

(E)

**SQUASH:** *Cucurbita pepo* var. *meloepo* (L.) 'Medallion'

**CONTROL OF PICKLEWORM ON YELLOW CROOKNECK SUMMER  
SQUASH, 2005**

**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](mailto:pstansly@ufl.edu)

**Keith A. Jackson**

Pickleworm: *Diaphania nitidalis* (Stoll)

Pickleworm is a serious pest of squash, cucumber and cantaloupe in south Florida.

Larvae are not subject to insecticidal control once in the fruit, so must be controlled either in the bloom or while in transit. For this trial, greenhouse grown seedlings were

transplanted to the field on 25 March on raised beds covered with polyethylene mulch. Water and fertilizer were provided through drip tape. Twelve beds 250 ft in length were spaced 6 ft apart with 10-inch plant spacing within the row. Nova was sprayed weekly on all plots except the untreated check for disease control. A randomized complete block (RCB) design was used with 9 treatments, 4 replications, and 35 ft long plots. Each rep consisted of a set of three beds with the center left untreated to serve as the untreated check. Ten plants in the center of each plot were selected for weekly harvest from 25 April to 30 May. Blooms were also removed weekly from the remaining non-harvested plants in each plot to check for presence of larvae and damage. A high clearance sprayer was used operating at 180 pounds per square inch and 2.3 miles per hour with the spray delivered through two vertical booms using yellow Albuz® hollow cone nozzles that applied 10 gallons per acre each. Two nozzles on each boom were used when the plants were small with 3 additional nozzles on 18 April and a top center nozzle added on 5 May, maintaining product rate per acre constant by decreasing concentration to compensate for increased volume. Flower buds were sampled 4 times, on 21 Apr. and 2, 10, and 17 May. Fruit was harvested 6 times, on 25 and 29 Apr. and 9, 9, 16, 23 and 30 May.

Fewer worm-damaged buds than either control (with or without fungicide) were observed with all treatments except JMS Stylet oil and the low rate of Pure Spray Green (PSG) Oil. Fewest damaged buds were sampled from plants receiving the standard insecticide treatment, but not significantly less than either rate of Avaunt. All treatments except the two rates of PSG resulted in less worm-damaged fruit than the check, with least damage seen from plants treated with the standard or the high rate of Avaunt. The

lower rate of Avaunt, as well as Intrepid and JMS Stylet oil, also provided considerable protection of fruit.

Treatment	Product/formulation	Rate	Applications <sup>1</sup>	Damaged buds (%) <sup>2</sup>	Damaged fruit (%) <sup>3</sup>
Rotation -A	Intrepid 2F	.1250 lbs (AI)/acre	8,10,12,13,14	8.8 cd	17.5 c
	Nova 40W	.1250 lbs (AI)/acre	2,4,6,7,9,11,13		
Treatment -B	JMS Stylet Oil	.75 % vol/vol	1,3,5,8,10,12,13,14	22.0 a	17.6 c
Treatment -C	PureSpray Green Oil	.75 % vol/vol	1,3,5,8,10,12,13,14	12.7 bc	27.2 ab
Treatment -D	PureSpray Green Oil	1.5 % vol/vol	1,3,5,8,10,12,13,14	17.1 ab	25.7 ab
Treatment -E	Nova 40W	.1250 lbs (AI)/acre	2,4,6,7,9,11,13	19.9 a	23.7 bc
Rotation -F	Avaunt 30WG	.0450 lbs (AI)/acre	8,10,12,13,14	3.9 de	16.4 c
	Nova 40W	.1250 lbs (AI)/acre	2,4,6,7,9,11,13		
Rotation -G	Avaunt 30WG	.0656 lbs (AI)/acre	8,10,12,13,14	3.8 de	7.0 d
	Nova 40W	.1250 lbs (AI)/acre	2,4,6,7,9,11,13		
Treatment -H	Spintor 2SC	.1250 lbs (AI)/acre	8,12,14	1.5 e	8.5 d

<sup>1</sup> Application dates: 1= 4 Apr; 2= 7 Apr; 3= 11 Apr; 5= 18 Apr; 6= 21 Apr; 7= 27 Apr; 8= 28 Apr; 9= 4 May; 10= 5 May; 11= 11 May; 12= 12 May; 13= 20 May; 14= 26 May

	Assana XL .66EC	.0413 lbs (AI)/acre	10,13	
	Nova 40W	.1250 lbs (AI)/acre	2,4,6,7,9,11,13	
Treatment -I	Untreated			21.5 a                      31.6 a

<sup>1</sup>1 = 4 Apr; 2 = 7 Apr; 3 = 11 Apr ; 4 = 14 Apr; 5 = 18 Apr; 6= 21 Apr; 7=27 Apr; 8=28 Apr; 9= 4 May; 10= 5 May; 11= 11 May;  
12= 12 May; 13= 20 May; 14= 26 May

<sup>2</sup> Total % from 4 sampling dates

<sup>3</sup> Total % from 6 harvests

**Part II: Materials Tested for Arthropod Management**

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Common name	Trade name/ Cultivar	Concentration/ Formulation	Chemical name/resistance	Manufacture/source
esfenvalerate	Assana XL	0.66EC	(S)-cyano (3-phenoxyphenyl)methyl (S)-4-chloro-alpha-(1-methylethyl) benzeneacetate	DuPont Company Stine-Haskell Research Center Dupont Crop Protection Newark, DE 19711
horticultural oil	PureSpray Green Oil	100%L	Mixed hydrocarbons, principally aliphatic derived from petroleum (mineral sources) or vegetable matter; largely saturated they may include a percentage of unsaturated or of aromatic hydrocarbons	Petro-Canada P.O. Box 2844 Calgary, Alberta T2P 3E3
indoxacarb	Avaunt	30WP	(S)-methyl 7-chloro-2,5-dihydro-2-	DuPont Company

			((methoxycarbonyl)(4-(trifluoromethoxy)phenyl)amino)-carbonylindeno(1,2-e)(1,3,4)oxadiazine-4a(3H)-carboxylate	Stine-Haskell Research Center Dupont Crop Protection Newark, DE 19711
methoxyfenozide	Intrepid	2F	Benzoic acid, 3-methoxy-2-methyl-,2-(3,5-dimethylbenzoyl)-2-(1,1-dimethylethyl) hydrazide	Dow AgroSciences LLC 9330 Zionsville Road Indianapolis, IN 46268
myclobutanil	Nova	40W	Alpha-butyl-alpha-(4-chlorophenyl)-1H-1,2,3,4-triazole-1-propanenitrile	Dow AgroSciences LLC 9330 Zionsville Road Indianapolis, IN 46268
paraffinic oil	JMS Stylet Oil	97.1%L	Highly refined hydrotreated paraffinic distillate plus non-ionic emulsification system. Molecular formula is proprietary.	JMS Flower Farms, Inc. 1105 25 <sup>th</sup> Ave. Vero Beach, FL 32960
spinosad	SpinTor	2SC	A mixture of spinosyn A and spinosyn D	Dow AgroSciences LLC 9330 Zionsville Road Indianapolis, IN 46268