

Sapote Fruit Fly, Serpentine Fruit Fly, *Anastrepha serpentina* (Wiedemann) (Insecta: Diptera: Tephritidae)¹

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Introduction

The sapote fruit fly, *Anastrepha serpentina* (Wiedemann), sometimes called the serpentine fruit fly, is intercepted frequently in United States ports of entry in various hosts from several countries. It is an important pest species in Mexico because its larvae infest sapote, sapodilla, willowleaf lucuma, and related fruits.

Synonyms

Dacus serpentina Wiedemann, 1830

Leptoxys serpentina (Wiedemann), 1843

Urophora vittithorax Macquart, 1851

(*Trypeta*) *Acrotoxa serpentina* (Wiedemann), 1873

Acrotoxa serpentina (Wiedemann)

Distribution

This species is one of the most widely distributed in the genus *Anastrepha*. Its range extends from northern Mexico south to Peru and northern Argentina, and is recorded from Trinidad, Tobago, and Curaçao. It has also been trapped in southern Texas in the USA, but it is uncertain if it has breeding populations there (Norrbon 2003).

If *A. serpentina* were introduced into southern Florida, it could possibly become a serious pest of the tropical fruits grown there.

Description

Adult

The adult is a medium sized to fairly large, dark brown fly, marked with pale yellow and orange-brown. The dorsum of the thorax is dark brown with yellow markings. The wing is 7.25–8.5 mm long. Wing bands are predominantly

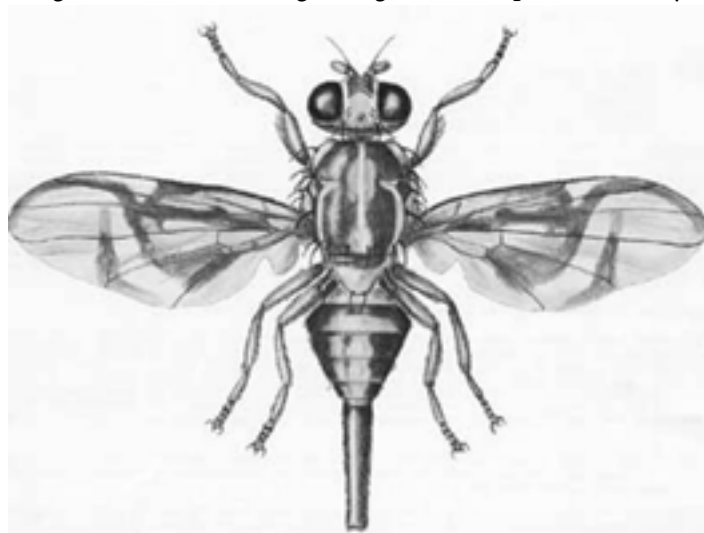


Figure 1. Adult female sapote fruit fly, *Anastrepha serpentina* (Wiedemann). Also called the serpentine fruit fly.

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dark brown, and the costal and S bands are rather broadly coalescent. On the wing, the hyaline areas to each side of the juncture rarely touch the vein R_{4+5} , with no distal arm to V band. The proximal arm is slender and entirely separated

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from the S band. The dorsum of the abdomen is dark brown marked, with brownish yellow and orange. Leg color varies from pale yellow to brownish yellow, or brown on one side and pale yellow on the other.

The ovipositor sheath of the female is 3.0–3.9 mm long, orange-brown, rather stout basally and depressed apically. The spiracles are about 1.2 mm from its base. The ovipositor itself is 2.8–3.7 mm long, with the tip slightly more than apical half minutely serrate.

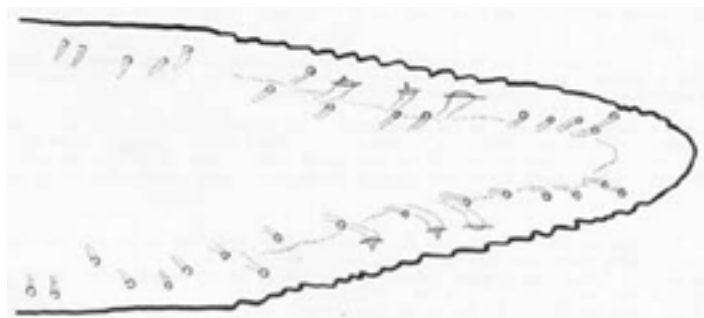


Figure 2. Ovipositor tip of an adult female sapote fruit fly, *Anastrepha serpentina* (Wiedemann). Also called the serpentine fruit fly.

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Larva

The mature larva are relatively large for fruit flies, 9–10 mm long and 1.5 mm in diameter, with the usual elongate shape. Anterior respiratory organs have the external parts somewhat fan-shaped, but nearly flat across the top, with 17 to 19 small, thick, short tubules. For detailed larval characters, see Phillips (1946).

Anastrepha serpentina, the type of the genus, is one of a group of four species that differ noticeably in color pattern from other species in the genus. As illustrated by Stone (1942), *A. anomala* Stone has the wing pattern as in *A. serpentina*, but has a longer ovipositor and a reduced dark pattern on the pleura and abdomen. *A. ornata* Aldrich has the costal and V bands separated, and *A. pulchra* Stone has a large black spot in the disk of the wing.

Life cycle and Biology

Females may oviposit up to 600 eggs in about one and a half months. Mature green fruits apparently are preferred. Females have been observed to continue oviposition over periods extending from 21 to 29 weeks under laboratory conditions.

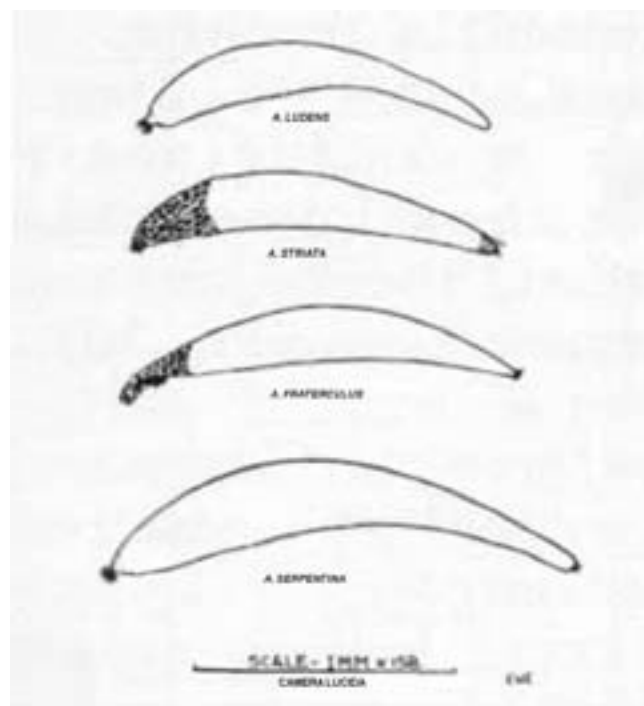


Figure 3. Egg of the sapote fruit fly, *Anastrepha serpentina* (Wiedemann), compared with other common *Anastrepha* species.

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Hosts

The preferred food plants are members of the family Sapotaceae, especially star-apple, *Chrysophyllum cainito*, and sapodilla, *Manilkara zapota*. Other hosts include:

Annona glabra, pond-apple
Citrus mitis, calamondin; *C. paradisi*, grapefruit; *C. sinensis*, sweet oranges
Cydonia oblonga, quince
Dovyalis hebecarpa, 'Ceylon gooseberry'
Ficus spp.
Malus sylvestris, European wild apple
Mammea americana, mammee apple
Mangifera indica, mango
Mimusops coriacea, monkey's apple
Persea americana, avocado
Pouteria lucuma, 'lucuma'; *P. sapota*, mamey sapote
Prunus persica, peach
Psidium guajava, common guava
Pyrus communis, European pear
Sideroxylon palmeri and *S. tempisque*, bully trees
Spondias mombin, jobo or hog plum
Also, larvae have been reared experimentally from tomato, *Lycopersicum esculentum*.

Damage

Infestations in tree-ripe fruits frequently are so high that in parts of Mexico where these fruits are grown, especially in Veracruz, that the growers do not permit them to mature on the trees, but pick them green and ripen them artificially to avoid infestation. Fruits so ripened, however, are inferior to tree-ripened fruits.

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