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

CONTROL OF SOUTHERN ARMYWORM ON STAKED TOMATO, 2006

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

Robert E. Riefer

Southern Armyworm (SAW): *Spodoptera eridania* (Cramer)

Southern armyworm is the principal early-season pest of fall tomatoes in southwest Florida, attacking foliage in the early instars but causing most damage later by fruit feeding. In this trial we evaluated a range of insecticide types from selective to broad spectrum. Greenhouse-raised seedlings were planted 18 Sep at 18-inch spacing in 6 raised beds on 6-ft centers, each covered with whiteface polyethylene film. Plants were irrigated and fertilized using Netafim® drip tape with 12-inch spacing between emitters. Beds were divided into plots 30 ft long, each with 20

plants to which 12 treatments were assigned in a completely randomized block design with 4 replications. A precount 23 Oct showed an average of 1.3 hatching egg masses per 12 plants over the entire block. Treatments were applied 30 Oct and again 1 Dec using a high clearance sprayer with two vertical booms operating at 200 psi. Each boom was fitted with 2 horizontally directed ceramic yellow@ Albus ® hollow cone nozzles for the first treatment to deliver 60 gpa. An additional nozzle added to each boom for the next application to deliver 80 GPA. Number of larvae and damage on 12 plants per plot were monitored weekly 5 times starting 12 Nov. 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%. All fruit of marketable size from 12 plants per plot was harvested on 3 and 16 Dec. Fruit was classified as marketable or not and sized on a commercial grading table.

More foliar damage was observed in treated plots compared to untreated plots, with no significant difference among the former (data not shown). There were also no significant differences among spray treatments which greatly reduced SAW populations compared to the untreated check. Fewest and least marketable fruit were harvested from untreated plants compared to treated plants, again with no difference among the latter. Significantly more wormy fruit were taken from untreated plants than treated plants. Among treated plants, significantly more wormy fruit was taken from those treated with the low rate (4 oz/ac) of XDE-175 than the remaining treatments including the 5 oz/ac rate of XDE-175. Thus, 4-5 oz/ac appeared to be the critical rate interval under the conditions of this trial.

Material	Form.	Rate		Larvae*	Marketable Fruit		Wormy Fruit	
				(No./12 plants)	No./12 plants)	lbs/12 plants)	No./12 plants)	lbs/12 plants)
XDE-175	SC 120 g/l	6.96	fl oz/ac	0.20 b	62.4 a	31.7 a	1.83 c	0.97 c
XDE-175	SC 120 g/l	6.04	fl oz/ac	0.55 b	62.9 a	33.1 a	1.92 c	0.96 c
XDE-175	SC 120 g/l	5	fl oz/ac	0.80 b	67.5 a	35.3 a	3.92 c	1.76 c
XDE-175	SC 120 g/l	4	fl oz/ac	2.45 b	50.6 ab	25.5 ab	14.42 b	7.15 b
E2Y45	SC 200 g/l	0.066	lb ai/ac	0.6 b	67.3 a	35.8 a	4.42 bc	2.0 c
E2Y45	SC 200 g/l	0.044	lb ai/ac	0.1 b	54.4 a	29.7 a	2.08 c	1.46 c
Battalion	0.2 EC	16	fl oz/ac	0.55 b	60.8 a	35.7 a	3.33 c	1.73 c
Battalion	0.2 EC	12	fl oz/ac	0.7 b	65 a	35.6 a	5.42 bc	2.77 c
Baythroid XL	12.7%	2.8	fl oz/ac	0.95 b	62.1 a	29.7 a	4.5 bc	2.55 c
Novaluron	0.83 EC	12	fl oz/ac	0.1 b	47.9 ab	25.8 ab	3.83 c	1.94 c
Avaunt	WG 300g ai/kg	3.5	oz/ac	0.25 b	51.1 ab	25.6 ab	2.92	1.44c
Control	NA	0	n/a	27.3 a	5.25 b	2.61 b	55.92 a	21.07 a

* Larvae of all size categories averaged over 5 sample dates.