

(E75)

**TOMATO:** *Lycopersicon esculentum* (Mill.), 'Phoenix'**SURVIVAL OF TOMATO FRUITWORM AND SOUTHERN ARMYWORM ON TOMATO LEAVES CHEMOGATED WITH BELT OR CORAGEN, 2010****Philip A. Stansly**

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Southern armyworm (SAW): *Spodoptera eridania* (Stoll)Tomato fruitworm (TFW): *Helicoverpa zea* (Boddie)

Lepidopteron pests can be devastating to tomato crops in south Florida, causing defoliation, fruit damage and yield reductions. The objective of this experiment was to evaluate residual effects on lepidopterans following drip applications of Belt and Coragen. Greenhouse-raised seedlings were transplanted at the Southwest Florida Research and Education Center in Immokalee on 15- Sep at 18-inch spacing in raised beds on 6-ft centers, each covered with whitefaced polyethylene film. An RCB design was used with 4 replications. The center row of each three-row section was left untreated throughout the experiment as a source of pest inoculum. Each plot contained 17 plants with three plants left between plots as an untreated buffer. A 12-3-12 granular fertilizer at a rate of 50 lb N/acre was applied preplant and fertigated daily as a 7- 0- 7 NPK liquid through drip tape with 4-inch emitter spacing. Kocide (3lbs/acre), Manzate 75 DF (1.5 lbs/acre), and Pro-phyte (4 pints/acre) were applied as needed for disease control, principally bacterial spot. All plants were treated to control whiteflies on 17 Sep with a 120 ml soil drench of a suspension of AdmirePro at 8.5 oz per acre using an EZ-Dose® applicator at 45 PSI and a flow rate of 3.7 gpm. Three rates of Belt and one of Coragen were applied by sectioning off each treated plot with a drip tape valve, pressuring the drip tape with 2 liter water and injecting 3 liter of the appropriate suspension followed by 3 liter of water using a 12 volt pump operating at 0.23 gpm on 6 Oct. On each of three sample dates (1, 15 Nov and 6 Dec), 1 mid-canopy leaflet was removed from 5 randomly selected plants in each of the plots, placed in a petri dish in a growth chamber room maintained at  $25.6 \pm 2$  °C. Three second instar larvae obtained from Benzon Research Inc. Carlisle, Pennsylvania, were placed in each petri dish and mortality and feeding damaged was assessed 4 days after exposure (Table 1). TFW was used on 1 Nov while SAW larvae were used on the other dates. The amount of feeding damage was rated from 0-10 with each increment corresponding to approximately a 10% increase in the amount of defoliation.

Only the Coragen treatment significantly reduced larval survival and feeding damage compared to the untreated plants on all sample dates. The 7.0 oz rate of Belt significantly reduced damage observed at 26 DAT as much as did Coragen and at 40 DAT, although less than did Coragen. This research was supported by industry gift(s) of pesticide and/or research funding.

Table 1

Treatment/ Formulation	Rate (Product/ac)	Live larvae after 4d (%)			Feeding damage after 4 d		
		TFW	SAW	SAW	TFW	SAW	SAW
		1-Nov 26 DAT	15-Nov 40 DAT	6-Dec 61 DAT	1-Nov 26 DAT	15-Nov 40 DAT	6-Dec 61 DAT
untreated		72.5ab	75.0ab	95.83a	3.20a	4.10b	5.25a
Coragen 20 SC	5.0 oz	43.3c	16.7c	82.92b	1.25b	1.25d	2.80b
Belt 4 SC	3.0 oz	73.3ab	75.8ab	98.33a	3.20a	4.30ab	5.30a
Belt 4 SC	5.0 oz	87.5a	88.3a	93.87a	3.15a	5.05a	4.58a
Belt 4 SC	7.0 pz	56.7bc	66.7b	94.17a	1.95b	3.15c	4.50a

Means followed within a column by the same letter are not significantly different (LSD P >0.05)