

Scientific note

First report of Lonchaeidae (Diptera) infesting fruits of *Byrsonima crassifolia* in Brazil

Primer registro de Lonchaeidae (Diptera) infestando frutos de *Byrsonima crassifolia* en Brasil

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Abstract: *Neosilba zadolicha* and *Neosilba bella* (Diptera: Lonchaeidae) are reported for the first time in fruits of *Byrsonima crassifolia* (Malpighiaceae) in Brazil. They are considered occasional species on this tropical fruit.

Key words: *Neosilba bella*. *Neosilba zadolicha*. Murici. Amazon. Flies.

Resumen: Se registran por primera vez *Neosilba zadolicha* y *Neosilba bella* (Diptera: Lonchaeidae) en frutos de *Byrsonima crassifolia* (Malpighiaceae) en Brasil. Se consideran como especies ocasionales en este fruto tropical.

Palabras clave: *Neosilba bella*. *Neosilba zadolicha*. Murici. Amazonia. Moscas.

Murici, *Byrsonima crassifolia* (L.) Kunth (Malpighiaceae), is native to the Amazon region and several other regions of tropical America. The fruits are small globose drupes with fleshy yellow mesocarp (pulp) and characteristic flavor and aroma. They are consumed fresh as juice, jam, liquor and sweets (León 1968; Donadio *et al.* 2002; Lorenzi *et al.* 2006). In addition, fruits of this species have been widely used in the traditional medicine by its antimicrobial and antidepressant properties (Martínez-Vázquez *et al.* 1999; Herrera-Ruiz *et al.* 2011).

The only record of fruit flies (Diptera) associated to fruits of *B. crassifolia* in Brazil was published by Pereira *et al.* (2008) from material collected in the state of Amapá during 2005 and 2006. In their work, a total number of 7,915 fruits (16.02 kg) was collected in 24 sampling points distributed in the municipalities of Macapá, Mazagão and Porto Grande. Three samples were infested by fruit flies of the family Tephritidae (one in Macapá, 0.01 puparia/fruit; two in Mazagão, 0.10 and 0.15 puparia/fruit). *Anastrepha striata* Schiner, 1868 (10 specimens), *A. obliqua* (Macquart, 1835) (8 specimens) and *A. fraterculus* (Wiedemann, 1830) (3 specimens) were recovered in those collections. In other samples of *B. crassifolia* collected in the Brazilian Amazon (states of Amapá and Rondônia), no fruit flies specimens were obtained (Deus *et al.* 2009; Pereira *et al.* 2010; Silva *et al.* 2011a). In Mexico, the presence of *A. serpentina* (Wiedemann, 1830) in *B. crassifolia* was recorded in the state of Chiapas (Aluja *et al.* 1987). However, the presence of Lonchaeidae (Diptera) species in *B. crassifolia* was not recorded in either study.

During May, June, September, and November 2009 we collected 22 samples of *B. crassifolia* (15 individualized fruits per sampling point, totaling 330 fruits and 0.70 kg), in the state of Amapá (Macapá, Porto Grande, Ferreira Gomes, Mazagão and Santana), following Silva *et al.* (2011b). Only

one specimen of *Neosilba zadolicha* Steyskal & McAlpine, 1982 (Lonchaeidae) was recovered from one individualized fruit collected in Porto Grande (00°42'44.3"N 51°21'40,1"W, 87 masl) in May, 06 2009. In the samples, no *Anastrepha* specimens were recovered from any of the collected fruits.

In order to confirm if *B. crassifolia* could be an alternative host for Lonchaeidae in the Brazilian Amazon, a new collection of 747 fruits (1188.9 g) in six different sample points (non-individualized fruits) was carried out in Porto Grande, Amapá, from September 2010 to January 2011. Three samples were infested by frugivorous flies and 13 puparia were recovered from the fruits. Seven males of *Neosilba bella* Strikis & Prado, 2006 and four females probably of the same species emerged from the puparia in two samples (Table 1). The indexes of infestation were 0.03 and 0.06 puparia/fruit. No *Anastrepha* specimens were recorded.

This is the first report of *Neosilba bella* and *N. zadolicha* in *B. crassifolia* in Brazil. Voucher specimens were deposited in the personal collection of P.C. Strikis.

Neosilba zadolicha has a wide distribution in Brazil, from the southern state of Rio Grande do Sul to northern Brazil, occupying a wide range of hosts and ecosystems, the type series of *N. zadolicha* was reared from fruits in Colombia. *Neosilba bella* is known only from Brazil, also occurring in all regions of the country, in many different biomes, and has a narrower range of hosts than *N. zadolicha*. In the Brazilian Amazon, where this work was carried out, 11 and 6 hosts for *N. zadolicha* and *N. bella* have been recorded, respectively (Strikis *et al.* 2011). So far, only Nicácio and Uchôa (2011) have reported the presence of a specimen of *Neosilba* sp. in *Byrsonima orbignyana*, in the state of Mato Grosso do Sul, Brazil. The not identified species of Lonchaeidae was associated with *Anastrepha sororcula* Zucchi, 1979.

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Table 1. Samples of fruits of *B. crassifolia* collected in Porto Grande from September 2010 to January 2011 and puparia recovered.

Collection dates	Latitude N	Longitude W	Fruits		Puparia (n)	Puparia/fruit	Emerged species
			(n)	Weight (g)			
10/09/10	00°35'01.5"	51°41'41.2"	23	31.0	0	0	-
10/09/10	00°36'16.5"	51°42'20.5"	40	16.0	0	0	-
11/22/10	00°42'44.3"	51°21'40.1"	79	98.2	5	0.06	<i>Neosilba bella</i> (2♂), 3♀
12/22/10	00°42'44.3"	51°21'40.1"	170	254.1	0	0	-
12/22/10	00°42'03.9"	51°22'10.7"	235	387.6	7	0.03	<i>Neosilba bella</i> (5♂), 1♀
01/06/11	00°42'44.3"	51°21'40.1"	200	402.0	1	0.005	-

In our study, all emerged *Neosilba* were not associated with Tephritidae species. Although previously Lonchaeidae were considered secondary fruit infesters that commonly use the wounds made by other tephritid flies, our results are in accordance with several authors (see Nicacio and Uchoa 2011) that disagree with this information. The low presence of specimens of *Neosilba* and *Anastrepha* in *B. crassifolia*, and its bounded geographical distribution, indicates that this fruit seems to be an alternative host for this species that is occasionally used when probably no other primary host is present.

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