(D17)

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

ACARICIDAL CONTROL OF CITRUS RUST MITE, 2005

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

The trial was conducted at the University of Florida Southwest Florida Research and Education Center in Immokalee, FL, on 10-yr-old 'Valencia' orange trees planted at 15 × 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 four replications of eight treatments including an untreated check. All plots consisted of 5 trees. Treatments were applied on 11 Jul 2005 using a Durand Wayland 3P-10C-32 air blast speed sprayer with an array of seven no. 5 T-Jet stainless steel cone nozzles per side operating at a pressure of 225 psi delivering 175 gpa at a tractor speed of 1.5 mph. Three trees from the center of each plot were sampled. Each of the three trees was divided into four compass quadrants as northeast, southeast, northwest, and southwest, and 2 fruit were sampled from each quadrant to make a total of 24 fruit per plot. A 10× hand lens was used to view an area of 2.0 cm^2, referred to as the "lens field", on two partially shaded areas on each fruit. Counts of all CRM nymphal stages were recorded as the number of mites per two lens fields per fruit, except for the second sampling date from which the counts were recorded as the number per four lens field per two fruit. The counts were later standardized to number of mites per lens field. A pre-treatment sampling from 48 fruit within the trial area 12 days prior to treatment showed an average of 1.4 mites per lens field. Post treatment evaluations were made weekly at 7, 14, 21, 28, 35, 42, 49 DAT and then bi-weekly at 63, and 77 DAT. After 49 DAT, treatments whose average counts exceeded the untreated check where no longer evaluated. Evaluations were terminated after 77 DAT when the population of mites sharply decreased in the untreated check. Data were subjected to ANOVA and means were separated using LSD ($P \leq 0.05$).

All treatments provided significant reduction of CRM through 35 DAT except for 435 oil alone at 28 DAT. CRM density was greater at 42 and 49 DAT on trees sprayed with 1 lb Dicofol +.75% EOS oil compared to the control. Significant reduction of CRM was still seen at 49 DAT from Agri-Mek, A8612, and the high rate of Dicofol, although the latter had dropped out by 63 DAT. At 77 DAT control continued only on trees sprayed with Agri-Mek and oil. Thus the longest residual control was seen with this grower standard, although the 7 weeks control observed from 3 lb of Dicofol demonstrated the value of this product as an alternative.

Treatment/ formulation	Rate lb (AI)/acre	Mean no. of CRM per lens field (DAT)								
		7	14	21	28	35	42	49	63	77
Agri-Mek 0.15EC + 435 oil	0.0117 lb + 1% v/v	0.50b	0.21b	0.03d	0.03d	0.07d	0.07e	0.37d	0.44b	1.01b
A8612 0.15EC + 435 oil	0.0117 lb + 1% v/v	0.55b	0.14b	0.21d	0.09d	0.28d	1.4de	0.68cd	2.09b	4.16a
Dicofol 4E	1 lb	0.23b	0.28b	0.83cd	1.53bcd	1.86bcd	2.73cde	7.23b	--[a]	--[a]
Dicofol 4E	3 lb	0.27b	0.49b	0.12d	0.57cd	0.43cd	1.27de	2.59cd	11.79a	--[a]
EOS oil	1.5% v/v	0.70b	1.01b	2.76b	1.61bcd	2.09bcd	3.53bcd	4.39bc	--[a]	--[a]
Dicofol 4E + EOS oil	1 lb + 0.75% v/v	0.67b	0.89b	1.21cd	2.16bc	3.35b	9.34a	13.43a	--[a]	--[a]
435 oil	1.5% v/v	0.79b	0.82b	1.61bc	3.11ab	2.69bc	5.81bc	7.43b	12.16a	--[a]
Untreated	--	2.15a	3.14a	3.21a	4.51a	7.19a	5.94b	6.77b	14.69a	6.47a

Means in the same column followed by the same letter are not significantly different (LSD, $P > 0.05$).
[a]Data not collected.