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RANGE EXPANSION OF THE LITCHI ERINOSE MITE ACERIA LITCHII (ACARI: ERIOPHYIDAE) IN BRAZIL

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Litchi (Litchi chinensis Sonn.) being indigenous to the moist forests of China, belongs to the Sapindaceae family, which has approximately 150 genera and 2,000 species in the tropics and subtropics (Paull & Duarte 2011). Paullinia cupana Kunth is the best known species of this family in Brazil. Litchi chinensis needs winter cooling to stimulate its flowering, and it is cultivated in most parts of the world including Brazil and other Latin American countries (Diczbalis 2011; Paull & Duarte 2011). Commercial litchi orchards were initiated in Brazil in the 1970-80s. The major cultivar (‘Bengal’) produces fruits from Nov to Jan (Pimentel & Celim 2013) and its fresh fruits are sold in domestic markets at Christmas.

Fifty-eight pest species have been recorded on litchi trees worldwide, including lepidopterans, scales, stink bugs, fruit flies, and eriophiid mites, and these pest mainly damage the flowers and fruits (Waite 2012). The litchi erinose mite (LEM), Aceria litchii (Keifer) (Acari: Eriophyidae) is a major pest of litchi varieties (Menzel & Duarte 2011). Commercial litchi orchards were initiated in Brazil in the 1970-80s. The major cultivar (‘Bengal’) produces fruits from Nov to Jan (Pimentel & Celim 2013) and its fresh fruits are sold in domestic markets at Christmas.

Insecticide sprays to control litchi pests, such as Tessaratoma papillosa Drury (Hemiptera: Tessaratomidae) (Zeng et al. 2001) can increase LEM populations (PIP 2011). However, no insecticides or fungicides were sprayed in the LEM-infested area. Pruning and burning of affected twigs were the adopted control measures, particularly for severely infested litchi trees. Pruning and burning reduced LEM symptoms up to 3 months when new shoots presented symptoms. Three sprays of wettable sulphur, permitted for use on organic crops, at the 0.4% rate at 15-day-intervals were used. No pesticide is registered to control litchi pests in Brazil, although chemical products are used to control this mite in other countries (Schulte et al. 2007; Brasil 2013).

Predators are important for LEM management, particularly those of the Phytoseiidae family, but Waite (2012) reported them to have low efficiency on A. litchii. Amblyseius spp., Euseius spp., Iphiseiodes spp., Phytoseius spp., Okisieus
Fig. 1. A. Eighteen year old litchi tree damaged by Aceria litchii (Acari: Eriophyidae); B. Variations in leaf maturation and damage; and C., Aceria litchii. The infested orchard was located in the municipality of Venda Nova do Imigrante, Espírito Santo State, Brazil.

spp., Typhlodromus spp. (Acari: Phytoseiidae), and Agistemus spp. (Acari: Stigmaeidae) are associated with LEM worldwide, including Brazil (Picoli et al. 2010). The number of species and endemism of predatory Phytoseiidae mites are high in the Neotropical region (Tixier et al. 2008). Detection of predatory mites is important for the biological control of A. litchii.

LEM and its damage should be sampled in the litchi orchards in Espírito Santo State, Brazil. The expansion of the LEM on litchi into a second Brazilian state and measures for its management are presented.

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SUMMARY

Litchi (Litchi chinensis Sonn.) is cultivated in subtropical and tropical regions, and in Brazil, commercial orchards began in the 1970-80s. The litchi erinose mite (LEM), Aceria litchii (Keifer) (Acari: Eriophyidae), is a pest of litchi worldwide. In Brazil, LEM was first reported in this crop in São Paulo State in 2008, and Espírito Santo is the second Brazilian state with infestation of this mite discovered in a 18-year-old orchard of 150 plants of the litchi cultivar ‘Bengal’. Cultural and chemical measures for LEM management are presented, and this is the first range expansion of LEM into Espírito Santo State, Brazil.

Key Words: Bengal, Eriophyidae, Litchi chinensis, lychee, management, range expansion

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