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TOMATO: *Lycopersicon esculentum* (Mill.) ‘Neptune’

**CONTROL OF SOUTHERN ARMYWORM (SAW) AND TOMATO PINWORM (TPW)
ON STAKED TOMATO, 2006**

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Southern Armyworm *Spodoptera eridania* (Cramer)

Tomato pinworm *Keifeira 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 March 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/ac as a drench in 50 ml of water at transplant to control whiteflies. Maintenance fungicides Kocide® @ 3 lb/ac, Manzate® 75DF @ 1.5 lb/ac, Tanos® 8 oz/ac and Gavel® @ 1.5 lb/ac 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 Albuz® 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 March. 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 untreated 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 untreated check. There were no differences in mean numbers or weight of fruit among treatments.

Table 1

Treatment	Product	Rate	17-Apr	24-Apr	8-May
1	Untreated	(g (ai)/ha	60 gpa	8 gpa	80 gpa
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	SAW	TPW	Fruit per 8	Fruit per 8
	Damage	Larvae	plants (No.) ^a	plants (lbs)
1	0.32 a	0.94 a	16.7	7.0
2	0.08 b	0.83 ab	20.2	8.8
3	0.08 b	0.47 bc	19.3	8.2
4	0.15 b	0.61 abc	19.8	8.5
5	0.07 b	0.56 abc	22.1	10.3
6	0.1 b	0.14 c	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

Part II: *Materials Tested for Arthropod Management*

TOMATO: *Lycopersicon esculentum* Mill. ‘Florida 47’

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Common name	Trade name	Concentration/ Formulation	Chemical name	Manufacture/source
imidacloprid	Admire Pro	4.6FL	1_((6-Chloro-3-pyridinyl)methyl)-N-nitro-2-imidazolidinimine	Bayer CropScience LP P.O. Box 12014 1 T.W. Alexander Drive Research Triangle Park, North Carolina 27709
indoxacarb	Avaunt	30 WG	(S)-methyl 7-chloro-2,5-dihydro-2-[[[(methoxycarbonyl)[4(trifluoromethoxy)phenyl]amino]-carbonyl]indeno[1,2,-e][1,2,4]oxadiaxine-4 ^a -(3H)-carboxylate	E.I. du Pont de Nemours and Company Wilmington, Delaware 19898
methoxyfenozide	Intrepid	2 F	Benzoic acid, 3-menthoxy-2methyl-, 2-(3,5-dimethylbenzoyl)-2-(1,1-dimethylethly)hydrazide	Dow AgroSciences LLC 9330 Zionsville Road Indianapolis, IN 46268-1189
spinosad	Spintor	2 SC	Spinosad(a mixture of spinosyn A and spinosyn D)	Dow AgroSciences LLC 9330 Zionsville Road Indianapolis, IN 46268-1189
Not Given	XDE-175	SC	Not Given	Dow AgroSciences LLC 9330 Zionsville Road Indianapolis, IN 46268-1189

