

Scientific Note/Comunicação Científica

First record of *Ceratitis capitata* (Wiedemann) (Diptera: Tephritidae) in the state of Acre, Brazil

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Abstract. We report for the first time the presence of *Ceratitis capitata* (Wiedemann) (Diptera: Tephritidae) in the state of Acre, Brazil, reared from guava fruit (*Psidium guajava* L.) and star fruit (*Averrhoa carambola* L.). This finding increases our knowledge about the geographical records of this fruit fly in the Brazilian Amazon.

Keywords: Amazon; *Averrhoa carambola*; geographical records; Medfly; *Psidium guajava*.

Primeiro registro de *Ceratitis capitata* (Wiedemann) (Diptera: Tephritidae) no estado do Acre, Brasil

Resumo. Registra-se pela primeira vez a presença de *Ceratitis capitata* (Wiedemann) (Diptera: Tephritidae) no estado do Acre, Brasil, a partir de frutos de goiabeira (*Psidium guajava* L.) e de caramboleira (*Averrhoa carambola* L.), aumentando o conhecimento dos registros geográficos dessa mosca na Amazônia brasileira.

Palavras-Chave: Amazônia; *Averrhoa carambola*; Distribuição geográfica; Mosca-do-mediterrâneo; *Psidium guajava*.

Ceratitis capitata (Wiedemann) (Diptera: Tephritidae), the medfly, is an important worldwide pest in fruit crops (MALAVASI 2009), due to the extensive human spread of this fly all over the world (HERNÁNDEZ-ORTIZ *et al.* 2010). Its larvae feed on a wide gamut of fruit crops of economic importance (LIQUIDO *et al.* 1991). Currently, this Tephritidae is the most cosmopolitan and highly polyphagous, and it shows a notable capacity to adapt (LIQUIDO *et al.* 1990; ZUCCHI 2015). The species *C. capitata* was firstly recorded in Brazil in 1901, infesting citrus crops in the state of São Paulo (VON IHERING 1901). It was firstly detected in the Brazilian Amazon in the state of Rondônia at the 1990s, and later on at the states of Pará, Maranhão and Tocantins, Mato Grosso and recently in the state of Roraima in October 2014 (ZUCCHI 2012; TRASSATO *et al.* 2017).

A total of 93 species of host plant of *C. capitata* have been catalogued in Brazil, where five are in the Brazilian Amazon (ZUCCHI 2012): *Averrhoa carambola* L. (Oxalidaceae), *Garcinia acuminata* Planch. & Triana, *Garcinia brasiliensis* Mart. (Clusiaceae), *Malpighia glabra* L. (Malpighiaceae) and *Psidium guajava* L. (Myrtaceae).

In the state of Acre, located in western Amazon, there have been reports of only six species of *Anastrepha* (Diptera: Tephritidae) and three species of parasitoids (Hymenoptera) (ADAIME *et al.* 2016; SOUSA *et al.* 2016), since there have been few surveys in this state. In view of this limited information, samplings of fleshy fruits were collected in the municipality of Rio Branco to obtain more information about *Anastrepha* species, their hosts and associated parasitoids in Acre. The samples were randomly collected from plants that bore an abundant quantity of almost mature or mature fruits. Such fruits were picked off from the plant or collected from the ground when recently fallen. The fruits were individually assessed, and adult insects were obtained according to the method of SILVA *et al.* (2011a).

Surprisingly, during sample evaluation in the laboratory, there was emergence of specimens of *C. capitata* from guava fruits (*Psidium guajava* L., Myrtaceae) and star fruit (*Averrhoa carambola* L., Oxalidaceae) (Table 1), collected in the urban zone, being the first record of the species in Acre. Identification was made according to ZUCCHI (2015), and voucher specimens are deposited in the Laboratório de Entomologia Econômica do Centro Experimental Central do Instituto Biológico, municipality of Campinas, São Paulo state, Brazil. In addition, we obtained

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specimens of *Anastrepha striata* Schiner (Diptera: Tephritidae) from a sample of guava fruit, its main host in this region, as demonstrated by Jesus-Barros et al. (2012) and ADAIME et al. (2016).

The occurrence of *C. capitata* in the Brazilian Amazon is still not well defined, especially with respect to its distribution and colonization of hosts. It appears that the invasion is recent and is occurring gradually (SILVA et al. 2011b). On the basis of this work, seven of the nine states that make up the Brazilian Amazon now have records of this pest, excepting only the states of Amazonas and Amapá. Hence, we suggest constant

monitoring (for example, using Jackson traps with the synthetic sex pheromone Trimedlure®) for possible detection of the pest. Specifically in Amapá, ADAIME et al. (2012) carried out monitoring in the periods of March 2004 to September 2006 (in four municipalities) and November 2008 to January 2010 (in three municipalities), without the pest detection. Furthermore, for the same state, there have been intense samplings of fruits in the last 13 years, confirming its absence so far. Therefore it is recommended that the sampling of fruits to be done as detailed by SILVA et al. (2011b), to define the range of hosts of this pest in the region.

Table 1. Rates of infestation of *Psidium guajava* and *Averrhoa carambola* by Tephritidae in municipality of Rio Branco, state of Acre, Brazil.

Hosts	Collection date	Site collection	Fruits collected (n)	Weight (kg)	Puparia (n)	Infestation rate (puparia/kg)	Tephritidae (♀ + ♂)
<i>Averrhoa carambola</i>	13/July/2016	10°00'30.1" S 67°47'27.0" W	22	1,90	33	17,4	<i>C. capitata</i> (6♀ + 6♂)
<i>Psidium guajava</i>	18/July/2016	10°00'29.4" S 67°47'25.8" W	24	0,75	30	40,0	<i>A. striata</i> (6♀ + 5♂) <i>C. capitata</i> (1♂)

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