Chemical Control of Red Palm Mite, *Raoiella indica,* on Ornamentals

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This information is provided as a guide to management of Red Palm Mite (RPM) and may change after additional trials are conducted.

A. Acaricide testing in Puerto Rico

Acaricides listed in Table 1 l significantly reduced density of RPM on coconut during the first 21 days after a single foliar spray. At 21 days after application, we observed an average of 2-22 mites/17.5 cm2 of leaf surface on treated plants, compared with 141 mites/ 17.5 cm leaf surface on plants that were sprayed with water only. This trial was conducted in a greenhouse and had 6 replicates. ,

Formulations used in this study are listed in Table 1, and were those available to the researchers in Puerto Rico. Table 2 lists the formulations that are registered for use on ornamentals in Florida.

Table 1. Acaricides tested in Puerto Rico greenhouse trial

Product	Tradename	Approximate rates used in test
Spiromesifen	Forbid 480 SC	1.9 fl oz/100 gallons
Dicofol	Kelthane 4E	16.9 fl oz/100 gallons
Acequinocyl	Shuttle 15 SC	7.6 fl oz/100 gallons
Bifenazate	Floramite SC	5.9 oz/100 gallons
Etoxazole	TetraSan 5WG	9.9 oz/100 gallons
Milbemectin	Ultiflora	8.1 fl oz/100 gallons

Table 2. Acaricides labeled in Florida

			Labeled use sites		
Product	Tradename	Labeled rate range	Greenhouse and nursery ornamentals	Landscape ornamentals	MOA
Spiromesifen	Forbid 480 SC	2-4 fl oz/100 gal	**No**	Yes	23
Spiromesifen	Judo	2-4 fl oz/100 gal	Yes	**No**	23
Acequinocyl	Shuttle 15 SC	6.4 12.8 fl oz/100 gal	Yes	**No**	20
Bifenazate	Floramite SC	4-8 fl oz/100 gal	Yes	Yes	2
Etoxazole	TetraSan 5WG	8-16 oz/100 gal	Yes	Yes	10B
Milbemectin	Ultiflora	8 16 fl oz/100 gal	Yes	**No**	6

Each product was tested within the labeled rate range. MOA = Mode of Action and can be found at http://www.irac-online.org/eClassification/. Key for labels: fl oz/100 gal = fluid oz per 100 gallons of spray solution.

All acaricides also reduced RPM densities at 6 and 15 days after application. However, mite resurgence was recorded at least 1 month after application on Floramite and Ultiflora treated plants.

B. Products that are proven to have action against tenuipalpids on ornamentals (C. Mannion webpage), but were not tested against *R. indica*:

Product	Trademark name	Recommended range on label	MOA
sulfur	Thiolux 80 DF	15 lb/A	NR
pyridaben	Sanmite	4 ounces/100 gallons	21
fenbutatin oxide	Vendex 50 WP	2 lb/A	12B

Based on results from the trial in Puerto Rico, the best products that were tested and look better are: Forbid, Kelthane, TetraSan, Floramite and Shuttle. I would add Sanmite, Sulfur, Vendex and Agrimek + oil to that list as well. We are also recommending to test an acaricidal 'bomb' containing the mix of fenpropathrin and acephate as this mix gave good results for control of tenuipalpids on orchids (L. Osborne, pers. Comm.).

C. Products tested that were not effective against *R. indica*: neem oil (Dyna-Gro), applied at 17 and 34 fl ozl/100 gallons ; Dinotefuran (Safari 20 SG) at 6 oz/ 100 gal.
D. Milbemectin (Ultiflora), while statistically different from the untreated control, did not provide as good control as other acaricides listed in Table 1.
E. Follow the label. Several of these products should not be used more than once or twice per year.
F. All products should be rotated with those with a different MOA.

Note: Mention of a commercial or proprietary product or chemical does not constitute a recommendation or warranty of the product by the authors or the University of Florida. Products should be used according to label instructions and safety equipment required on the label and by federal or state law should be employed. Users should avoid the use of chemicals under conditions that could lead to ground water contamination. Pesticide registrations may change so it is the responsibility of the user to ascertain if a pesticide is registered by the appropriate local, state and federal agencies for an intended use.