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

ACARICIDAL CONTROL OF CITRUS RUST MITE, 2010

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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 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 four 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 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 check 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 the untreated check. However, the 435 Oil alone treatment was significantly less effective than other treatments and not different from untreated control at 52 DAT. At 59 DAT only the Envidor 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 + 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 check		0.78a	1.89a	2.05a	3.11a	6.95a	11.42a	8.94a	5.49a	1.11ab	0.24bc	
435 Oil	3%	0.04b	0.40b	0.41b	1.05b	0.78b	3.67b	2.36b	5.36a	1.83a	0.39a
Envidor 2 SC	16.0 oz	0.01b	0.09b	0.05b	0.01b	0.01b	0.02c	0.03c	0.55b	0.14c	0.19bcd
Agri-Mek 0.15 EC + 435 Oil	10.0 oz + 3%	0.11b	0.06b	0.04b	0.13b	0.04b	0.23c	0.26c	0.60b	0.23bc	0.11cd
Movento 240 SC + 435 Oil	10.0 oz + 3%	0.02b	0.13b	0.04b	0.01b	0.04b	0.07c	0.01c	0.16b	0.23bc	0.08d
Agri-Flex + 435 Oil	8.5 oz + 3%	0.01b	0.08b	0.03b	0.03b	0.04b	0.00c	0.06c	0.26b	0.13c	0.15bcd
NAI 2302 15 EC + 435 Oil	27.0 oz + 3%	0.06b	0.09b	0.07b	0.01b	0.28b	0.44c	0.76bc	1.70b	1.02abc	0.28ab

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