

## Melon fly (505)

### Summary

- Widespread. Australia (Queensland), Guam, Kiribati, Nauru, MNI, PNG, Solomon Islands.
- Major invasive pest of cucumber family, also Solanum crops.
- Eggs (plus fruit fly-beneficial bacteria) laid in flowers and fruits giving a characteristic 'sting'. Bacteria rot flesh providing food for maggots, and fruits usually fall to ground where larvae pupate. Adults, size of slender large house fly, bright yellow markings on thorax, T-shaped mark on abdomen, and smoky-brown marks at wing tips and back of wings along veins. Life cycle 3-5 weeks. Adults survive many weeks.
- Spread on the wing (moderately strong flier), and as larvae in infested fruit.
- Natural enemies: *Psytalia fletcheri* (from India to Hawaii) - moderate mortality in *Momordica*, limited in cultivated fruit.
- Biosecurity: technologies and schemes to facilitate trade, including:
  - post-harvest measures: HTFA (high temperature forced air); low temperature; insecticide dips; irradiation.
  - area freedom, or area-wide management.
  - consider in-country quarantines where melon fly is not widespread, or where countries free from melon fly border those infested.
- Cultural control: (i) monitor – trap male flies with pheromone (cure-lure); regularly check ripe fruit; (ii) protein baits – use yeast autolysate and insecticide as a spot spray; (iii) hygiene – bag fruit; harvest early; pick up fallen fruit, and remove those damaged but still on the crop, and destroy; (iv) crop rotation; (v) destroy remains of harvest.
- Eradication: define quarantine area; control fruit movement; remove fruit from trees and collect fallen fruit, protein bait/insecticide sprays; male annihilation; possibly SIT (sterile insect technique).
- Chemical control: protein bait (yeast hydrolysate) plus insecticide.

### Common Name

Melon fly

### Scientific Name

*Zeugodacus cucurbitae*; known previously as *Bactrocera (Zeugodacus) cucurbitae*, and *Bactrocera cucurbitae*.



Photo 1. Premature yellowing is the first external sign of damage (arrowed) on bitter melon caused by melon fly, *Zeugodacus cucurbitae*. Yellowing of this kind results from egg-laying or larval feeding.



Photo 2. Damage and premature ripening caused by infestation of melon fly, *Zeugodacus cucurbitae*.



Photo 3. Maggots (larvae) of melon fly, *Zeugodacus cucurbitae*, from bitter melon.



Photo 4. Maggots, melon fly, *Zeugodacus cucurbitae*, developing in chili fruit.



Diagram. General scheme of fruit fly life cycle.



Photo 5. Adult melon fly, *Zeugodacus cucurbitae*.



Photo 6. Adult melon fly, *Zeugodacus cucurbitae*.



Photo 7. Adult melon fly, *Zeugodacus cucurbitae* (side view).



Photo 8. Adult melon fly, *Zeugodacus cucurbitae*, showing the T-shaped mark on the abdomen.



Photo 9. Adult melon fly, *Zeugodacus cucurbitae*, showing the wings from above. Note the smoky, fuzzy markings at the wing-tips and rear of the wings.



Photo 10. Close-up of Photo 9, adult melon fly, *Zeugodacus cucurbitae*, showing smoky, fuzzy markings at the wing-tips and rear of the wings.

and from Yates. Fruit fly control in your garden (<https://www.yates.com.au/plants/problem-solver/pests/fruit-fly/>). Photo 1 Melon Fly (*Zeugodacus cucurbitaceae*). Scott Bauer, USDA Agricultural Research service, Bugwood.org. Photos 7-10 Walker K (2006) Melon Fruit Fly (*Bactrocera cucurbitae*). Museum of Victoria. PaDIL - <http://www.padil.gov.au>. Diagram McDougall S, et al. (2013). Tomato, capsicum, chilli and eggplant: A field guide for the identification of insect pests, beneficials, diseases and disorders in Australia and Cambodia. Australian Centre for International Agricultural Research (ACIAR). (<http://aciarc.gov.au/files/mn-157/index.html>).

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