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ORANGE: *Citrus sinensis* (L.) Osbeck, 'Valencia'

ACARICIDAL CONTROL OF CITRUS RUST MITE, 2010

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

Barry C. Kostyk
Email: bkostyk@ufl.edu

Jawwad A. Qureshi
Email: jawwadq@ufl.edu

Joel Mendez
Email: mendez1@ufl.edu

Citrus rust mite (CRM): *Phyllocoptruta oleivora* (Ashmead)

CRM remains an important pest of fresh market citrus in the United States and elsewhere. Feeding by this pest causes a characteristic "russeting" that can reduce packout. This trial was conducted at the University of Florida Southwest Research and Education Center in Immokalee,

Florida, on 15-yr-old 'Valencia' orange trees planted at 15 X 22 ft spacing on double-row beds running north-south. A RCB design was used to assign 4 replications of each of the 8 treatments and an untreated check to 4-tree plots separated by one tree within the row with treated rows separated by an untreated buffer row. Applications were made 21 Jun 2010 using a Durand Wayland 3P-10C-32 air blast speed sprayer with an array of four # 5 T-Jet stainless steel cone nozzles per side operating at a pressure of 200 psi delivering 130 gpa at a tractor speed of 1.5 mph. Four fruit were sampled from each of five trees for a total of 20 fruit per plot. A 14X Bausch & Lomb Hastings hand lens was used to view an area of approximately 1.0 cm^2, referred to as the "lens field", on two partially shaded areas on each sampled fruit and total number of mites per fruit recorded. A pre-treatment sample of 4 fruit per plot prior to the treatment application resulted in an average of 0.71 ± 1.19 (mean ± SD) mites per lens field. Post treatment evaluations were made at 3,10, 17, 24 31, 38 45, 52, 59, and 66 days after treatment (DAT). Populations on untreated trees and trees treated with 435 Oil alone had collapsed at this point and the trial was terminated. All data were subjected to ANOVA for treatment effect on CRM with means separated using LSD (P = 0.05).

All products tested significantly reduced the number of CRM observed compared to the untreated control from 3 to 31 DAT but were not different from each other. At 38, 45, 52 DAT all treatments again provided significant reduction in mite numbers compared to untreated control except 435 Oil alone treatment which was significantly less effective than other treatments and not different from untreated control at 52 DAT. At 59 DAT only the Envidor 2 SC and Agri-flex treatments had significantly fewer mites than the untreated control and 435 Oil alone treatment but were not significantly different from all the other treatments. At 66 DAT,

fewer mites than the untreated control were only seen on fruit treated with Movento 240 SC + 435 Oil treatment.

Treatment/ formulation	Rate amt product/acre or v/v	CRM PER LENS FIELD									
		3 DAT	10 DAT	17 DAT	24 DAT	31 DAT	38 DAT	45 DAT	52 DAT	59 DAT	66 DAT
Untreated		0.78 a	1.89 a	2.05 a	3.11 a	6.95 a	11.42 a	8.94 a	5.49 a	1.11 ab	0.24 bc
435 Oil	3%	0.04 b	0.40 b	0.41 b	1.05 b	0.78 b	3.67 b	2.36 b	5.36 a	1.83 a	0.39 a
Envidor 2 SC	16.0 oz	0.01 b	0.09 b	0.05 b	0.01 b	0.01 b	0.02 c	0.03 c	0.55 b	0.14 c	0.19 bcd
Agri-mek 0.15 EC + 435 Oil	10.0 oz + 3%	0.11 b	0.06 b	0.04 b	0.13 b	0.04 b	0.23 c	0.26 c	0.60 b	0.23 bc	0.11 cd
Movento 240 SC + 435 Oil	10.0 oz + 3%	0.02 b	0.13 b	0.04 b	0.01 b	0.04 b	0.07 c	0.01 c	0.16 b	0.23 bc	0.08 d
Agri-Flex + 435 Oil	8.5 oz + 3%	0.01 b	0.08 b	0.03 b	0.03 b	0.04 b	0.00 c	0.06 c	0.26 b	0.13 c	0.15 bcd
NAI 2302 15 EC + 435 Oil	27.0 oz + 3%	0.06 b	0.09 b	0.07 b	0.01b	0.28 b	0.44 c	0.76 bc	1.70 b	1.02 abc	0.28 ab

Means followed by same letter within a column are not statistically significant (LSD, P>0.05)

Part II: Materials Tested for Arthropod Management

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Brand	Formulation	Common name	Composition	Manufacturer
Agri-flex		abamectin thiamethoxam	(Butyl)-7-((2,6-dideoxy-40-2,6-dideoxy3-0-methyl-x-L-arabinohexopyran osyl)-3-0-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) benzodioxacyclootadecin 4H-1,3,5-Oxadiazin-4-imine,3-((2-chloro-5-thiazolyl)methyl)tetrahydro-5-methyl-N-nitro-	Syngenta Crop Protection P.O. Box 18300 Greensboro, NC 27419
Agri-Mek	0.15 EC	abamectin	(Butyl)-7-((2,6-dideoxy-40-2,6-dideoxy3-0-methyl-x-L-arabinohexopyran osyl)-3-0-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) benzodioxacyclootadecin	Syngenta Crop Protection P.O. Box 18300 Greensboro, NC 27419
Envidor	2 SC	spirodiclofen	3-(2,4-dichlorophenyl)-2-oxo-1-oxaspiro[4.5]dec-3-en-4-yl 2,2-dimethylbutanoate	Bayer CropScience LP P.O. Box 12014 1 T.W. Alexander Drive Research Triangle Park, North Carolina 27709
Movento	2 SC	spirotetramat	*cis*-4-(ethoxycarbonyloxy)-8-methoxy-3-(2,5-xylyl)-1-azaspiro[4.5]dec-3-en-2-one	Bayer CropScience LP P.O. Box 12014 1 T.W. Alexander Drive Research Triangle Park, North Carolina 27709
435 oil	98.8%L		Refined petroleum distillate	Drexel Chemical Company P.O. Box 13327 Memphis, TN 38113-0327

NAI2302	15 EC	Tolfenpyrad	4-chloro-3-ethyl-1-methyl-*N*-[[4-(4-methylphenoxy)phenyl]methyl]-1*H*-pyrazole-5-carboxamide	Nichino America Inc. 4550 New Linden Hill Rd Suite 501 Wilmington DE 19808