

# Factsheet *Neoceratitis cyanescens* (Bezzi)

**Original name:** *Pardalaspis cyanescens* Bezzi, 1923: 529.

**Vernacular name:** Tomato fruit fly

(updated April 29<sup>th</sup>, 2020)

## **Formal redescription** (after De Meyer & Freidberg, 2012)

### Male

Body length: 4.18 (3.20–4.80) mm; wing length: 4.15 (3.00–4.70) mm.

Head. Antenna yellow, first flagellomere about three times as long as wide; arista pubescent with hairs at most equal to basal width. Frons yellow, between dorsal frontal seta and ventral orbital seta usually with pair of darker spots; dorsal half with golden microtrichia; setae black. Face yellow-white, ventral eye margin with darker yellow to brown spot; occiput dorsal third yellowish to yellow-brown, ventral half yellow-white.

Thorax. Postpronotal lobe whitish, at most anterior margin slightly brownish. Scutum ratio 0.90–0.99; scutum shining black-brown, silver microtrichia in typical pattern except more extensive than in other species; dark pilosity except where silver microtrichia with silvery setulae. Pleura brown, anepisternum with white band occupying posterodorsal part, extending to postpronotal lobe, its ventral margin extending to posteroventral fourth of anepisternum; katatergite and anatergite whitish, posteroventral third to half of katatergite and posteroventral fourth of anatergite brown; one black anepisternal seta. Scutellum swollen with straight margin near basal seta, white, basal margin and apical half black-brown.

Legs. Yellow, fore femur at least with yellow-brown streak posterodorsally, sometime more extensively darkened; mid and hind femora largely yellow-brown except apically yellow.

Wing. With discal, subapical, anterior apical and posterior apical brown bands, all well developed. Basal brownish part partially confluent with subbasal brown spots and streaks. Subapical band isolated. R-M ratio 0.73–0.75.

Abdomen. Shining yellow to reddish, occasionally more brownish. Tergite 2 along posterior 1/2 and tergite 4 along posterior 1/2 to 3/4 with transverse band of silvery microtrichia, anterior half with brownish microtrichia. Male terminalia with lateral surstylus elongated.

### Female

Body length: 4.65 (3.90–5.00) mm; wing length: 4.59 (4.00–5.00) mm.

As male except for the following characters: arista pubescence slightly longer, up to almost twice the width of the arista. Femora more yellowish, usually at most with irregular yellow-brown streaks, rarely as darkened as in male. Oviscape half as long as abdominal tergites 1-5 jointly, shining yellow to reddish. Aculeus brown; six times as long as wide; apically evenly tapered; apex with subapical steps.

Encyclopedia of Life link: <http://eol.org/pages/727647/overview>

## DNA barcoding

A limited number of reference DNA barcodes of *N. cyanescens* are available on the Barcode of Life Data Systems (BOLD, March 2017) at:

[http://www.boldsystems.org/index.php/Taxbrowser\\_Taxonpage?taxon=Neoceratitis+cyanescens&searchTax=](http://www.boldsystems.org/index.php/Taxbrowser_Taxonpage?taxon=Neoceratitis+cyanescens&searchTax=)

(accessed May 2020)

In BOLD, *N. cyanescens* only forms monospecific BINs including representatives from the geographical distribution of this species. For this reason, DNA barcoding might be considered as a suitable tool for its molecular identification.

## Biology

*Neoceratitis cyanescens* can complete its life cycle in 45 to 46 days at 25°C (Brevault et al. 2008). Adults can live up to or beyond 11 weeks (Brevault et al. 2008). Females start laying eggs at 6 days after adult emergence (Brevault et al. 2008). Eggs are laid under the fruit skin and are usually white to creamy yellow in colour. Eggs hatch into larvae which feed on the fruit pulp. There are three larval instars. The larval duration of *N. cyanescens* varies between 5 and 31 days at temperatures ranging between 35°C and 15°C respectively (Brevault & Quilici, 2000). Mature larvae drop to the soil and burrow to pupate. An adult fly emerges from the pupa after 11 to 40 days at temperatures ranging from 30°C to 15°C (Brevault & Quilici, 2000).

## Host plant list

*Neoceratitis cyanescens* is reported from a number of commercial Solanaceae hosts, including tomato, bell pepper and eggplant. No wild hosts are currently known but other representatives of the genus *Neoceratitis* are known to infest the genus *Lycium* (De Meyer & Freidberg, 2012). Throughout its range it is recorded from the hosts listed in the table below.

PlantFamily	PlantLatinName	PlantCommonNameEnglish
Solanaceae	Capsicum annuum	bell pepper, capsicum
Solanaceae	Capsicum frutescens	tabasco pepper
Solanaceae	Cyphomandra betacea	Tree tomato
Solanaceae	Solanum lycopersicum	tomato
Solanaceae	Solanum macrocarpon	
Solanaceae	Solanum mauritianum	bugtree
Solanaceae	Solanum melongena	aubergine, eggplant
Solanaceae	Solanum nigrum	black nightshade
Solanaceae	Solanum torvum	

Additional information on host records and associated specimens can be found on :

<http://projects.bebif.be/fruitfly/taxoninfo.html?id=158>

## Impact & management

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 and three component Biolure.

No male specific lure is known.

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

*Neoceratitis cyanescens* is endemic to the Western Indian Ocean with records from Madagascar, La Réunion, Mauritius and Comoro Archipelago. Not known from the African mainland.

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

<http://projects.bebif.be/fruitfly/taxoninfo.html?id=158>

## Quarantine regulations

*Neoceratitis cyanescens* is on the A1 quarantine pest list of the EPPO <https://gd.eppo.int/taxon/CERTCY/categorization>.

## Others

CABI Plantwise factsheet on *N. cyanescens* can be found at:

<http://www.plantwise.org/knowledgebank/datasheet.aspx?dsid=12372>

CABI invasive species compendium on *N. cyanescens* can be found at:

<http://www.cabi.org/isc/datasheet/12372>

## REFERENCES

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