

(E62)

PEPPER (BELL) : *Capsicum annuum* (L.) 'Enterprise'

Southern armyworm (SAW); *Spodoptera eridania* (Stoll)

Beet armyworm (BAW); *Spodoptera exigua* (Hübner)

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IMPACT OF BIORATIONAL INSECTICIDES ON SOUTHERN ARMYWORM AND BEET ARMYWORM IN BELL PEPPER, 1997: The number of biorational products including *Bacillus thuringiensis* available to the grower is proliferating rapidly, without clear indications of their relative strength and weakness for control of particular pests in the field. The present study evaluated a number of such selective materials against two *Spodoptera* species attacking bell pepper in south Florida. Greenhouse-raised 'Enterprise' pepper plants were transplanted on 1 Oct at 10-inch spacing in single rows on 4 drip-irrigated beds, 32 inches wide and 240 ft long on 6-ft centers. Beds were fertilized by incorporating 800 lb/acre of 5-16-8 dry fertilizer with an additional 1.5 lb/acre/day of N and K applied through the drip system. When formed, the beds were fumigated with a 67/33% mixture of methyl bromide/chloropicrin at a rate of 300 lbs/acre, and covered with white polyethylene film. Each pair of beds was separated by an additional bed of bell pepper planted on 10 Sep and left untreated to serve as a source of inoculum. Each bed was divided into 30 ft long plots to which eight treatments were assigned in a RB design with four replications. Treatments were applied weekly for 3 wks beginning 17 Oct using a high clearance sprayer with two vertical and one horizontal boom, each fitted with one ceramic "yellow" Albuz™ hollow cone nozzle delivering spray at 200 psi for a rate of 32 GPA. A pre-treatment count of 25 plants/replication on 16 Oct revealed only one SAW and an average of less than one each of a small, medium, and large BAW/plant. Weekly evaluations beginning 21 Oct were made on 10 plants/plot. Total numbers of BAW and SAW per plant were recorded by size of larvae. On 9 Dec, plant damage was rated on 1-5 scale where 0 = no damage, 1 = 1-2% damage, 2 = 2-5% damage, 3 = 6-10% damage, 4 = 11-30% damage, and 5 = > 30% plant damaged. All fruit was harvested, counted and weighed on 9 Dec and 16 Jan. Data were analyzed with a GLM and Fisher's protected LSD.

Populations of either species were low throughout the trial, never reaching above 0.21 larvae/10 plants in the check nor above 0.09/10 plants in any treatment. No larva was observed on plants treated with Confirm. Likewise, no more than 1 worm-damaged fruit was harvested from 20 plants, none from plants treated with Confirm, Lannate or ABG-6292. Significant treatment effects on total marketable fruit weight were observed but these appeared to be due to field variation, imparted by the disease *Phytophthora capici* and other factors. Thus, low pest pressure permitted no clear inferences in regard to efficacy, although the least pest activity was seen on plants sprayed with Confirm.

Impact of biorational insecticides on southern armyworm and beet armyworm in bell pepper, 1997:

Confirm	3,5-Dimethylbenzoic acid 1-(1,1-dimethyl-ethyl)-2-(4-ethylbenzoyl) hydrazide	tebufenozide	70W	Rohm & Haas
Lannate	S-Methyl N-(methylcarbomoyl-oxy) thioacetimidate)	methomyl	2.4LV	DuPont
Lepinox	<i>Bacillus thuringiensis</i>	subspecies Kurstaki strain EG7826	15WDG	Ecogen
CRYMAX	<i>Bacillus thuringiensis</i>	subspecies Kurstaki strain EG7841	15WDG	Ecogen
XenTari	<i>Bacillus thuringiensis</i>	var. aizawai	WG	Abbott Laboratories
ABG-6292	<i>Bacillus thuringiensis</i>	var. kurstaki	WG	Abbott Laboratories