

Pest Alert

DACS-P-01671

Pest Alert created 19-June-2003

Florida Department of Agriculture and Consumer Services, Division of Plant Industry
Charles H. Bronson, Commissioner of Agriculture

Mexican fruit fly *Anastrepha ludens* (Loew) (Tephritidae)

Gary J. Steck, Gary.Steck@FreshFromFlorida.com, Florida Department of Agriculture & Consumer Services, Division of Plant Industry

INTRODUCTION: Fruit fly-infested hot peppers were found at two retail locations in Pinellas County on 8 May 2003. Live larvae of an *Anastrepha* species, likely *A. ludens*, the Mexican fruit fly, were in 'manzano' peppers, *Capsicum pubescens* cv. Rocoto (Fig. 1). Identification from the larval stage was tentative, but their identity as *Anastrepha ludens* was confirmed from specimens reared under quarantine to the adult stage on 2 June 2003. Peppers apparently originated in Mexico and crossed the border into Texas, whence live fruit fly larvae have been delivered to at least six additional U.S. states.

On 16 May 2003, the partially decomposed remains of a single adult specimen of *Anastrepha ludens* was captured in a multi-lure trap in Orlando. It is unknown whether this adult has any connection with the introduction of live larvae in manzano peppers.

Capsicum pubescens has not been recorded previously as a host for any *Anastrepha* species. *Capsicum annuum*, however, is a known field host for *A. suspensa*, the Caribbean fruit fly, and has also been infested in artificial situations by *A. ludens*, *A. obliqua* (West Indies fruit fly), *A. serpentina* (sapote fruit fly), and *A. distincta* (Norrbom, in press).

DISTRIBUTION: Mexican fruit fly occurs naturally from northern Mexico to Costa Rica. It is a chronic pest in the Rio Grande Valley of Texas. An eradication program is presently underway in southern California. Mexican fruit fly adults have been intercepted only twice in Florida, first in Key West in 1934, then in Sarasota in 1972 (Steck 1998).

HOST PLANTS: About 60 different hosts are known to be infested by Mexican fruit fly in nature, and numerous other hosts have been shown to support larval development in laboratory studies (Norrbom, in press). Important hosts in Florida that are at risk include most *Citrus* species (e.g., grapefruit, sweet and sour orange, tangerine), mango, guava, tomato and avocado. In Mexico, losses to citrus, mango and guava due to Mexican fruit fly are estimated at 25% (Enkerlin 1989).

ADULT IDENTIFICATION: Large, colorful flies with brown bodies, bright yellow stripes on the thorax, and elaborately patterned wings (Fig. 2). Females have a long ovipositor (3.35-4.7 mm long) and sheath relative to its body size. A related species is Caribbean fruit fly, which is widespread in Florida. It is readily distinguished from Mexican fruit fly by its much shorter ovipositor (only 1.45-1.6 mm long), and wing band color (dark brown in *suspensa* vs. pale yellow in *ludens*).

LARVA IDENTIFICATION: Mexican fruit fly larvae are up to 12 mm long and about 2 mm diameter, and creamy white in color; the body is mostly cylindrical but tapered at the head end, which terminates in a pair of very fine black mouthhooks (Fig. 3).

DETECTION: An early detection trapping network, a joint operation of the Florida Department of Agriculture & Consumer Services and the U.S. Department of Agriculture, is in place year-round in Florida for exotic fruit flies. Mexican fruit fly responds to McPhail or multi-lure traps, which act as food attractants. In response to the detection of an adult fly in Orlando, trap intensity has been greatly increased to over 1,100 traps in an 81-square mile area surrounding the detection site. Heightened trap monitoring will continue for a period of time equal to at least the duration of two life cycles (30 days



Florida Department of Agriculture and Consumer Services
Adam H. Putnam, Commissioner

or more each). To date, no additional flies have been captured.

REFERENCES:

- Enkerlin, D., L. Garcia R., and F. Lopez M.** 1989. *Mexico, Central and South America, Chapter 2.7, pp. 83-90 in Robinson, A. S. and G. Hooper (eds.), Fruit flies: their biology, natural enemies and control. W. Helle, (ed.), World crop pests, Volume 3A. Elsevier Science Publishers, Amsterdam.*
- Norrbom, A. L.** *Host plant database for Anastrepha and Toxotrypana (Diptera: Tephritidae: Toxotrypanini), Diptera Data Dissemination Disk, North American Dipterists' Society (in press)*
- Steck, G. J.** *Mexican fruit fly, Anastrepha ludens (Loew) (Diptera: Tephritidae). Entomology Circular No. 391 ~ pdf, Nov/Dec 1998, Florida Department of Agriculture & Consumer Services. 2 p.*



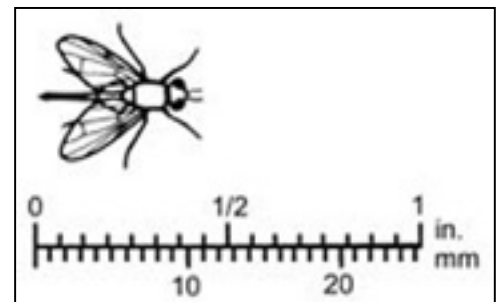
Fig. 1. Manzano peppers, *Capsicum pubescens* cv. Rocoto.
Photo credit: Jeffrey Lotz, FDACS-DPI.



Fig. 2. Mexican fruit fly, *A. ludens* female.
Photo credit: Jack Clark, University of California Cooperative Extension.



Fig. 3. *A. ludens* larva in *C. pubescens*.
Photo credit: Jeffrey Lotz, FDACS-DPI.



Adult female Mexfly +/-10 to 12 mm.