UNIVERSITY OF FLORIDA
IFAS EXTENSION

EENY205

South American Cucurbit Fruit Fly, *Anastrepha grandis* (Macquart) (Insecta: Diptera: Tephritidae)[1]

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Introduction

Anastrepha grandis (Macquart) (1846: 227), which exists in several South American countries and possibly Panama, attacks watermelon and other fruits of the family Cucurbitaceae. Once a pest of minor to moderate importance generally, in recent years it has become a rather important pest. The pest status differs in each country and has changed in the last decade. This species would seem to be potentially of economic importance in Florida and southern Texas should it ever be introduced there. It has been intercepted in the United States in pumpkin from Argentina and Brazil, and one adult was found in banana debris from Panama.

Synonymy

Acrotoxa grandis (Macquart)

Anastrepha schineri Hendel

Anastrepha latifasciata Hering

Tephritis grandis Macquart

Trypeta grandis (Macquart)

Distribution

Argentina, Bolivia, Brazil (except north), Colombia, Ecuador, Panama (?), Paraguay, Peru and Venezuela.

Identification

Rather large, yellow-brown, with yellow and dark-brown markings. Mesonotum 3.3 to 4.0 mm long, yellow-brown, with humerus, median stripe widening to include acrostichal bristles but not reaching scutellum, lateral stripes from just before transverse suture to side of scutellum, stripe below notopleuron, metapleuron, and scutellum except extreme base yellow; a sublateral stripe from level of humeral bristle to scutellum, broken at transverse suture, a band along scutoscutellar suture, intensified medially, and a spot on pteropleuron dark brown; metanotum blackened laterally. Macrochaetae dark brown; pile yellowish brown. No sternopleural bristle. Wing 9.0 to 10.5 mm long, the bands yellow brown, rather diffuse; costal and S bands broadly connected, and no distinct hyaline spot anterior to

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vein R_{4+5}; distal arm of V band absent, the proximal arm not joining S band.

Figure 1. Adult female South American cucurbit fruit fly, *Anastrepha grandis* (Macquart). Credits: Division of Plant Industry

Figure 2. Adult male South American cucurbit fruit fly, *Anastrepha grandis* (Macquart). Credits: Division of Plant Industry

Female terminalia: Ovipositor sheath 5.8-6.2 mm long, tapering posteriorly to apical third, which is distinctly depressed and broadened; in profile the sheath is distinctly concave dorsally on median half and concave ventrally on apical third. Rasper well developed, of slender, curved hooks in five or six rows. Ovipositor slightly longer than length of ovipositor sheath, being somewhat curved dorsoventrally to permit fitting into sheath; tip long and slender, without serrations; extreme base slightly widened (Stone 1942).

Steyskal (l977) distinguished *A. grandis* from the other four species of the Grandis group as follows: Vein R_3 somewhat undulant; metanotum yellow (*A. bezzii* Lima and *A. balloui* Stone); vein R_3, not undulant; metanotum marked with black (*A. artrigona* Hendel, *A. shannoni* Stone, and *A. grandis* (Macquart)). Mesonotum not striped with black (*A.*

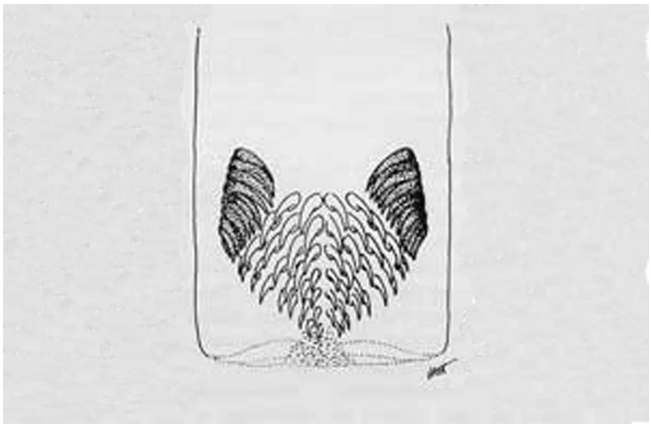

Figure 3. Rasters at tip of ovipositor sheath. Credits: Division of Plant Industry

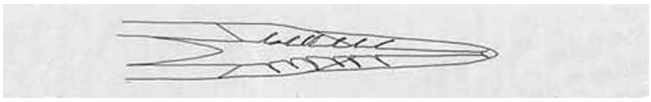

Figure 4. Ovipositor. Credits: Division of Plant Industry

atrigona); mesoscutum with black stripes (*A. shannoni* and *A. grandis*). Mesoscutum and pleura largely black, wing with pattern darkened (*A. shannoni*); mesoscutum and pleura with little black, wing pattern very little darkened (*A. grandis*).

Hosts

Citrullus lanatus (Thunberg) Matsumura & Nakai (watermelon), *Cucumis sativus* Linnaeus (cucumber), *Cucurbita maxima* Duchesne (autumn and winter squash, pumpkin), *Cucurbita pepo* Linnaeus (summer and autumn pumpkin and squash, gourd, marrow), *Cucurbota moschata* (Duchesne ex Lam.) Duchesne ex Poiret ("amyama," "pumpkin"), *Lagenaria siceraria* (Molina) Standl. ("camasa"), *Cucumis melo* L. ("honeydew melon"). It has also been known to attack common guava, *Psidium guajava* (Norrbom in press) The record of rearing from oranges (Greene 1934) is erroneous. Immature fruits of cucurbits apparently are preferred, but mature or nearly mature fruits of some varieties are attacked occasionally.

Survey and Detection

Adults are easily recognized by their very large size (wing length 10 mm), long aculeus (a sharp spine jutting from beneath the margin of the eight sternite) and rather diffuse wing markings which are not of the typical *Anastepha* type.

Larvae can be collected from infested fruit and are very difficult to identify to species except when reared to adults. For best larval preservation, kill in boiling water, place in 50% isopropyl alcohol for two days, then in 75% isopropyl alcohol. Adults may be collected on stickyboard and in baited traps.

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