WILD HOSTS OF FRUGIVOROUS DIPTERANS (TEPHRITIDAE AND LONCHAEIDAE) AND ASSOCIATED PARASITOIDS IN THE BRAZILIAN AMAZON

EZEQUIEL DA GLÓRIA DE DEUS¹, LUANA DOS SANTOS PINHEIRO¹, CAMILA RIBEIRO LIMA², MARIA DO SOCORRO MIRANDA DE SOUSA³, JORGE ANDERSON GUIMARÃES⁴, PEDRO CARLOS STRIKIS⁵ AND RICARDO ADAIME⁶
¹Universidade Federal do Amapá, Programa de Pós-Graduação em Biodiversidade Tropical, Rodovia JK, km 4, 68902-280 Macapá, Amapá, Brazil
²Universidade do Estado do Amapá, Av. Presidente Vargas 650, 68906-970 Macapá, Amapá, Brazil
³Embrapa Hortaliças, Rodovia Brasília/Anápolis, BR–060, km 09, C. Postal 218, 70359-970 Brasília, Distrito Federal, Brazil
⁴Independent Researcher, Av. Paschoal Ardito, No. 886, 13473-010 Americana, São Paulo, Brazil ⁵⁶Embrapa Amapá, Rodovia JK, km 5, No. 2600, 68903-419 Macapá, Amapá, Brazil

*Corresponding author; E-mail: ricardo.adaime@embrapa.br

In the past decade, the importance of the various studies on frugivorous dipterans (Tephritidae and Lonchaeidae) in the Brazilian Amazon has been recognized, especially those focused on diversity, geographic distribution, and host identification. This work aimed to identify wild plant species that are hosts of frugivorous dipterans in Amapá State, which lies in the extreme northeast of the Brazilian Amazon.

From Sep 2010 and Apr 2011, wild fruits were collected in 14 of the 16 municipalities of Amapá (Fig. 1), taking into contemplation the 3 main plant formations in the state, i.e., dryland forest, floodplain forest, and Brazilian savannah (cerrado). The region is located between the latitudes N 03° 50’ and S 00° 34’ and longitudes W 52° 09’ and W 50° 48’. The samples were collected at random from plants that bore an abundant quantity of maturing or mature fruits. Such fruits were picked off the plant or collected from those recently fallen onto the ground. The collected samples were processed as grouped fruits, and adult insects were obtained according to the method of Silva et al. (2011a).

A total of 2,097 fruits were collected (42.0 kg), from 12 plant species native to the Amazon region, in 8 plant families (Table 1). Eight species of Tephritidae were obtained: Anastrepha antunesi Lima, Anastrepha coronilli Carrejo & González, Anastrepha distincta Greene, Anastrepha leptozona Hendel, Anastrepha obliqua (Macquart), Anastrepha parishi Stone, Anastrepha striata Schiner, and Anastrepha fraterculus (Wiedemann). Likewise 4 species of Lonchaeidae were obtained: Neosilba bella Strikis & Prado, Neosilba glaberrima (Wiedemann), Neosilba pseudozadolicha Strikis, and Neosilba zadolicha McAlpine & Steyskal. The Anastrepha and Neosilba species collected in this work had already been reported in the state of Amapá (Silva et al. 2011b; Strikis et al. 2011).

Simaba guianensis Aubl. (Sapindales: Simaroubaceae) is reported for the first time as a host of Tephritidae. In only one sample (41 fruits, 254g) a total of 15 puparia were obtained, from which emerged adults of A. fraterculus and A. parishi (Table 1). In the state of Amapá, A. fraterculus and A. parishi had already been reported in 5 and 3 hosts, respectively (Silva et al. 2011b; Jesus-Barros et al. 2012). New hosts are reported for the lonchaeids N. bella, N. pseudozadolicha, and N. zadolicha (Table 1).

Six species of parasitoids were collected, all of them previously reported in the region (Table 1). However, Doryctobracon crawfordi (Viereck) was associated for the first time with A. coronilli in fruits of Bellucia grossularioides L.; and Doryctobracon areolatus (Szépligeti) was associated for the first time with A. distincta in fruits of Inga laurina (Sw.) Willd. Opius bellus Gahan specimens were obtained from a Gustavia augusta L. sample (from Laranjal do Jari), but no dipterans emerged from the fruits. Therefore it is not possible to determine whether the species is associated with Tephritidae and/or Lonchaeidae. Our results indicate that the wild host plants Spondias mombin L. and B. grossularioides play an important role as reservoirs of native parasitoids. Similar results were obtained in other studies in the Brazilian Amazon (Costa et al. 2009; Ronchi-Teles et al. 2011; Dutra et al. 2013) and other forested areas (López et al. 1999; Aluja et al. 2003).

An unidentified species of Richardia (Tephritoidea: Richardiidae), reported in S. mombin, G. augusta, and Pouteria caimito Radlk., has also often been observed in fruits of Arecaceae [Attalea excelsa Mart., Astrocaryum murumuru Mart.