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EGGPLANT: *Solanum melongena* L.

**INSECTICIDAL CONTROL OF BROADMITE, TWO SPOTTED SPIDER MITE AND
WHITEFLY ON EGGPLANT, VAR 'Zebra' 2007**

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Barry Kostyk and Robert Reifer

Broad mite: *Polyphagotarsonemus latus* (Banks)

Silverleaf whitefly (SLW): *Bemisia argentifolii* Bellows & Perring

Two spotted spider mite : *Tetranychus urticae* Koch

Broadmite, spidermites and whiteflies are the principal pests of eggplant in Florida, with at least one or both of the mites requiring chemical intervention for optimal yield. Greenhouse-raised eggplant seedling were transplanted on 21 Feb at 18 inch spacing in single rows on a set of 3 beds, and covered with polyethylene film mulch. Approximately 25 % of the fertilizer was preplant soil incorporated (granular 15-0-15) with the remainder applied as liquid 8-0-8 delivered by drip irrigation. A 120 foot length section of each row was used in this experiment. Plots were 20 ft long assigned across the 3 beds, 4 times in a randomized complete block design. The first application was made on 11 Apr using an EZ-Dose sprayer with a pressure of 45 PSI and a flow rate of 3.7 gallons per minute. Treatments were applied at 20 gpa. A high clearance sprayer was used on 11 May for the second application operating at 200 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 gpa each for a total of 80 gpa. All stages of mites and whitefly preimaginal stages were monitored on 23-Apr, 1, 10, 18, 23, 31-May and 7-Jun by collecting a young leaf from 5 plants in each plot and examining under a stereoscopic microscope. Eggplants were harvested on 16 and 30 May and total number of fruit and weight were recorded. Broadmite damage to fruit was rated as: 0 = no damage, 1 = slight tarnishing of calyx, 2 = moderate browning of calyx, 3 = severe browning and pitting of calyx, 4 = fruit with damage.

All products tested provided significant control of broadmite compared to the untreated control over all sample dates, with no differences among treatments. Fewest whitefly eggs and nymphs were seen on plants treated with Oberon, followed by Courier with the remaining treatments not significantly different from the control. All treatments except Courier significantly reduced spidermites compared to untreated check with no differences among treatments. Yield did not

differ among all treatments including the untreated check (data not shown). All treatments reduced broadmite damage to fruit compared to untreated check. Least broadmite damage was seen on fruit from plants treated with Agrimek, though not significantly different from Oberon or either rate of Portal, both latter not different from Courier. All the four products suppressed broadmite and spidermite, however, only Oberon and Courier were effective against whitefly.

Treatment	Rate (oz/ac)	Individuals per leaf over all sample dates			Broadmite	
		(N ^o)			Damaged Fruit (0-4)	
		Broadmite	Whitefly	Spider Mite	(N ^o Severe)	
Untreated check		3.5 a	3.8 a	43.3 a	5.5	a
Agri-mek	10.5	1.4 b	4.2 a	13.2 b	0.8	c
Oberon	8.5	1.1 b	0.8 c	4.9 b	2.0	bc
Portal	16	1.7 b	3.9 a	4.5 b	1.3	bc
Portal	32	1.1 b	4.1 a	2.2 b	2.0	bc
Courier	13.6	1.6 b	2.5 b	57.4 a	3.0	b

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

Comment [MSOffice1]: ??

Comment [MSOffice2]: Maximum for damage rating is 4.

Part II: Materials Tested for Arthropod Management

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Brand Name	Formulation	Common Name	Composition	Manufacturer
Agri-mek	0.15 EC	Abermectin	(Butyl)-7-((2,6-dideoxy-40-2,6-dideoxy3-0-methyl-x-L-arabinohexopyran osyl)-3-0-	Syngenta Crop Protection

			<p>methyl-x-L-arabino-hexopyranosyl)oxy)- 5'c6,6'',7,10,11,14,15,17a,20,20a,20b- dodecanydro-20b-dihydroxy-5'6,8,19- tetramethylsprio (11,16-methano- 2H,13H,17H-furo (4,3,2-pg)(2,6) benzodioxacycloclootadecin</p>	<p>P.O. Box 18300 Greensboro, NC 27419</p>
Portal	0.4	Fenpyroximate	<p>tert-Butyl (E)-4-((((1,3-dimethyl-5- phenoxy-1H-pyrazol-4- yl)methylene)amino)oxy)methyl)benzoate</p>	<p>Nichino America Inc. 4550 New Linden Hill Rd. Suite 501 Wilmington DE 19808</p>
Courier	40 SC	Buprofezin	<p>2-tert-Butylimino-3-isopropyl-5- phenylperhydro-1,3,5-thiazin-4-one</p>	<p>Nichino America Inc. 4550 New Linden Hill Rd. Suite 501 Wilmington DE 19808</p>
Oberon	2SC	spiromesifen	<p>2-oxo-3-(2,4,6-trimethylphenyl)-1- oxaspiro(4,4)non-3-en-4-yl 3,3- dimethylbutanoate</p>	<p>Bayer CropScience LP P.O. Box 12014 1 T.W. Alexander Drive Research Triangle Park, North Carolina</p>

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