Talisia olivaeformis (Sapindaceae) and Zuelania guidonia (Flacourtiaceae): New Host Records for Anastrepha spp. (Diptera: Tephritidae) in México

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TALISIA OLIVAEFORMIS (SAPINDACEAE) AND *ZUELANIA GUIDONIA* (FLACOURTIACEAE): NEW HOST RECORDS FOR *ANASTREPHA* SPP. (DIPTERA: TEPHRITIDAE) IN MÉXICO

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The genus *Anastrepha* (Diptera: Tephritidae) includes the principal pests of many fruit crops in the New World (Foote et al. 1993). Host associations have been recorded from 44% of the described species, but new wild hosts frequently are found (Aluja et al. 2003). In the Mexican state of Campeche, 10 species of *Anastrepha* are known (Hernández-Ortiz 1992; Hernández-Ortiz et al. 2002; Tucuch-Cauich et al. 2008). Most records were obtained from label data on specimens deposited in entomological collections or from monitoring systems with McPhail traps (baited with liquid protein), and little information has been generated from wild host fruits in the region. We now report new records of fruit flies reared from 2 wild host fruits of cultural and economic importance in the Mexican state of Campeche.

Fruits of *Talisia olivaeformis* (H. B. K.) Radlk (Sapindaceae), known locally as guaya, fayum, guayo, or cotoperis, are green, 2-3 cm in diameter, spherical, with thick pericarp, orange-yellow flesh, and with a single seed (Pulido-Salas 1993). The edible fruits are a source of alternative income to inhabitants in the Campeche region (Zarate-Hoyos 1998) and its timber has economic potential (Pulido-Salas 1993).

The permetrina, paragua, tamay, or volador, *Zuelania guidonia* (Sw.) Britton & Millsp. (Flacourtiaceae) is a component of traditional Mayan gardens (Ford 2008) with spherical fruit 5 cm in diameter that ripen at the end of the dry season (Enquist & Sullivan 2001).

Ripe fruits samples were collected on 27 May (4.1 kg of *T. olivaeformis*) and 8 Jul 2009 (1 kg. of *Z. guidonia*) in La Victoria, Campeche (18°29.251'N; 90°55.304'W; 42.6 elev.). The fruits were transported to the laboratory of the Escuela Superior de Ciencias Agropecuarias (Universidad Autónoma de Campeche, UAC) and dissected for extraction of larvae. These larvae were placed individually in plastic cups for rearing (3 × 2 cm), with agrolite (Polietilenos del Sur©, Morelos, México) as a substrate for pupation. The chambers were maintained under ambient conditions (32°C± 2, RH 95% ± 5).

Fruit flies began to emerge from *T. olivaeformis* on 12 Jun, with parasitoids emerging on 22 Jun. Specimens emerged from *Z. guidonia* on 24 Jul. Adult flies were preserved in 70% alcohol for subsequent identification with the keys of Foote et al. (1993) and the parasitoids with those of Guimaraes et al. (2005) and Wharton (1997). Voucher specimens (insects and plants) were deposited in the entomological collection and herbariums of the Escuela Superior de Ciencias Agropecuarias (UAC) and Universidad Autónoma de Yucatán (UADY).

Talisia olivaeformis yielded 168 pupae, of which 81 were *Anastrepha fraterculus* (Wiedemann) (47 females and 34 males), 6 were *Anastrepha ludens* (Loew) (3 females and 3 males), and 5 were *Doryctobracon areolatus* Szepligeti (5 females), a braconid parasitoid previously recorded from these *Anastrepha* species (López et al. 1999). *Zuelania guidonia* yielded 81 pupae: 31 were *A. fraterculus* (16 females and 15 males), 1 was *Anastrepha striata* Schiner (male) and 2 were *Odontosema albinerve* Kieffer (=*Odontosema anastrephae*, sensu Kieffer), a figitid parasitoid associated with these tephritid species (López et al. 1999).

Fruits of *T. olivaeformis* were recorded as a host for *Anastrepha* spp. in Venezuela by Guagliumi (1966), but the species were not determined; thus, the *Anastrepha* records presented here are the first identified *Anastrepha* species reported for this host plant.

Previously *Anastrepha zuelaniae* Stone was the only fruit fly known to be associated with *Z. guidonia* (Bush 1962; Norrbom & Kim 1988; Foote et al. 1993), but our data show that *A. fraterculus* and *A. striata* can complete their development in this host, as well as *A. zuelaniae*. The increase in the number of fruit fly species that attack wild hosts may be a preference for small wild fruits compared with larger fruit with

commercial value (Aluja et al. 2000) or competition for oviposition sites (Sivinski et al. 2004). Further study is needed to determine whether associations found here are occasional records or if the host resources are used by the tephritids regularly.

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Summary

New host records of *Anastrepha* spp. (Diptera: Tephritidae) reared from 2 wild fruit species collected in Campeche, Mexico, are provided. *Anastrepha fraterculus* (Wiedemann) and *A. ludens* (Loew) were reared from *Talisia olivaeformis* (H. B. K.) Radlk, and *A. fraterculus* and *A. striata* Schiner from *Zuelania guidonia* (Sw.) Britton & Millsp. Specimens of the braconid larval parasitoid, *Doryctobracon areolatus* Szepligeti, were recovered from the *T. olivaeformis* fruits, and the eucoiline larval parasitoid *Odontosema albinerve* Kieffer was reared from *Z. guidonia*.

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