

(D)

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

## **ACARICIDAL CONTROL OF CITRUS RUST MITE, 2007**

**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)

**Barry C. Kostyk and Robert E. Riefer**

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 12-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 13 treatments and an untreated check. The single-row replicates divided into 6-tree plots were separated by an untreated buffer row. Treatments were initiated on 3 Jul 2007 and terminated on 4 Jul 2007 using a Durand Wayland 3P-10C-32 air blast speed sprayer with an

array of five # 5 T-Jet stainless steel cone nozzles per side operating at a pressure of 200 psi delivering 165 gpa at a tractor speed of 1.5 mph. One fruit was sampled from 4 sides of each of the four trees in the center of each plot. A 14X Bausch & Lomb Hastings hand lens was used to view an area of approximately 1.0 cm<sup>2</sup>, referred to as the “lens field”, on two partially shaded areas of each fruit and the total number of mites recorded. A pre-treatment sampling from 4 fruit per plot prior to the treatment application resulted in an average of 0.56 ± 0.10 (mean ± SE) mites per lens field. Post treatment evaluations were made at 7, 14, 21, 28, 35, 42, 49, 56, and 63 days after treatment (DAT). All data were subjected to ANOVA for treatment effect on CRM and the means separated using LSD (P = 0.05).

Significant treatment effects were not seen until the 3<sup>rd</sup> post-treatment evaluation at 21 DAT when most CRM were seen on untreated trees, although not significantly different from trees treated with 435 spray oil alone, itself not different from Portal alone or the high rate of Zoro with 435 oil. These latter two were not different from the remaining 8 most effective treatments. All treatments except 435 oil alone were again significantly different from the control but not different among themselves at 28 DAT. By 35 DAT, most CRM were seen on untreated trees, followed by trees treated with either 435 or Mana 305 spray oil, followed by all remaining treatments which did not differ among themselves. CRM peaked on untreated trees at 42 DAT where more were found than on trees treated with 435 oil alone, followed by Mana 305 oil alone, followed in turn by all remaining treatments that did not differ among themselves. CRM numbers were still relatively high on untreated trees at 49 DAT, and not significantly different from either oil treatment, but higher than all other treatments, which again did not differ. Oil-treated trees were not sampled at 56 DAT but otherwise the situation remained unchanged. Thus, all treatments that included a miticide alone or with the addition of spray oil

or Orocit performed equally well in this experiment, controlling CRM for at least 56 days.

Although CRM populations decreased by more than a factor of 3 at 63 DAT, significantly fewer mites than the control could still be detected with the high rate of Zoro + 435 oil, although not different from the low rate of Zoro + 435 oil or Agri-mek + 435 oil, which in turn were not different from control or remaining treatments.

			Citrus Rust Mites/Lens Field									
Product	Rate Oz/acre	Adjuvant Rate	10-Jul 7 DAT	17-Jul 14 DAT	24-Jul 21 DAT	31-Jul 28 DAT	7-Aug 35 DAT	14-Aug 42 DAT	21-Aug 49 DAT	28-Aug 56 DAT	4-Sep 63 DAT	
Control	.....	.....	0.3	1.1	2.2 a	5.3 a	5.8 a	11.3 a	8.1 a	8.5 a	3.0 ab	
.....	.....	435 Oil 2% v/v	0.2	0.4	1.3 ab	3.8 a	2.8 b	5.5 b	8.5 a	.....	.....	
Agri- mek	10 oz	435 Oil 2% v/v	0.6	0.3	0.0 c	0.7 b	0.1 c	0.4 d	0.7 b	0.7 b	2.4 abc	
Portal*	64 oz	.....	0.0	0.3	0.5 bc	0.2 b	0.2 c	0.2 d	0.4 b	2.1 b	3.8 ab	
Portal*	64 oz	435 Oil 2% v/v	0.1	0.0	0.1 c	0.4 b	0.4 c	0.3 d	0.5 b	1.7 b	3.3 ab	
Zoro	10 oz	435 Oil 2% v/v	0.4	0.1	0.9 c	0.3 b	0.1 c	0.2 d	0.4 b	1.0 b	2.3 abc	
Zoro	20 oz	435 Oil 2% v/v	0.3	0.5	1.0 bc	0.1 b	0.2 c	0.2 d	0.2 b	0.3 b	0.5 c	
Abba 0.15 EC	7.5 oz	435 Oil 2% v/v	0.0	0.1	0.1 c	0.2 b	0.2 c	0.3 d	0.8 b	2.0 b	1.8 bc	
Abba 0.15 EC	7.5 oz	Mana 305 384 Fl oz	0.3	0.1	0.3 c	0.2 b	0.1 c	1.1 d	1.4 b	1.4 b	4.2 a	
Abba 0.15 EC	10 oz	Mana 305 384 Fl oz	0.1	0.1	0.1 c	0.3 b	0.6 c	0.8 d	1.3 b	0.9 b	3.0 ab	
.....	.....	Mana 305 384 Fl oz	0.1	0.1	0.2 c	0.8 b	2.1 b	3.2 c	6.4 a	.....	.....	
Agri- mek	10 oz	Orocit 64 fl oz	0.1	0.0	0.1 c	0.4 b	0.5 c	1.0 d	2.0 b	1.4 b	4.3 a	

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

\*applied 4 Jul 2007

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

**Orange:** *Citrus sinensis* (L. Osbeck.) 'Valencia'

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

**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

Brand Name	Formulation	Common Name	Composition	Manufacturer
Agri-Mek	0.15 EC	abamectin	(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) benzodioxacycloclootadecin	Syngenta Crop Protection P.O. Box 18300 Greensboro, NC 27419
Zoro	0.15 EC	abamectin	(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) benzodioxacycloclootadecin	Cheminova Inc. 1700 Route 23 Suite 300 Wayne NJ 07470
ABBA	0.15EC	abamectin	(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) benzodioxacycloclootadecin	Makhteshim Agan of North America Inc. 4515 Falls of Neuse Rd. Suite 300 Raleigh NC 27609
435 oil	98.8%L	horticultural spray oil	Refined petroleum distillate	Drexel Chemical Company P.O. Box 13327 Memphis, TN 38113-0327
Portal	0.4 EC		Tert-butyl(E)- $\alpha$ -(1,3-dimethyl-5-phenoxy-pyrazol-4-ylmethyleneaminoxy)-p-toluate	Nichino America 4550 New Linden Hill Rd., Suite 501 Wilmington DE 19808
		MANA 305	Refined petroleum distillate	Makhteshim Agan of North America Inc. 4515 Falls of Neuse Rd. Suite 300 Raleigh NC 27609
Orocit			Cold Pressed Orange Oil, Alcohol Ethoxylate	ORO Agri 990 Trophy Club Dr TX 76262

