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# Look Out for the Red Palm Mite!





A tiny, brightly colored species of mite is causing damage to palms and banana plants in the Caribbean, which raises increased concern about its possible introduction into the continental United States. The red palm mite (RPM), *Raoiella indica* Hirst, originated in southern Asia, the Middle East, and eastern Africa. Since 2004, however, it has been found in large numbers damaging host plants on several island nations and U.S. territories in the Caribbean. In this hemisphere, the mites were first found in Martinique, Saint Lucia, Dominica, Guadeloupe, Trinidad, and most recently in Puerto Rico and the U.S. Virgin Islands.

Primary hosts for the RPM are members of the palm family, including coconut and date palms, plus several ornamental palms such as the queen, princess, Christmas, fan, and Canary Island palms. In addition, banana and plantain plants in the Caribbean have suffered significant damage from the feeding of

RPM populations. This pest has also been observed on gingers, heliconias, and bird of paradise plants. While it is not unusual to find RPMs on a wide variety of plant species in heavily infested localities, many of these plants will not likely support the development and reproduction of the mites.

## Finding and Recognizing the Red Palm Mite

RPMs are small (less than 1 mm) with eggs, nymphs, and adult stages all red to orange-red in color. The mites are typically found in groups, feeding on the undersides of leaves, but can also be found on fruits and other parts of the plant. These groups typically consist of several life stages (see figs. 1 and 2), forming distinct clumps of mites, often mixed with cast-off skins of molted mites. These stages can be easily seen with a 10 $\times$ -power hand lens.



Figure 1—Nymphs and adults of red palm mite, *Raoiella indica*, on a coconut leaf. Animal and Plant Health Inspection Service (APHIS) photo by Plant Protection and Quarantine (PPQ) employee Silvia Jimenez.



RPMs may be present on plants for weeks before symptoms can be seen. In the crowns of taller palm trees, RPMs can increase their populations and may not be detected on understory plants until the mites are spread from above by wind, a typical dispersal method.



Figure 2—A coconut palm frond with groupings of RPMs and cast-off skins of molted mites.

*APHIS Photo by PPQ entomologist Ethan Kane.*



Figure 3—Yellowing symptoms on coconut palm caused by feeding of the RPM.

*APHIS photo by PPQ technician Joel Perez.*

## **What Plant Symptoms To Look For**

On palms, yellowing of leaf tissue is visible plant damage that can be caused by feeding of the mite (fig. 3). The yellow areas may become necrotic and brown in advanced cases. The yellowing of palm leaves may be mistaken for the symptoms of lethal yellowing disease or nutrient deficiencies, but mites are not associated with lethal yellowing disease. On banana plants severely infested by the RPM, the leaves have large areas of yellow originating along the margins of the leaf (fig. 4).

## **How the Red Palm Mite Spreads**

How the RPM arrived in the Caribbean remains unknown. RPM can spread by wind currents, and this may be how the pest has spread among the islands of the Caribbean. Mites on fresh palm leaves, handicraft articles, host flowers in floral arrangements, or cut flowers can also be transported to new locations via those commodities. Infested nursery stock is a potential pathway for moving the mites long distances.

## **If You Think You Have Seen Red Palm Mites**

Please report any suspected damage from RPM or provide mite specimens to your State department of agriculture, extension agent, or the Plant Protection and Quarantine office of the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) in your area. Look for a local USDA-APHIS phone number in the blue pages of your telephone book. Or visit this Web site:

[http://www.aphis.usda.gov/plant\\_health/plant\\_pest\\_info/red\\_palm\\_mite/index.shtml](http://www.aphis.usda.gov/plant_health/plant_pest_info/red_palm_mite/index.shtml)

for more information about the RPM.

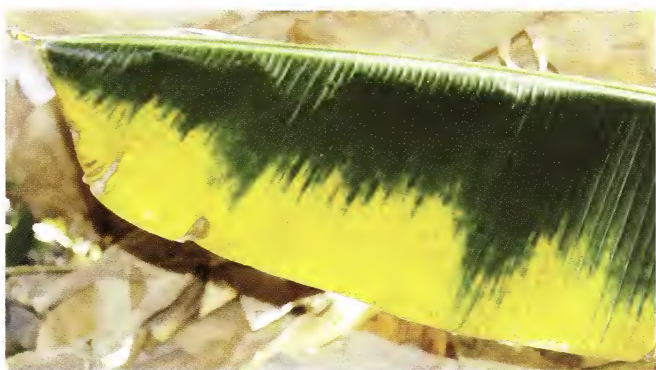


Figure 4—Banana leaf with characteristic yellowing pattern caused by the feeding of RPMs. Photo by Farzan Hosein (Ministry of Agriculture, Land and Marine Resources, Trinidad and Tobago) and reproduced by permission.

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*Photo credits: The scanning electron microscope shot of a red palm mite on the cover was taken in black and white by Eric Erbe and colored by Chris Pooley, both of USDA's Agricultural Research Service (ARS). The sources for images in the numbered figures are included with each caption. Pictures used in the poster on the back side of the leaflet were taken by APHIS—Plant Protection and Quarantine employee Joel Floyd (the palm-tree images) and USDA—ARS—Systematic Entomology Laboratory employee Ron Ochoa (the shot of yellowed palm leaves and the image of a hand holding a leaf).*

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# Look Out

**R**ecently found in the Caribbean, the red palm mite threatens palms and banana plants in the United States. Learn what to look for and report this pest if you find it.

See the reverse side for more information.

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