

## SCIENTIFIC NOTE

# First Record of *Trialeurodes variabilis* (Quaintance) (Hemiptera: Aleyrodidae) on *Carica papaya* L. in the State of Espírito Santo, Brazil

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Primeiro Registro de *Trialeurodes variabilis* (Quaintance) (Hemiptera: Aleyrodidae) em *Carica papaya* L. no Espírito Santo

RESUMO - Foram realizados levantamentos para identificar as moscas-brancas que ocorrem em mamoeiro no estado do Espírito Santo. É registrada pela primeira vez a presença da espécie de mosca-branca *Trialeurodes variabilis* (Quaintance) no Espírito Santo, em mamoeiro de seis localidades dos municípios de Sooretama e Linhares nos períodos de outubro a dezembro de 2002 e junho de 2003.

PALAVRAS-CHAVE: Insecta, mosca-branca, mamão, mamoeiro

ABSTRACT - Surveys were conducted to identify whitefly pests of papaya in the state of Espírito Santo, Brazil. The whitefly species *Trialeurodes variabilis* (Quaintance) is reported for the first time in the state, where it was found on papaya at six locations in Sooretama and Linhares municipalities in October to December 2002 and June 2003.

KEY WORDS: Insecta, whitefly, papaya

Accurate knowledge of what insect species occur in agricultural systems is an essential first step in integrated pest management. Insect surveys were conducted in commercial orchards and experimental plantings of papaya, *Carica papaya* L., in the state of Espírito Santo, Brazil, aiming at identifying pests of papaya in this area. The whitefly species *Trialeurodes variabilis* (Quaintance) was found infesting papaya at several locations in Espírito Santo. This species is not generally recognized as a pest of papaya (Picanço *et al.* 2003) and has not previously been reported in Espírito Santo. Therefore, the record of its collection on papaya in this state is reported here (Table 1).

*T. variabilis* was found in one sample collected from leaves of papaya growing in a research greenhouse in Sooretama municipality, Espírito Santo in October 2002. This species was also identified in samples collected from papaya from four field sites in Linhares municipality, Espírito Santo in November and December 2002 (identifications by J.H. Martin, Natural History Museum, London) and from papaya leaves from an additional field site in Linhares municipality, Espírito Santo in June 2003 (identifications by J. Brown and R. Caballero, University of Arizona, Tucson). No other whitefly species were found in these collections. Voucher specimens of these insects are deposited in the arthropod collections of INCAPER, Vitória, Espírito Santo.

Worldwide, at least eight species of whiteflies were

recorded as pests of papaya of which three are known to occur in Brazil (Culik *et al.* 2003) and two, *Bemisia tabaci* (Gennadius) biotype B (Vieira & Correa 2001) and *T. variabilis* (Rezende *et al.* cited in Vieira & Correa 2001) were noted as potential pests of papaya in this country. *Bemisia tabaci* (Gennadius) biotype B and *Trialeurodes* sp. were found on papaya under screened conditions (Vieira & Correa 2001).

*T. variabilis* is widely distributed in the Americas from the USA to Brazil and is known as an important pest of cassava (*Manihot esculenta*) in the Neotropics (Bellotti & Arias 2001) and as a pest of papaya in Florida, USA (Culik *et al.* 2003) and the West Indies and Caribbean (Pantoja *et al.* 2002). *T. variabilis* was recorded on papaya in the states of Pernambuco and São Paulo in Brazil (Culik *et al.* 2003). In addition to *C. papaya* and *M. esculenta*, other hosts of *T. variabilis* are *Acer* sp., *Citrus* sp., *Coccoloba* sp., and *Gardenia* sp. (Mound & Halsey 1978).

Whiteflies are among the most important agricultural pests in the world. Adult and immature stages of these insects cause direct feeding damage to plants by piercing and sucking sap from foliage, thus causing weakening and wilting plants and reducing plant growth rate and yield (Berlinger 1986). In addition they commonly harm plants by extensive secretion of honeydew that contributes to the development of sooty mold on plants, which inhibits photosynthesis and reduces marketability of fruits

Table 1. Records of *T. variabilis* collected from papaya in the state of Espírito Santo, Brazil.

Sample	Local	Date	Collector	Note
1	Greenhouse, FES INCAPER, Sooretama	2 Oct 2002	A.O.F. Couto	On papaya leaves
2	Lagoa Nova, Linhares	12 Nov 2002	R.C.A. Lima	On papaya
3	SR, Linhares	28 Nov 2002	A.O.F. Couto	On papaya
4	Bebedouro, Linhares	4 Dec 2002	J.C.M. Oliveira	On papaya
5	Lagoa das Palmas, Linhares	5 Dec 2002	A.O.F. Couto	On papaya
6	Chapadão, Linhares	11 Jun 2003	J. Ruy	On papaya leaves
7	Chapadão, Linhares	18 Jun 2003	A.O.F. Couto	On papaya leaves

such as papaya (Berlinger 1986). Whiteflies are also potential vectors of viral diseases of plants including viruses that infect papaya (Culik *et al.* 2003). Two viral diseases of papaya, *Papaya ringspot virus* – PRSV-p (mosaic) and *Papaya meleira virus* – PMeV (sticky disease) (Zambolim *et al.* 2003), are extremely important in Brazil. There is no evidence that these diseases are transmitted by whiteflies; however, an association between meleira virus and *B. tabaci* biotype B has been observed (Vidal *et al.* 2000 cited in Ventura & Costa 2002). Damage to papaya caused by *T. variabilis* appears to be similar to the damage commonly caused by whiteflies in other crops with heavy infestations resulting in sooty mold that covers plants and fruits (D. dos S. Martins unpubl. data). The collections and identifications reported here constitute the first record of *T. variabilis* in the state of Espírito Santo and suggest that this species is common in this area and a potentially important pest of papaya in Brazil. The fact that this species has also been found on papaya in other parts of Brazil indicates that it is likely to be a much more important pest of papaya than has been generally recognized. Thus, additional research on this species in this country is warranted.

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