

Factsheet *Bactrocera oleae* (Rossi)

Original name: *Musca oleae* Rossi, 1790: 317

Vernacular name: Olive fruit fly

(updated April 29th, 2020)

Formal redescription (after White, 2006)

Wing length, 4.3-5.2 mm.

Head. Pedicel+first flagellomere not longer than ptilinal suture. Face, antennal furrow with a dark spot. Frons, frontal setae 2, orbital seta 1.

Thorax. Scutum red-brown to black; postpronotal lobe yellow; notopleural callus yellow; notopleural xanthine absent; lateral and medial postsutural vitta absent. Scutellum often with a basal black triangle. Anepisternum with a stripe from notopleural callus to (or almost to) katapisternum; extended onto katapisternum. Laterotergal xanthine confined to katatergite. Thoracic setae. Anterior notopleural seta present; anterior supra-alar seta absent; prescutellar acrostichal seta absent; basal scutellar seta absent.

Wing. Basal cells bc and c without an almost complete covering of microtrichia; cell bm without microtrichia. Narrow subbasal raised section of cell br without microtrichia. Crossvein R-M beyond middle of cell dm. Costal band absent (reduced to a small apical spot). Anal streak absent (at most with a trace of colour confined to cell bcu). Cells bc and c hyaline. Without any crossbanding. Legs. Femora pale coloured.

Abdomen. Red-brown, patterned black; shape and patterning, see image (CD-C). Tergites II-V separate.

Male. Tergite III with pecten, dense microtrichia adjacent end A₁+Cu₂, and hindtibia preapical "pad". Basal costal sections without specialised setae. Female. Aculeus pointed; no torsion.

Encyclopedia of Life link: <http://eol.org/pages/724421/overview>

DNA barcoding

Multiple reference DNA barcodes from the species distribution are available on the Barcode of Life Data Systems (BOLD) at :

http://www.boldsystems.org/index.php/Taxbrowser_Taxonpage?taxon=Bactrocera+oleae&searchTax=
(accessed May 2020)

DNA barcoding might be considered as a fairly suitable tool for the molecular identification of *B. oleae*, regardless the fact that the BINs in which this species is represented, also include a few unidentified / possibly misidentified reference sequences

Biology

Under optimal conditions, the egg development takes a single day. Larval development can take up to 37 days, but as short as 8 under optimal conditions. Pupal development ranges from 9 to 49 days. The lower temperature threshold ranges from 10 to 12.5°C while the upper threshold ranges from 30 to 32°C. Two to five generations are reported in different parts of Europe and the Middle East (see review in Daane & Johnson (2010) for further references and details on the biology.

Host plant list

This is a specialized feeder only known from both domesticated and wild olives.

Additional information on host records and associated specimens can be found on :
<http://projects.bebif.be/fruitfly/taxoninfo.html?id=172>

Impact & management

The olive fruit fly is the major pest on domesticated olive cultivation in the Mediterranean where it can cause severe losses. Worldwide it is estimated to be responsible for 5% loss of the total olive production. Locally, losses can be up to 80% of oil value and 100% of some table cultivars (Daane & Johnson, 2010).

Management for this species is, as for most fruit fly pests, most efficient using an IPM (Integrated Pest Management) program, including aspects such as orchard sanitation, bait sprays, mass trapping among others. General reviews on the current IPM components applied in Africa can be found in chapters 13 to 20 of Ekesi et al. (2016).

No SIT (Sterile Insect Technique) application specifically for this species has been developed in Africa.

Attractants & trapping

Both sexes can be attracted by protein bait products such as liquid protein baits, ammonium bicarbonate.

Male flies can be attracted by Spiroketal lure.

General information on trapping, types of traps, lures and required density of trapping stations can be found in IAEA (2013), Shelly et al. (2014), and Manrakhan (2016).

Distribution

Bactrocera oleae is widespread in southern and eastern Africa, but the exact boundaries of its distribution are poorly known. It is of origin an African species that has spread to the Mediterranean Basin, Central Asia and more recently to western USA. In the Indian Ocean it is only reported from La Réunion island.

Distribution map for Africa, based upon specimen records with georeferences is available at:

<http://projects.bebif.be/fruitfly/taxoninfo.html?id=172>

For worldwide distribution, see GBIF: <http://www.gbif.org/species/7587619>

Others

CABI Plantwise factsheet on *B. oleae* can be found at:

<http://www.plantwise.org/knowledgebank/datasheet.aspx?dsid=17689>

CABI invasive species compendium on *B. oleae* can be found at:

<http://www.cabi.org/isc/datasheet/17689>

REFERENCES

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