

ORANGE: *Citrus sinensis* (L.) Osbeck 'Hamlin'

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

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ACARICIDAL CONTROL OF CITRUS RUST MITE, 2001: Citrus rust mite is the major arthropod pest of citrus grown for the fresh market in Florida and can also cause losses in processed fruit. Therefore, it is important to test new acaricides against industry standards for CRM control. This trial was conducted at the Duda Grove in Hendry county, Florida, on mature 'Hamlin' orange trees planted at 12 X 21.4 ft spacing. A RCB design was used to assign 4 replications of 9 treatments including an untreated check to 7 tree plots. Plot rows were separated by a single buffer row. Treatments were applied on 7 Aug using a Durand Wayland 3P100-32 air blast speed sprayer with an array of seven # 3 T-Jet stainless steel cone nozzles per side at a pressure of 400 psi delivering 100 gpa. Treatments 7 and 8 required 2 applications, the second with 5% v/v horticultural mineral oil (HMO) FL 435-66 or 4 oz/acre BAJ-2740 a week later on 14 Aug. Evaluations of CLM incidence were made 1 day prior to application and at 14, 21, 28 and 42 days after the first application (DAFA). Four fruit, 2 per row side, were sampled from 5 trees for a total of 20 fruit per plot. All mobile CRM were rated using the HB system (Rogers, J.S. 1993) of standardized visual comparison keys to improve accuracy in rapid estimations of citrus rust mite populations (Citrus Industry Magazine 74:30-35) in two, 2.5 cm diameter fields using a 12X hand lens on each partially shaded side of each fruit.

Pre-application counts were at 0.57 CRM/cm² and 40% infested lens fields. CRM pressure in untreated trees rose to a maximum of 5.84 CRM/cm² 14 days after first application but dropped to 0.25 CRM/cm² 28 days later. Significantly fewer CRM were seen from all treated fruit compared to the control at 7 DAFA with significantly fewer than NNI-850 alone than all other treatments except BAJ-2740 alone. At 14 DAFA there were no significant differences between the untreated control and NI-850 or Trilogy. The best treatments at that time were NNI-850 + HMO, AgriMek + HMO, and BAJ-2740 alone or followed by HMO. At 28 DAFA only AgriMek + HMO and all treatments with BAJ-2740 had significantly fewer CRM than the untreated control. At 42 DAFA all counts were low and no significant treatment effect was observed. In summary, the effects of NNI-850 alone and Trilogy did not persist beyond 7 days. The addition of HMO improved the effectiveness of NNI-850 and extended its effect to 14 days. On the other hand HMO appeared to have a depressing though transitory effect on BAJ-2740 when tank mixed or applied one week prior but not when applied one week after. This trial

indicated a possible role for BAJ-2740 as a miticide for CRM in Florida.

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Treatment /formulation	Rate ^a lb(ai)/acre	CRM/cm ²				% fruit with russetting	
		Days After First Application					
		7	14	28	42		104
Untreated	—	2.48a	5.84a	3.14a	0.25a	35.8a	
NNI-850 5% EC	0.209	1.12b	3.42ab	3.65a	0.82a	21.3b	
NNI-850 5% EC + HMO	0.209	0.20c	0.31c	2.78a	0.77a	6.3cd	
AgriMek 1.5 EC + HMO	0.012	0.01c	0.00c	0.05b	0.00a	0.8d	
BAJ-2740 24% EC	0.063	0.63a	0.20c	0.39b	0.35a	1.5d	
BAJ-2740 24%EC + HMO	0.063	0.06c	0.45 c	0.27b	0.34a	5.0cd	
BAJ-2740 24% EC	0.063	0.28c	0.00c	0.13b	0.19a	1.0d	
2 nd spray HMO							
HMO	0.063	0.18c	0.54 c	0.52b	0.92a	7.0cd	
2 nd spray BAJ-2740 24% EC							
Trilogy 70 %	5.46	0.48bc	4.18a	2.89a	0.58a	11.3c	

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

^aHMO (FL435-66) applied at 5 % v/v.