SAW. Admire Pro (imidacloprid, 42.8%) was applied at 7 oz/acre as a drench in 50 ml of water at transplant to control whiteflies. Maintenance fungicides Kocide® @ 3 lb/acre, Manzate® 75DF @ 1.5 lb/acre, Tanos® 8 oz/acre and Gavel® @ 1.5 lb/acre were applied as needed. Plants were irrigated and fertilized using Netafim® drip tape with 12-inch spacing between emitters and sprayed. The treated beds were divided into plots 30 ft long to which 7 treatments (Table 1) were assigned in a completely randomized block design with 4 replications. Treatments were applied using a high clearance sprayer made from a raised John Deere® model 990 tractor fitted with a HyPro model 9910-D50 diaphragm pump (maximum flow 14 gpm) connected to two vertical booms operating at 200 psi. Each boom was fitted with 3 or 4 ceramic yellow Albus® ATR hollow cone nozzles to deliver 60 or 80 gpa respectively, depending on plant height. Number of TPW larvae and feeding damage on 4 plants per plot was monitored weekly 5 times starting 31 Mar. Damage was rated as 0 = no damage, 1 = 1% leaflets with damage, 2 = 2 to 5%, 3 = 6 to 15%, 4 = 16 to 30% and 5 > 30%.

Few SAW were seen during the course of the trial, although TPW larvae built up toward the end. More damage from SAW was observed on check plants with no differences among treated plants (Table 2). Fewest TPW larvae were seen on plants treated twice with XDE-175 @ 61 g (ai)/ha and once with 105 g (ai)/ha SpinTor, although not significantly less than the lower rates of XDE-175 or with Avaunt. TPW on plants treated with Intrepid were not different from the check. There were no differences in mean numbers or weight of fruit among treatments.

Table 1

Treatment	Product	Rate (g(AI)/ha)	17-Apr 60 gpa	24-Apr 80 gpa	8-May 80 gpa
1	Check				
2	Intrepid 2F	140	x	x	x
3	Avaunt 30WG	74	x	x	x
4	XDE-175 SC	26	x	x	x
5	XDE-175 SC	44	x	x	x
6	SpinTor 2SC or	105		x	
7	XDE-175 SC	61	x		x

Table 2

Treatment	Damage	TPW	Fruit/8 plants (No.) ^a	Fruit/8 plants (lbs)
1	0.32a	0.94a	16.7	7.0
2	0.08b	0.83ab	20.2	8.8
3	0.08b	0.47bc	19.3	8.2
4	0.15b	0.61abc	19.8	8.5
5	0.07b	0.56abc	22.1	10.3
6	0.1b	0.14c	19.9	9.2

Means in columns followed by the same or no letter are not significantly different (LSD, $P > 0.05$) ^aSum of small, medium, large and X-large from 16 plants over 2 harvests