

New Serious Pest of Lychee and Longan Trees Found in Florida

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The Lychee Erinose Mite (LEM), *Aceria litchii* (Figure 1), was found in a 3-acre commercial lychee orchard in Lee County on Pine Island, FL in February 2018. Infestations were recorded on young leaves, stems, and inflorescences of the lychee varieties, 'Mauritius', 'Hak Ip', and 'Sweet Heart'. LEM is highly host-specific and is mostly known to attack lychee; however, it was also reported infesting longans (*Dimocarpus longan*) in Taiwan. Young Lychee trees are more susceptible to LEM infestations because of their frequent shoot and leaf flushing. No information is available about the damage and susceptibility of longan cultivars.

LEM is native to Asia where it is a severe pest to lychee (*Litchi chinensis*). The mite has also been reported in Hawaii, Australia, and most recently Brazil.

Although LEM is present in Hawaii, the mite is a prioritized quarantine pest in the continental U.S. and other territories. The February 2018 find is the third introduction of LEM in Florida. The first detection was in 1955 in a lychee grove located at Nokomis in Sarasota County and the second introduction was in Coral Gables, Miami-Dade County in 1993. Both times the pest was eradicated after being found on lychee trees.

Florida is the leading producer of lychee and longan in the United States, followed by Hawaii and California. The estimated production area of lychee and longan is 1,230 and 1,600 acres, respectively. Approximately 90% of Florida's commercial production is concentrated in Miami-Dade County. Small plantings and dooryard trees can be found in Polk, Highlands, Brevard, Indian River, Palm Beach, Broward, Collier, Lee, Charlotte, Sarasota, Pinellas, and Martin Counties. Notably, Lee County, where LEM was recently detected, houses several nurseries that produce lychee propagative material that is shipped to the main production area in Miami-Dade.

LEM feeds on leaf epidermal cells, causing morphological alterations, which result in the enlargement of leaf trichomes, referred to as "erinea". Initially, LEM infests immature leaves and forms small blisters (Figure 2) with silver-white color hairs. These erinea later become a reddish-brown hairy mass that, in some instances, can cover the entire underside of the leaf, which may become distorted or curled (Figure 3). Erinea can turn almost black as infested leaves mature. Erinea may also develop on other plant parts as the LEM population grows, the mites migrate to other new shoots and feed upon petioles, stems, panicles, flower buds, and fruit (Figures 4 and 5).

LEM are extremely small and cannot be seen with the naked eye or even a regular dissecting scope (Figure 1). The eggs of LEM are laid in the erinea. This pest's life cycle is approximately 14 days. Multiple, overlapping generations can occur over the course of one year. Population growth is favored by new growth on trees during moderately hot and dry periods with low humidity.

This pest can be transferred by air currents or honey bees. LEM can be disseminated by the movement of infested plants, especially when plants are propagated as air layers from infested parent trees. The mite can also be disseminated by humans touching the symptomatic leaves.

Scouting for this Pest

Growers should scout their groves for this pest, looking for the distorted leaf blisters and/or the reddish-brown hairy mass formed on the underside of leaves. Please report any finding to FDACS DPI (DPIHelpline@FreshFromFlorida.com, 1-888-397-1517) or to the UF/IFAS Commercial Tropical Fruit Extension Agent (Jeff Wasielewski, sflhort@ufl.edu, 305-248-3311, ext. 227). Please do not move these mites by moving infested plant material to any new location or by touching the symptomatic leaves.

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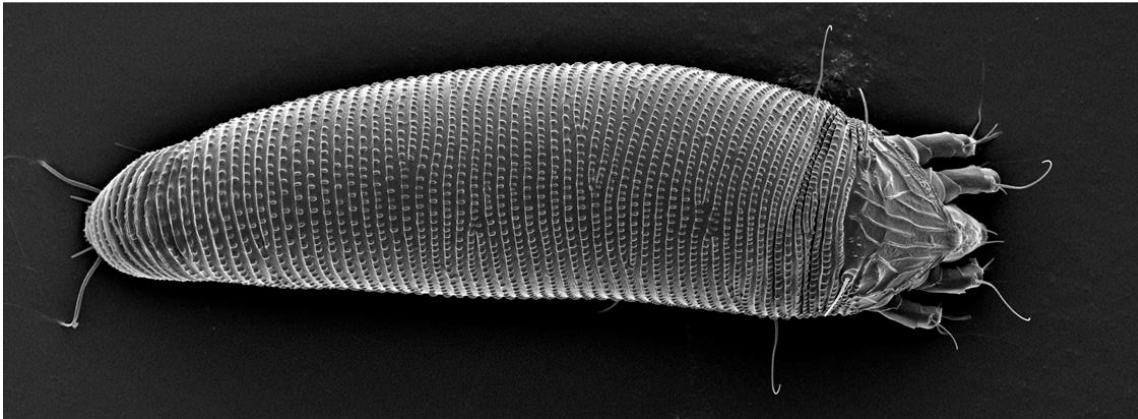


Figure 1. Scanning electron micrograph of the Lychee Erinose Mite (LEM), *Aceria litchi*. Credits: Gary R. Bauchan, and Ronald Ochoa (USDA, ARS, Beltsville, MD).



Figure 2. LEM infests immature Lychee leaves and forms small blisters.



Figure 3. The erineum is a reddish-brown hairy mass that, in some instances, can cover the entire underside of the leaf, which may become distorted or curled.



Figure 4. LEM also feeds upon petioles, stems, panicles and flower buds. Photo credit: Leticia Azevedo, Brazil).



Figure 5. LEM also feeds upon fruit. Consequently, erinea may also develop on fruit. Photo credit: Leticia Azevedo, Brazil).