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

**ACARICIDAL CONTROL OF CITRUS RUST MITE, 2006**

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

Citrus rust mite remains a key pest of fresh market citrus in Florida and elsewhere. This trial was conducted at the University of Florida Southwest Research and Education Center in Immokalee, Florida, on 11-yr-old 'Valencia' orange trees planted at 15 X 22 ft spacing on double-row beds running north-south. Plot rows were separated by an untreated buffer row. A RCB design was used to assign 4 replications of each of the 10 treatments and an untreated check. A replicate consisted of 7-tree plots. Treatments were applied on 6 Jul 2006 using a Durand Wayland 3P-10C-32 air blast speed sprayer with an array of seven # 5 T-Jet stainless

steel cone nozzles per side operating at a pressure of 225 psi delivering 150 gpa at a tractor speed of 1.5 mph. All treatments included FC435-66 spray oil at 5% v/v except those containing QRD 400 and the untreated check. One fruit was sampled from 4 sides of each of the three trees in the center of each plot. A 10X hand lens was used to view an area of 2.0 cm<sup>2</sup>, referred to as the “lens field”, on two partially shaded areas on each fruit and the total number of mites recorded. A pre-treatment sampling from 8 fruit per plot prior to the treatment application resulted in an average of 13.7 ± 1.2 (mean ± SE) mites per lens field. Post treatment evaluations were made at 7, 21 and 35 and 49 days after treatment (DAT). All data were subjected to ANOVA for treatment effect on CRM and the means separated using LSD (P = 0.05).

Mite density decreased in all plots at 7 DAT including the untreated check with no significant differences between the treatments and the untreated check. The downward trend in mite population continued and by 21 DAT, only on trees sprayed with lower rate of Abamectin 2062 and higher rate of Agri-Mek 0.15EC had fewer mites observed compared to the control. At 35 DAT, no mites were seen on the trees treated with higher rate of ABBA and that was the only treatment that had significantly fewer mites than the untreated trees. At 49 DAT there were again no differences between any sprayed treatment and the untreated check. Over all sample dates, trees treated with the higher rate of ABBA (15 floz/acre) had significantly fewer mites than the untreated trees, however, all rates of Abamectin and Agri-mek resulted in lower number of mites compared with untreated check.

Treatment/ formulation	Rate amt product/acre or % v/v	No. of CRM/lens field				
		7 DAT	21 DAT	35 DAT	49 DAT	Total post treatment
Untreated check		0.72ab	0.31bc	0.79ab	0.05b	0.47abc
FC 435-66 Oil	5% v/v	1.43a	0.45ab	0.96a	0.14b	0.74a
QRD 400	390 fl oz	1.44a	0.17cd	0.34abc	0.14a	0.52ab
QRD 400	585 fl oz	0.45ab	0.61a	0.17bc	0.41b	0.41abcd
Abamectin 2062 + FC 435-66 Oil	7.5 fl oz 5%	0.22b	0.01d	0.23abc	0.03b	0.12bcd
Abamectin 2062 + FC 435-66 Oil	15 fl oz 5%	0.07b	0.07cd	0.04bc	0.07b	0.07cd
Abamectin 2061 + FC 435-66 Oil	15 fl oz 5%	0.25b	0.08cd	0.03bc	0.02b	0.1cd
ABBA + FC 435-66 Oil	7.5 fl oz 5%	0.14b	0.15cd	0.05bc	0.16b	0.12bcd
ABBA	15 fl oz	0.05b	0.10cd	0.00c	0.02b	0.04d

+ FC 435-66 Oil	5%					
Agri-Mek 0.15EC	7.5 fl oz	0.14b	0.08cd	0.03bc	0.02b	0.07cd
+ FC 435-66 Oil	5%					
Agri-Mek 0.15EC	15 fl oz	0.17b	0.04d	0.05bc	0.01b	0.07cd
+ FC 435-66 Oil	5%					

Means within each column not followed by the same letter are significantly different ( $P < 0.05$ ).

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

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Common name	Trade name/ Cultivar	Concentration/ Formulation	Chemical name	Manufacture/sour
abamectin	Agri-Mek	0.15 EC	(Butyl)-7-((2,6-dideoxy-40-2,6-dideoxy-3-0-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) benzodioxacycloodadecin	Syngenta Crop Protection P.O. Box 18300 Greensboro, NC 27419
abamectin	Abamectin 2061 & 2062	18 g/l EW	(Butyl)-7-((2,6-dideoxy-40-2,6-dideoxy-3-0-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) benzodioxacycloodadecin	Cheminova A/S P.O. Box 9 DK-7620 Lemvig, Denmark
abamectin	ABBA	0.15EC	(Butyl)-7-((2,6-dideoxy-40-2,6-dideoxy-3-0-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) benzodioxacycloodadecin	FarmSaver.com, I P.O. Box 21365 Seattle, WA. 98111
horticultural spray oil	435 oil	98.8%L	Refined petroleum distillate	Drexel Chemical Company P.O. Box 13327 Memphis, TN 38111 0327
Not yet given	QRD 400	25 EC	Synergistic suite of compounds extracted from the plant Chenopodium Ambrosiodes.	AgraQuest, Inc. 1530 Drew Avenue Davis, CA. 95616