Pest, red palm mite,	Researcher: J. E. Peña
Raoiella indica	UF-TREC-Homestead; jepe@ifas.ufl.edu

Chemical control of the red palm mite on coconut, First test, 2008. The experiment was conducted in an ornamental nursery in Broward Co., Florida. Two to three year coconut palms planted in the soil at an approximate distance of 6 feet between rows were selected for this study. Five palms were used per treatment and each palm was considered a replication. Two fronds were tagged per palm. Mite densities were evaluated using 10x hand lens on two pinna per frond, providing a total of 20 lens fields readings per treatment. Spray treatments (Table 1) were applied with using hand sprayers at approximately 25 psi at an application rate of 100 gallons/acre. Mite densities were evaluated before spray on July 10, 2008 and after spray on 18, 24,31 July, 8 ,12,21 August and 3 September 2008. As requested, palms were manually re-infested with the mite, by collecting mites from pinnae from adjacent palms. Infested pinnae were then placed on top of the treated fronds. Re-infestation was done 14 and 28 days after treatment for Tetrasan and at 28 days after treatment for Avid. No manual re-infestation was done for Sulfur treated palms. The researcher considered that taller palms surrounding the experimental site, were providing a source for natural re-infestation. The GLM procedure was used to detect any statistical differences and means were separated using LSD tests.

Treatment	Dose/100 gallons	Re-infestation/timing		
Tetrasan 5WDG	16 oz	0 days after application		
Tetrasan 5WDG	16 oz	14 days		after
		application		
Tetrasan 5WDG	16 oz	28	days	after
		application		
Avid	4 oz	0 days after application		
Avid	4 oz	14	days	after
		application		
Liquid Sulfur 6	2.5 gallons	No manual reinfestation		

Table 1. Products evaluated against red palm mite.

	Raoiella indica (all stages)/Day							
Treatment	0	8	14	21	28	33	42	55
		39.70 ab	*51.60 a	50.35 abc	75.80 a	51.40 c	33.75 ab	76.00 a
untreated	34.85 a							
Tetra no	14.7 b	10.35 c	27.90 abc	29.60 bc	7.40 b	40.90 c	27.45 ab	54.70 a
re-infest								
Tetra 14 d	15.5 b	23.80 bc	41.35 ab	27.75bc	25.15 b	40.75 c	63.25 a	95.25 a
re-infest								
Tetra 28 d	28.75 a	51.55 a	31.05 abc	62.35 ab	21.70 b	70.55 c	42.10 ab	102.55 a
re-infest								
Avid- no	17.45 b	15.35 c	20.20 bc	69.35 a	66.50 a	115.00 ab	46.65 ab	82.00 a
re-inf								
Avid	17.45 b	14.20 c	34.70 abc	63.35 ab	42.90 ab	139.85 a	56.85 a	90.90 a
28 d re-inf								
	17.6 b	1.65 c	*14.65 c	21.40 c	15.95 b	25.95 c	16.35 b	37.35 a
Sulfur								
p<	0.0184	0.0048	0.0600	0.0277	0.0313	0.0054	0.1047	0.3489

Table 2. Raoiella indica eggs, nymphs and adults.

	Predatory mites (all stages)/Day							
Treatment	0	8	14	21	28	33	42	55
untreated	0	0.2	0.30	0.30 ab	0.20 ab	1.15a	2.00a	0.50 ab
Tetra no re-infest	0	0.15	0.05	0.00 b	0 b	0.05c	0.50b	0.10 b
Tetra 14 d re-infest	0	0.15	0.10	0.10b	0 b	0.10c	0.10c	0.35 ab
Tetra 28 d re-infest	0	0.2	0.05	0.15 b	0 b	0.05c	1.65a	0.65a
Avid - no re-inf	0	0	0.20	0.30 ab	0.15 ab	0.60b	0.40bc	0.40 ab
Avid - 28 d re-inf	0.05	0.15	0.15	0.55a	0 b	0.30b	0.90b	0.40 ab
Sulfur	0	0.05	0	0.10 b	0 b	0.15c	0.30c	0.15 ab
р<	0.4706	0.3523	0.7192	0.0989	0.3176	0.0357	0.0025	0.3790

Table 3. Predaceous mites, all stages (eggs, nymphs, adults)

Results. Statistical differences on red palm densities among treatments were observed at 8, 21, 28 and 33 days after treatment. Only Sulfur, Tetrasan no re-infested and the two avid treated palms had the lowest mite density 8 days after treatment. Fourteen days after treatment, Avid and sulfur had the lowest mite density compared to the untreated control. Twenty one days after treatment, Tetrasan plots with no re-infestation, Tetrasan reinfested 14 days after treatment and sulfur had a significantly lower mite density compared to the control. Twenty eight days after treatment, all tetrasan treatments and sulfur had the lowest density compared to the control. Compared with the untreated control and with other treatments, the two avid treatments, had the highest mite densities, 33 days after spray. No statistical differences were observed at 42 and 55 days after spray. Eight through 28 days after treatment there were no statistical differences between treatments and the untreated control on the density of predaceous mites. Thirty three and 42 days after treatment, the untreated control had a higher density of predaceous mites compared to the treated palms.