

TOMATO: *Lycopersicon esculentum* Mill, 'Agriset'

**CONTROL OF SOUTHERN ARMYWORM ON STAKED TOMATO WITH BIOPESTICIDES,
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Southern armyworm (SAW): *Spodoptera eridania* (Cramer)

Southern armyworm is the most damaging noctuid pest of tomatoes in southwest Florida. Selective synthetic and biopesticides, such as those tested here, are providing growers with control alternatives relatively compatible with biological control. Greenhouse-raised seedlings were planted 11 Sep at 18-inch spacing on two sets of three beds and fertigated through Netafim drip tape with 12-inch emitter spacing. The center bed in each set of three beds was left untreated to serve as a source of pest inoculum. The four treated beds were divided into plots 48 ft long to which seven treatments were assigned in a RCBD with four replications. Treatments were initiated after a mean of 0.2 armyworms per plant was observed on 12 plants per plot 24 Oct. A high-clearance sprayer was used, operated at 200 psi with two vertical booms, each fitted with ceramic yellow Albuz hollow-cone nozzles delivering 66 gpa with three nozzles per boom on 25 Oct and 1 Nov, going to four nozzles per boom for a rate of 88 gpa on, 8, 15, 22, and 29 Nov for a total of six applications. The adjuvant Latron B-1956 at 1 % v/v was added to all treatments. Six weekly evaluations were performed starting 31 Oct to monitor damage and larvae on 6 plants per plot. 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%. Two harvests were made from 12 plants per plot on 6 and 13 Dec. Fruit was evaluated for quality and size on a commercial grading table.

SAW predominated through the trial. The fewest SAW larvae were observed on plants treated with Avaunt and SpinTor, with no differences between the Bts and the untreated control. However, there was less damage seen on plants treated with Javelin WG and TTC-1508 than the check, although more than either Avaunt or SpinTor. Most total marketable fruit was harvested from plants sprayed with Avaunt, although not statistically different from SpinTor or Javelin. Among the Bts, only plants treated with Javelin produced a larger number of marketable fruit more than the control, although weight was not significantly different. Thus, SpinTor and especially Avaunt provided best protection, although significant protection was also achieved with Javelin.

TABLE 1.

Treatment/ formulation	Rate amt form/acre	Damage ^a		Marketable fruit				Unmarketable fruit	
				X-large		Total ^b		Total	
		No. larvae	Rating	No.	Wt (lb)	No.	Wt (lb)	No.	Wt (lb)
Javelin WG	1.0 lb	3.1 ab	1.1 c	176.0 ab	87.3 ab	331.0 bc	128.4 ab	44.3 bcd	15.7 bcd
TTC-1507	3 pt	4.8 a	1.5 ab	114.3 c	56.7 c	239.5 cd	89.3 c	92.3 ab	31.0 ab
TTC-1508	2 pt	1.4 ab	1.2 bc	136.0 bc	67.1 bc	296.0 bcd	108.4 bc	76.0 abc	25.8 abc
TTC-1515	3 pt	2.8 ab	1.4 ab	122.5 bc	61.7 bc	253.8 cd	95.5 bc	125.8 a	40.4 a
Avaunt 30 WG	0.045 lb (AI)	0.0 b	0.8 d	202.3 a	101.7 a	440.5 a	162.0 a	2.3 d	1.2 d
SpinTor 2 SC	0.067 lb (AI)	0.9 b	0.8 d	198.8 a	98.0 a	387.8 ab	147.3 a	19.3 cd	7.9 cd
Untreated check		5.0 a	1.6 a	97.8 c	48.9 c	203.0 d	77.4 c	112.5 a	40.1 a

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

^a Mean over all dates of total larval number and foliar damage per plant.

^b Mean number includes X-large and all other marketable fruit from 12 plants for two harvests.