

## EPPO STANDARD ON DIAGNOSTICS

### PM 7152 (2) *Diaphorina citri*

**Specific scope** This Standard describes a diagnostic protocol for *Diaphorina citri*.<sup>1</sup>

This Standard should be used in conjunction with PM 7176 *Use of EPPO Diagnostic Standards*.

**Specific approval and amendment** Approved in 2004-09. Revised in 2026-01. This new version includes a more precise description of the genus *Diaphorina*, a list of diagnostic characters (including new ones) for *Diaphorina citri* with explanatory figures, a differential diagnosis from other morphologically similar species developing on citrus and a protocol for permanent slide mounting of Psylloidea.

Authors and contributors are given in the Acknowledgements section.

#### 1 | INTRODUCTION

The Asian citrus psyllid *Diaphorina citri* is a sap-sucking insect confined to Rutaceae, feeding on all types of *Citrus*, especially lemon and lime. Species within the *Murraya* genus, including *M. paniculata*, an ornamental commonly known as orange jasmine, are probably the original host-plants of *D. citri* (Hollis, 1987).

The main economic importance of *D. citri* is as the vector of ‘*Candidatus Liberibacter asiaticus*’, the causal agent of the very serious citrus disease Huanglongbing (also known as citrus greening). *Diaphorina citri* can also transmit ‘*Candidatus Liberibacter africanus*’ under laboratory conditions (EPPO, 2025a), and can transmit ‘*Candidatus Liberibacter americanus*’, which is found in Brazil, under natural conditions (Teixeira et al., 2005). Fourth and fifth instar immatures, as well as the adults are capable of acquiring and transmitting ‘*Ca. L. asiaticus*’ to citrus. In addition, *D. citri*, as is the case for other sap-sucking pests, can directly cause defoliation and dieback. Serious damage to growing points can occur, which can lead to dwarfing as well as lack of juice and taste in fruits. Heavy infestations can cause blossom and fruitlet drop. *Diaphorina citri* has a wide distribution and is present throughout Asia, and has been introduced into America, Africa, the Indian Ocean and Oceania (Catling, 1970; EPPO, 2025b). In

the EPPO region, the species has been recorded from Israel and Cyprus. For updated geographical distribution consult EPPO Global Database (EPPO, 2025b). A datasheet providing more information on the biology is also available in EPPO Global Database (EPPO, 2025a).

#### 2 | IDENTITY

**Name:** *Diaphorina citri* Kuwayama, 1908.

**Other scientific names:** *Euphalerus citri* (Kuwayama, 1908); Crawford (1912: 424).

**Taxonomic position:** Insecta, Hemiptera, Sternorrhyncha, Psylloidea, Psyllidae, Diaphorininae.

**EPPO Code:** DIAACI.

**Phytosanitary Categorization:** EPPO A1 list: no. 37; EU Quarantine Pest (Annex II Part A<sup>2</sup>).

#### 3 | DETECTION

*Diaphorina citri* has three developmental stages: egg (Figure 1), immature (5 instars) (Figure 2), and adult (Figures 3 and 4). Plants for planting of citrus material (budwood, grafted trees, rootstock seedlings) can carry



**FIGURE 1** Eggs of *Diaphorina citri*. Courtesy: Michael Lewis, University of California – Riverside (US).

<sup>1</sup>Use of brand names of chemicals or equipment in this EPPO Standard implies no approval of them to the exclusion of others that may also be suitable.

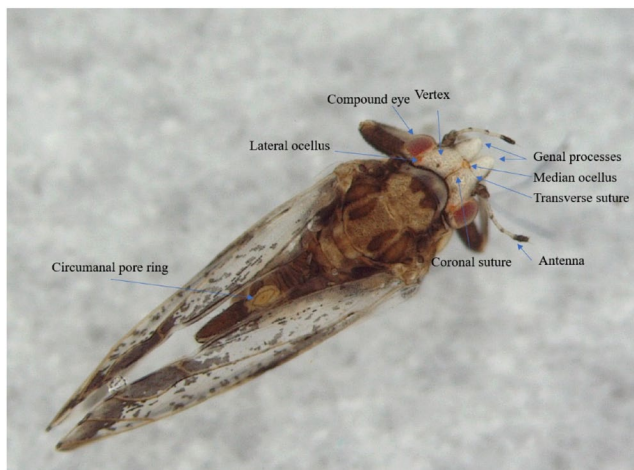
<sup>2</sup>Commission Implementing Regulation (EU) 2019/2072.



**FIGURE 2** Immatures of *Diaphorina citri*, from left to right: First, second, third, fourth and fifth instar. Courtesy: David G. Hall, USDA-ARS (US).

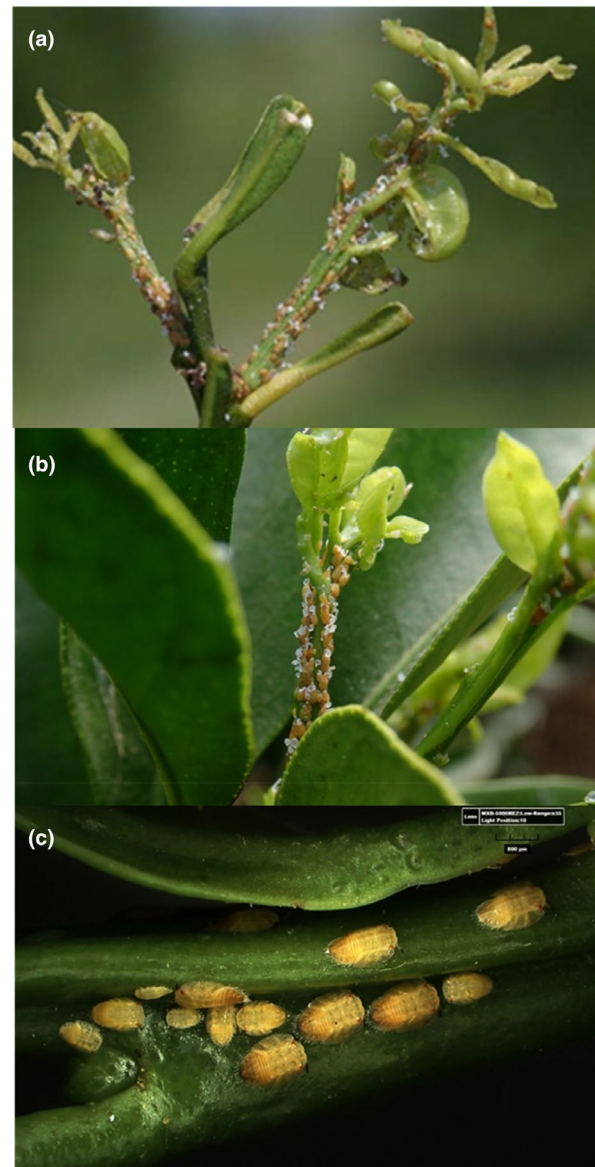


**FIGURE 3** *Diaphorina citri*, adult. Note that the wing maculation is typically dark brown. Courtesy: A Franck, CIRAD (FR).



**FIGURE 4** Female, *Diaphorina citri* dorsal view (X12.5). Courtesy: Eitan Recht, Plant Protection and Inspection Services (IL).

eggs and/or immatures over long distances. Trailers transporting oranges from groves to packing houses have also been recognized as a source of adult vector dispersal



**FIGURE 5** (a) Damage to shoots caused by adults and nymphs of *Diaphorina citri*. (b) *Diaphorina citri* immatures showing white thread-like waxy secretions on citrus flush. (c) *Diaphorina citri* immature stages feeding on citrus flush. Courtesy: (a) M Rogers, UFL (US) (b, c) E Recht, Plant Protection and Inspection Services (IL).

(Halbert et al., 2010). *D. citri* induces few direct specific symptoms, but attention should be paid to twisted and stunted growth of young shoots during inspection of plant material for the presence of *D. citri* (Figure 5). Sometimes, the leaves are badly curled and they may be covered with honeydew, sooty mould, and a thread-like white waxy substance secreted by the immatures (Figure 5).

The eggs are light yellow to orange-coloured and almond-shaped (Figure 1) with two red eye spots at maturity, 0.31 mm (long)–0.15 mm (wide). Eggs are laid on new flush singly or in clusters inside half-folded leaves of the buds, in leaf axils and other suitable places on the young tender parts of the tree. Immatures are light-yellow to dark-brown, bearing well-developed wing pads in the last four instars (Figure 2). Immatures will move away when disturbed but normally lead a sedentary existence clustered in groups and resemble soft scales in appearance. Adults are ~3 mm long with yellowish-brown body and greyish-brown legs. The wing membrane is transparent, mottled with brown spots and a dark brown band encircling the wing's perimeter, along with a clear area near the apex of the Rs vein (Figures 3 and 7). The central area of the wing is clear adorned with irregular spots. Adults show the resting or feeding position typical to *Diaphorina* spp., with the head leaning on the substrate and the body forming an angle of ca. 45° with the leaf surface (Figure 3). They can be very active and jump at the slightest disturbance.

## 4 | IDENTIFICATION

Morphological identification of Psylloidea requires specimens to be cleared and mounted on microscope slides (see Appendix 1). Only the adult and fifth instar immatures can be identified morphologically to species level, although some specimens of fifth instar immatures of *D. citri* and *Diaphorina communis* share the same morphology and especially the same number of marginal setae and are not morphologically distinguishable. However, Cytochrome Oxidase I (COI) DNA barcoding allows the differentiation of both species (Das et al., 2022).

## 4.1 | Morphological identification

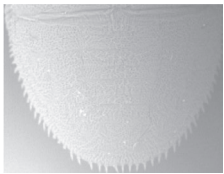
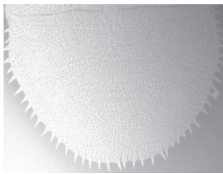

For adults, the wing shape and pattern can be used for the diagnosis of both males and females; however, the identification should be confirmed using the other characters listed below and in Appendix 2. Fifth instar immatures of *D. citri* can be confused with two other species of *Diaphorina* reported from citrus (see Section 4.1.3). However, these species have a limited distribution area (northern India, Nepal and Bhutan, and the Comoros respectively). The morphological identification of immatures intercepted on commodities originating from these regions should then be undertaken with caution in the absence of adults, using characters provided in Table 1 to differentiate them. For immatures of *D. citri* and *D. communis* with a similar number and arrangement of marginal setae, the comparison of their respective barcode COI regions is needed.

### 4.1.1 | Genus *Diaphorina*

The genus *Diaphorina* is characterized by the following combination of characters (Burckhardt, 1984):

- Head not inclined from longitudinal body axis.
- Head as broad as, or slightly broader than, pronotum.
- Vertex flat, rectangular, 1.5–2.5 times as broad as long.
- Genae forming well developed processes, separated from vertex by sutures.
- Clypeus flattened and broad, adpressed against the lower surface of the head, not visible from above.
- Antennae 0.6–1.0 times as long as head width; 10-segmented, with a single rhinarium on segments IV, VI, VIII and IX.
- Head and thorax dorsally hairy and with granular surface.
- Thorax flat dorsally; pronotum flat, medially bent forward; propleuron broad, nearly square; diagonal suture separating the smaller, triangular episternum from the larger, trapezoidal epimeron.

**TABLE 1** Arrangement of marginal setae on the abdomen in three *Diaphorina* species developing on Rutaceae.

<i>Diaphorina citri</i>	<i>Diaphorina communis</i>	<i>Diaphorina auberti</i>
Not contiguous, separated by less than their length in the posterior part; 50–62 in total	Not contiguous, separated by approximately their length in the posterior part; 44–50 in total	Contiguous
		
Courtesy: N. Om, National Plant Protection Centre (BT)	Courtesy: N. Om, National Plant Protection Centre (BT)	From Hollis (1987)

- Forewing ellipsoidal to pear-shaped; broadest in the distal half; often with pattern consisting of brown maculae; costal break present; fore-margin, distal to the apex of vein  $R_1$ , thicker than the other veins, sometimes forming a narrow pterostigma; cell  $m_{1+2}$  longer than height of  $cu_{1a}$ ; surface spinules irregularly spaced, varying in arrangement and size, usually larger in the middle of the cells than along the veins; wing membrane subhyaline; hindwing membranous, costal setae grouped; hindwing venation with  $M + Cu_1$  or  $R + M$  and the base of  $Cu_1$  sometimes very inconspicuous.
- Meracanthus of metacoxa large, horn-shaped; metatibia without basal spine and with a posteriorly open crown of 5–9 apical spurs; basal metatarsus with 2 black spurs.
- Male proctiger simple, hind-margin strongly bulged.
- Paramere in side view lamellar to clavate; basal part usually widened; inner surface with a strongly sclerotized, subapical tooth and covered with a large number of long setae.
- Aedeagus 3-segmented; basal segment in the proximal part U-shaped, in the distal part straight; inner margin in the middle of the straight part often widened, to form a hump or tooth; median segment straight, tapering apically; apical segment oval or ellipsoidal.
- Female terminalia in side view cuneate.
- Proctiger longer than subgenital plate; perianal ring consisting of two unequal rows of wax-pores.
- Ventral margin of subgenital plate straight, curved, angular or with a ventrally directed bulge. Ovipositor and valvula ventralis straight or more or less strongly curved.

At present, no key is available for the species of *Diaphorina* of the world. However, the species can be separated from the other citrus-feeding species based on the shape and the pattern of maculation in the forewings.

#### 4.1.2 | *Diaphorina citri*

The main diagnostic morphological characters of *Diaphorina citri* adults and fifth instar immatures are described below. A detailed description of all stages of *D. citri*, with confirmatory characters for adults and fifth instar immatures, is presented in [Appendix 2](#).

##### Adults:

##### Head (Figure 6a,b):

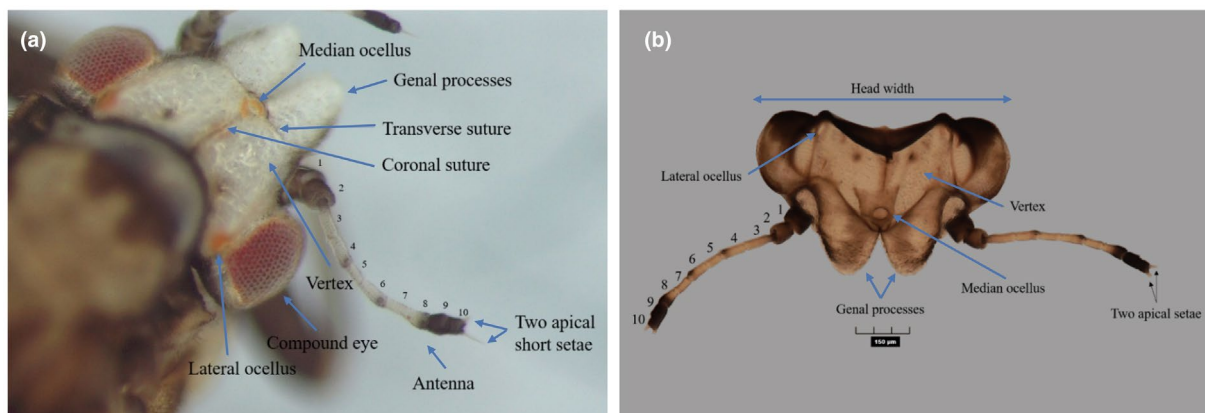
1. Genal processes as long or slightly longer than vertex, slender, subacute.
2. Antennae with two basal segments brown, 3rd to 8th segments yellowish with apices of 4th, 6th, 8th and last two segments black.

##### Forewings (Figure 7):

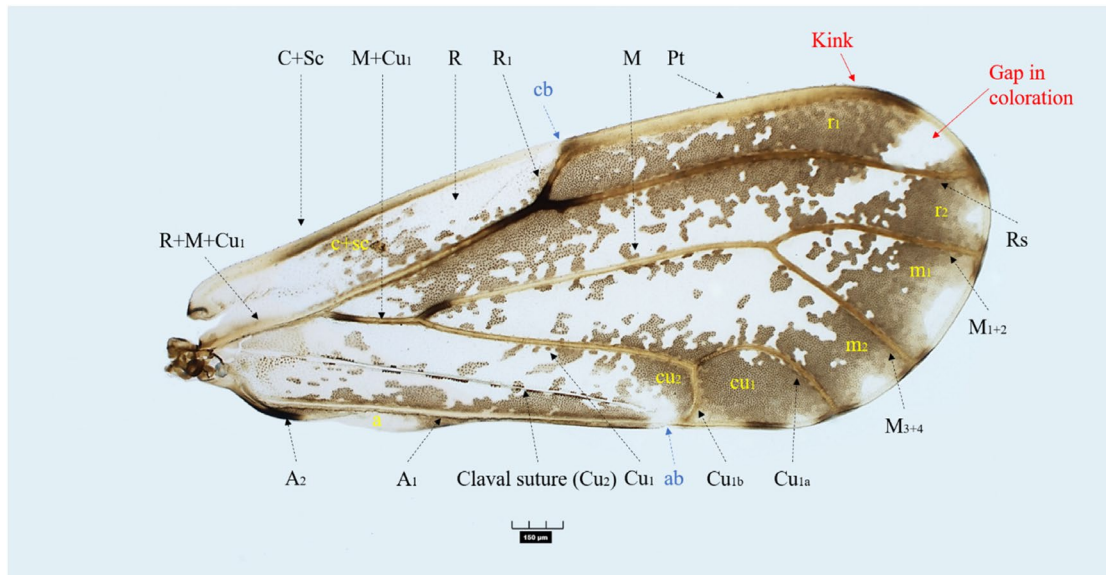
1. Elongate, widest in apical quarter.
2. Rounded apically, narrow at base and strongly widening towards apex, with an almost straight fore margin with subapical kink.
3. Cell  $m_1$  longer than  $cu_1$ .
4. Forewing pattern consisting of a band of confluent brown spots along vein  $R_s$  and another along outer and posterior margin, the two areas being well separated by a gap in the subapical region of cell  $r_1$  membrane whitish; distal margin with light patches.
5. Anal break (ab) in forewing adjacent to apex of vein  $Cu_{1b}$ .

##### Hind leg (Figure 8):

1. Metatibiae without genual spine.
2. Metatibiae apically with an incomplete crown of 6–8 small evenly-spaced black spurs (also called spines).
3. Two tarsal spurs on the basitarsus.



**FIGURE 6** *Diaphorina citri*, head, dorsal view (a) Specimen in ethanol. (b) Slide mounted specimen. Courtesy: Eitan Recht, Plant Protection and Inspection Services (IL).



**FIGURE 7** *Diaphorina citri* forewing venation and coloration. Courtesy: Eitan Recht, Plant Protection and Inspection Services (IL). Capital letters for veins and lowercase for cells: A, Anal vein; C, Costa; Cu, Cubitus; M, Medius; Pt, Pterostigma; R, radius; Rs, Radius sector; Sc, subcosta; ab, anal break; cb, costal break; Kink, area where anterior part of wing starts bending backwards.



**FIGURE 8** *Diaphorina citri*, hind leg showing (1) coxa with horn-shaped meracanthus, (2) an open crown of evenly-spaced black apical spurs, and (3) two tarsal spurs on the basitarsus (x63). Courtesy: Eitan Recht, Plant Protection and Inspection Services (IL).

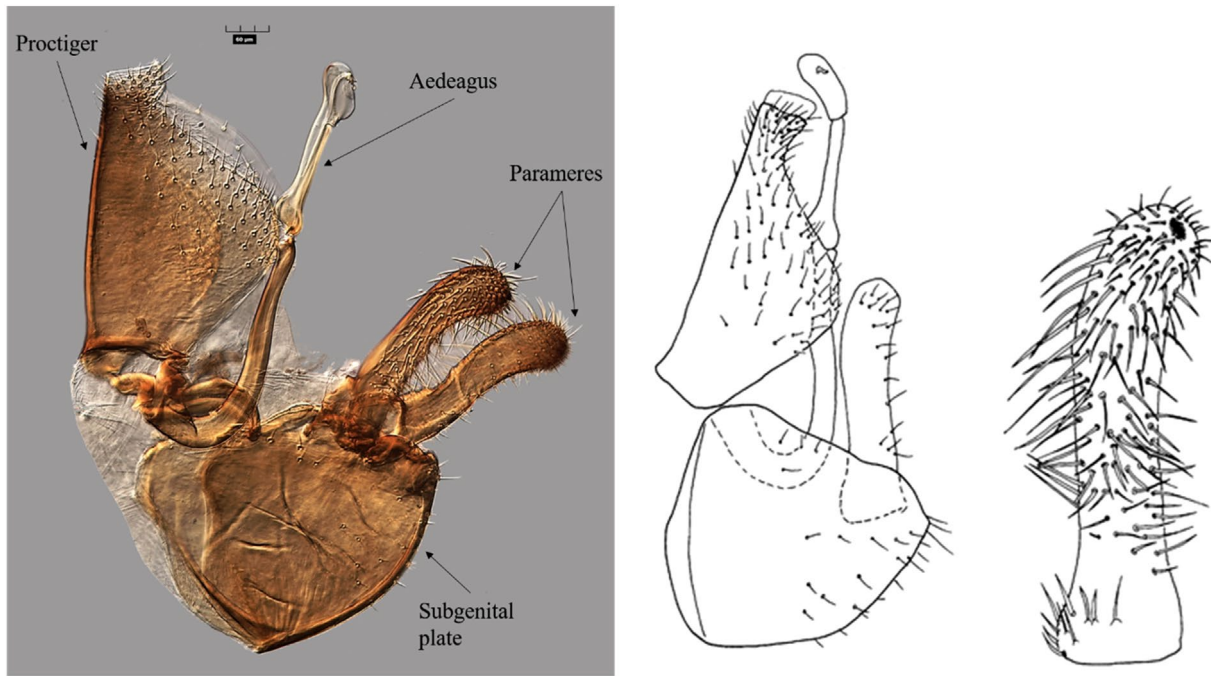
#### Male genitalia (Figure 9):

1. Male proctiger simple, bearing large wing-like posterior lobes.
2. Paramere lamellar, bent backward distally; inner surface with a strongly sclerotized, subapical tooth and covered with a large number of long setae.

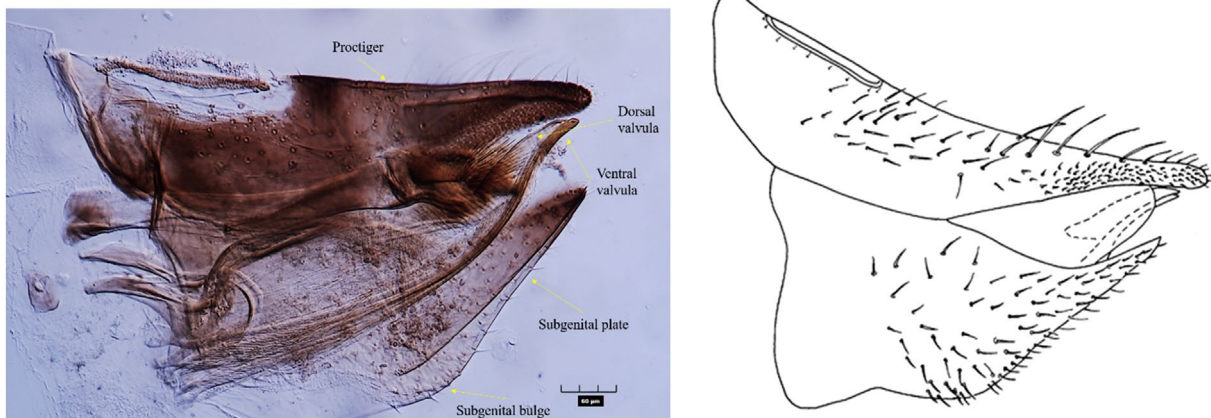
3. Inner margin in the middle of the straight part of the basal segment of aedeagus not widened to form a hump or tooth.

#### Female genitalia (Figure 10):

1. Proctiger longer than subgenital plate.



**FIGURE 9** *Diaphorina citri*, male genitalia. Courtesy: Left: Eitan Recht, Plant Protection and Inspection Services (IL), centre and right: D. Burckhardt, Naturhistorisches Museum Basel (CH).



**FIGURE 10** *Diaphorina citri*, female genitalia. Courtesy: Left: Eitan Recht, Plant Protection and Inspection Services (IL), right: D. Burckhardt, Naturhistorisches Museum Basel (CH).

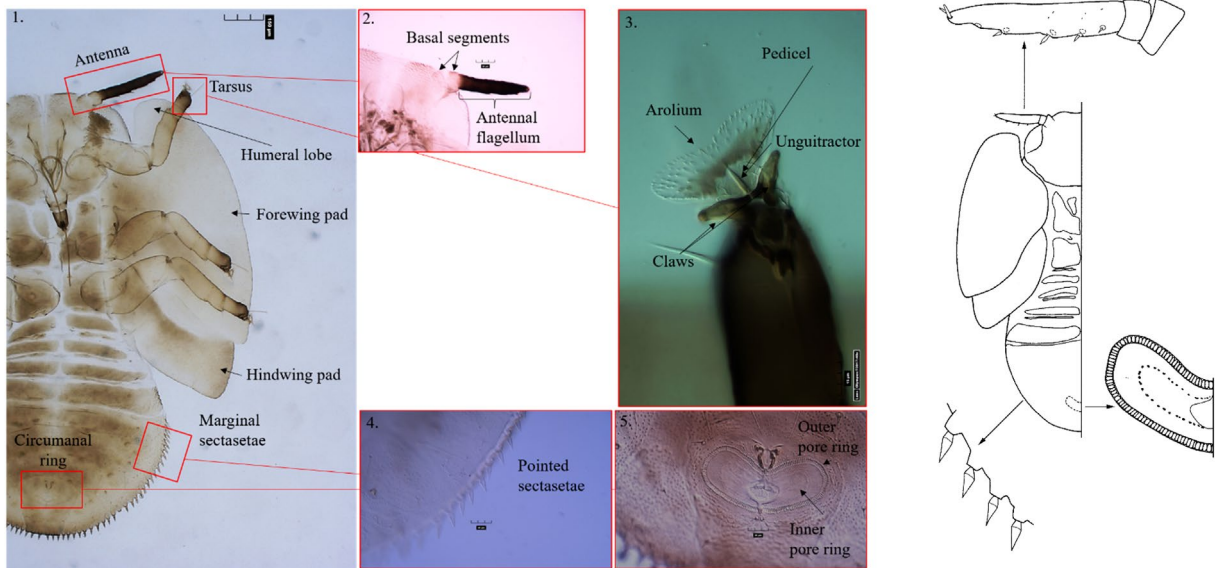
2. Ventral margin of subgenital plate with a ventrally-directed bulge.
3. Dorsal margin of dorsal valvula (also called valvula dorsalis) sinuous; ventral valvula (also called valvula ventralis) slightly curved.

**Fifth instar immatures**, found on young flush of *Citrus* and *Murraya* plants (Figure 11):

1. Forewing pads without macroscopic marginal setae.
2. Forewing pads with humeral lobe.
3. Tarsal arolium triangular with well-developed pedicel and unguitactor and two claws.
4. Antennae 3-segmented.
5. Antennal flagellum dark brown to black, strongly contrasting with the 2 basal segments.
6. Margin of caudal plate with 50–62 setastetae.

#### 4.1.3 | Possible confusion with other species

Two other species of *Diaphorina* have been reported from citrus and present a risk of confusion with *D. citri*: *Diaphorina auberti* Hollis, 1987 from the Comoros Islands (Figure 12) (forewing hyaline with brown infuscation following course of Rs and submarginally around distal and posterior margins without a definite break near the terminus of vein Rs; fore margin of

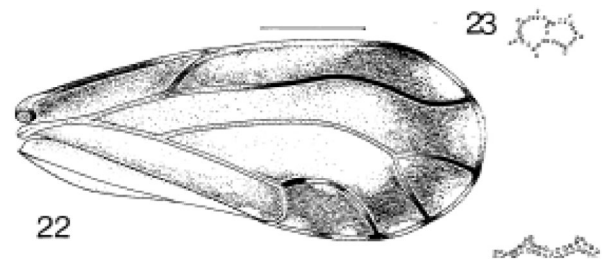


**FIGURE 11** *Diaphorina citri*, ventral side of fifth instar immature: (1) Habitus, right half. (2) Antenna showing the dark antennal flagellum, strongly contrasting with the 2 basal segments (3) Apex of tarsus with arolium, unguitactor, and claws. (4) pointed setae on margin of caudal plate. (5) Circumanal rings. Courtesy: Photos: Eitan Recht, Plant Protection and Inspection Services (IL); drawing: D. Burckhardt, Naturhistorisches Museum Basel (CH).

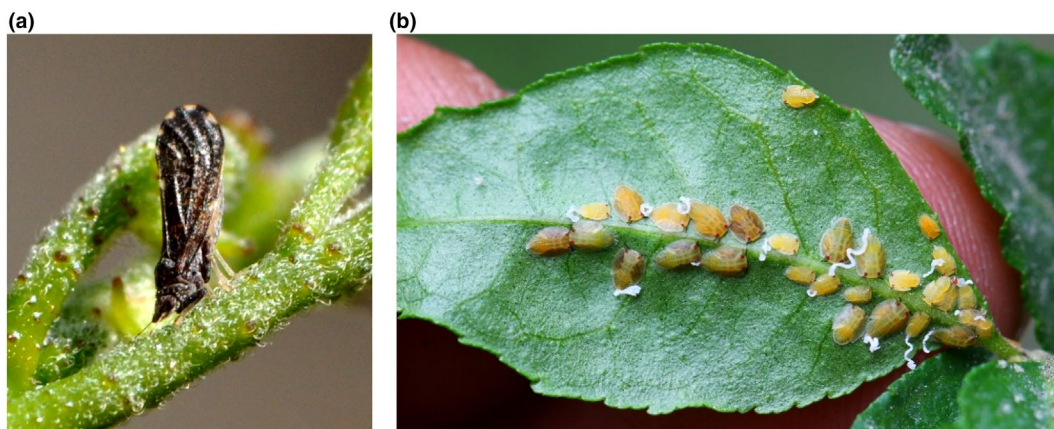


**FIGURE 12** *Diaphorina auberti* adult. Courtesy: P. Ryckewaert, CIRAD (FR).

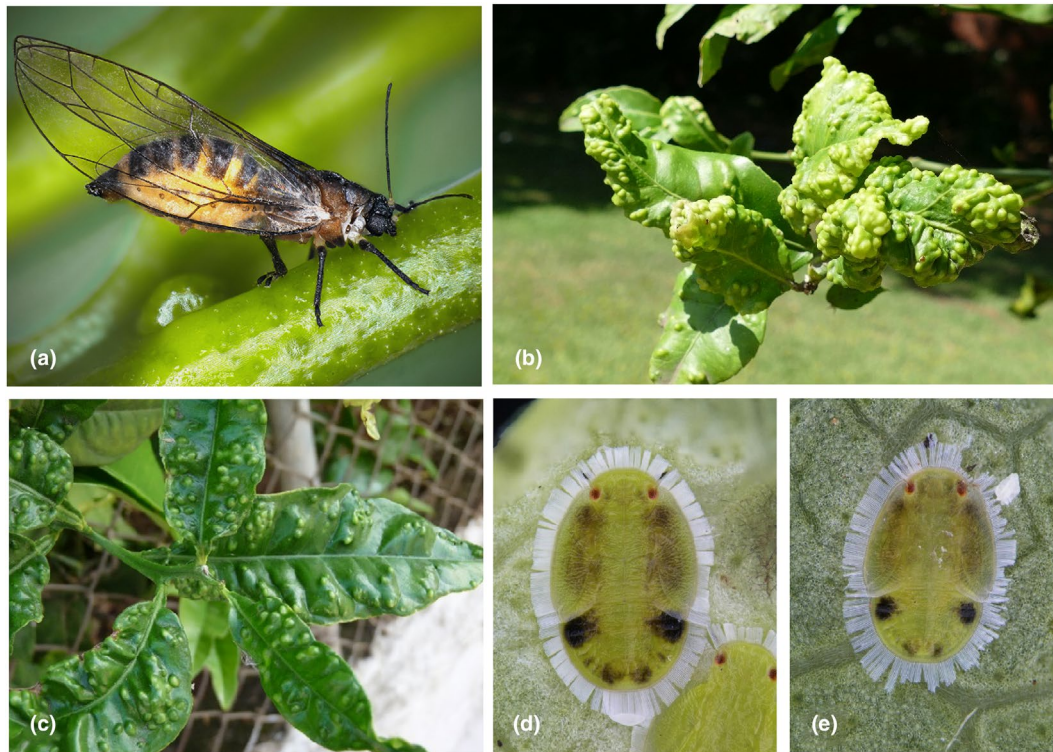
forewing more curved) (Figure 13), and *D. communis* Mathur, 1975 from India (the forewings of *D. communis* are almost totally dark, making it easily separable from *D. citri*) (Figure 14). Immatures of the 3 species can



**FIGURE 13** *Diaphorina auberti* forewing. From Hollis (1987).



**FIGURE 14** *Diaphorina communis*. (a) adult; (b) immatures on *Bergera koenigii* (Rutaceae). Courtesy: George A. C. Beattie, Western Sydney University (AU).



**FIGURE 15** *Trioza erytreae*. (a) Adult female. (b, c) Galls induced by *Trioza erytreae*. (d, e) Immatures. Courtesy: (a) A. Franck, CIRAD (FR). (b–e) C. Malumphy, Fera (GB).

be distinguished by the arrangement of their marginal sectasetae on the abdomen (Table 1). A third species, *D. murrayi* Kandasamy, 1986, has been reported from India on *Murraya paniculata*, but may be a synonym of *D. citri*.

*Diaphorina citri* can be distinguished from *Trioza erytreae* (Del Guercio) (Figure 15a), the African citrus psyllid or two-spotted citrus psyllid (EPPO, 2005), another vector of ‘*Candidatus Liberibacter spp.*’ causing huanglongbing, by the concave open galls their immatures induce in the leaf surface at the feeding point leading to convex protrusion on the upper side of the leaf (Figure 15b); in adults by the pointed shape of clear forewings with basal vein trifurcating (rounded at apex, a pattern, and with basal bifurcating into R and M+Cu<sub>1</sub> in *D. citri*), and with antennae nearly all black (only the last two segments are black in *D. citri*); and in immatures by a pair of basal dark abdominal spots in late stage (none in *D. citri*) (Figure 15d,e), small wing pads (broad in *D. citri*) and a fringe of white filaments (produced by truncate sectasetae) around the whole body, including the head (Figure 15c) (in *D. citri* filaments are seen only on the caudal plate margin where it is covered by pointed sectasetae – Figures 5 and 11).

## 4.2 | Molecular identification

Agarwal et al. (2023) have developed a LAMP test based on the mitochondrial 16S locus to detect *D. citri*. The test has been evaluated against a panel of 41 species belonging to 18 genera and 4 families, sampled mainly among the Australian fauna. There is no experience in the EPPO region on this test.

A protocol for DNA barcoding based on COI is described in Appendix 1 of PM 7/129(2) DNA barcoding as an identification tool for a number of regulated pests (EPPO, 2021) and can also support the identification of *D. citri*. A similar approach based on the barcode mtCOI region has been used in Das et al. (2022) for the identification of *D. citri*. Sequences are available in different databases such as [https://portal.boldsystems.org/result?query=%22Diaphorina%20citri%22\[tax\]](https://portal.boldsystems.org/result?query=%22Diaphorina%20citri%22[tax]). 8 sequences have been deposited in the EPPO-Q-bank database (<https://qbank.eppo.int/arthropods/taxon/DIAACI/specimens>).

In absence of validation data, none of these tests is recommended for the identification of *D. citri*, with the exception of using COI barcoding data to differentiate similar fifth instar immatures of *D. citri* from *D. communis*.

## 5 | REFERENCE MATERIAL

Reference material of *D. citri* is hosted by ANSES-LSV, 755 Avenue du Campus Agropolis, CS 30016, 34988 Montferrier-sur-Lez Cedex, France.

## 6 | PERFORMANCE CHARACTERISTICS

When performance characteristics are available, these are provided with the description of the test. Validation data are also available in the EPPO Database on Diagnostic Expertise (<http://dc.eppo.int>), and it is recommended to consult this database as additional information may be available there (e.g., more detailed information on analytical specificity, full validation reports, etc.).

## 7 | REPORTING AND DOCUMENTATION

Guidelines on reporting and documentation are given in EPPO Standard PM 7/77(3) *Documentation and reporting on a diagnosis*.

## 8 | FEEDBACK ON THIS DIAGNOSTIC STANDARD

If you have any feedback concerning this Diagnostic Standard, or any of the tests included, or if you can provide additional validation data for tests included in this protocol that you wish to share, please contact [diagnostics@epo.int](mailto:diagnostics@epo.int).

## 9 | STANDARD REVISION

A regular review process is in place to identify the need for revision of Diagnostic Standards. Standards identified as needing revision are marked as such on the EPPO website.

When *errata* and *corrigenda* are in press, this will also be marked on the website.

## 10 | FURTHER INFORMATION

Further information on this organism can be obtained from:

David Ouvrard, Anses-LSV, 755 Avenue du Campus Agropolis, CS 30016, 34988 Montferrier-sur-Lez Cedex, France; [david.ouvrard@anses.fr](mailto:david.ouvrard@anses.fr).

Eitan Recht, Plant Pest Diagnosis Department, Ministry of Agriculture and Rural Development, Israel; [eitanre@moag.gov.il](mailto:eitanre@moag.gov.il).

## ACKNOWLEDGEMENTS

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## APPENDIX 1 - Permanent microscope slide preparation of psylloidea

The following method for the slide preparation of psyllids is modified from Queiroz et al. (2017).

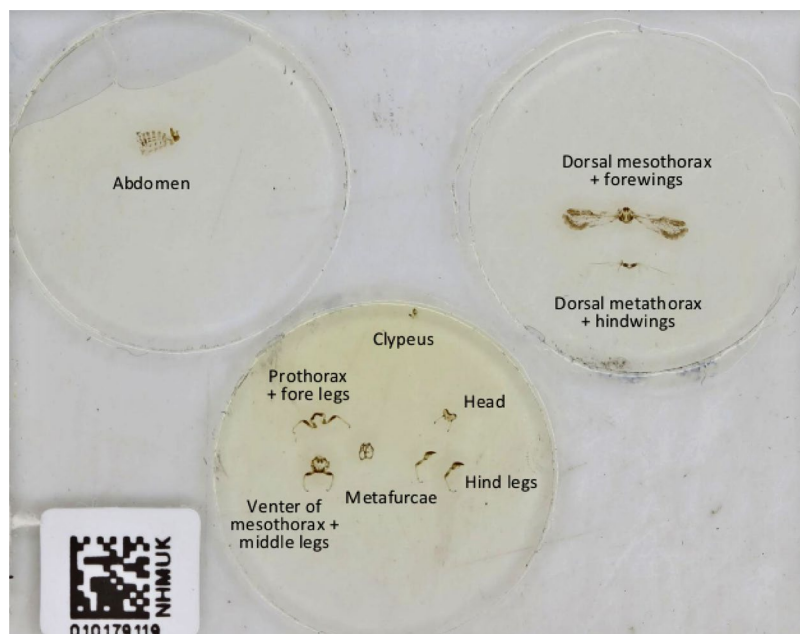
Place specimens into 10% potassium hydroxide (KOH) and heat at about 80°C, not exceeding 90°C, for approximately 5–10 min, or until the specimens become clear. Wash the specimens in distilled water for 30 min. Then transfer the specimens to 70% ethanol for 10 min, and then to 96% ethanol until the dissection is done. Dissect adult specimens carefully into the following separate parts: head, including antennae; clypeus with rostrum; prothorax with forelegs; dorsal mesothorax with forewings; dorsal metathorax with hindwings; venter of mesothorax with middle legs; venter of metathorax including hypertrophic internal furcae; hind legs; abdomen. Expose the aedeagus of the male specimens. Dissection of immatures is unnecessary. Place the specimens in a few drops of clove oil, and leave for at least 30 min while the specimens clear. Add one or two drops of dilute Canada balsam to the slide, and spread it. Using a fine brush, transfer a single dissected adult or several immatures to the glass slide. The constituent parts of the adult should be arranged in the same pattern, to aid quick scanning of the slide when comparing specimens. The abdomen should be mounted laterally. Some immatures should be mounted dorsal surface uppermost, others with the ventral surface uppermost. Arrange the different parts of the adult (Figure A1) or the immatures and leave for 5 min partially to dry, so that they are anchored in position. Add a second drop

of Canada balsam so that there is sufficient depth of mountant to prevent distortion of the specimen (particularly the adult head and genitalia). Apply coverslip. Label and place in a drying oven at 38°C for approximately 2 months for long-term storage.

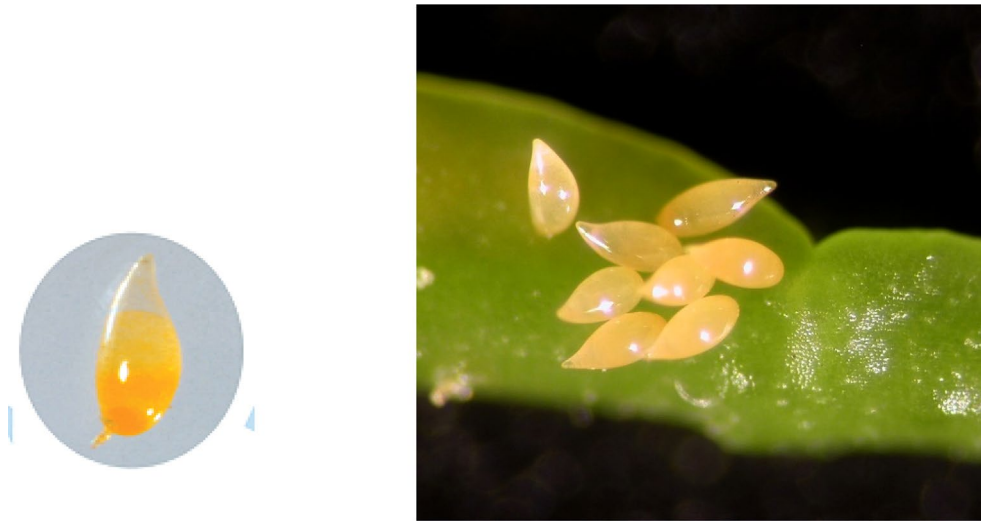
## APPENDIX 2 - Morphological description based on Yang (1984)

### Adult

General colour brown (Figure 4). Vertex and genal processes greyish white. Antennae with two basal segments brown, 3rd to 8th segments yellowish with apices of 4th, 6th, 8th and last two segments black. Eyes red to dark brown. Head (Figure 6a,b) slightly narrower than thorax. Pronotum ribbon-like, rounded and weakly sinuate anteriorly with two impressed fovea on each lateral side. Mesoscutum brown to dark brown with black markings. Femora dark brown, tibiae and tarsi yellowish white to brown. Forewings (Figure 7) hyaline with scattered maculation consisting of an irregular band along costal and anal margin in apical half of wing, with open window antero-apically, 2.4 times as long as wide, narrow at base, broadest near apex, rounded apically, without distinct pterostigma; fore margin of forewing mostly straight with subapical kink. Hind wings long and slender, 0.9 times as long as forewings, 3 times as long as wide. Abdomen black dorsally and greenish white ventrally. Male and female genitalia are shown in Figures 9 and 10, respectively. Length of body: male 1.53–1.66 mm; female 1.90–2.06 mm; width of head: 0.57 mm; length of antenna: 0.48 mm.



**FIGURE A1** Example of the spatial layout of the different dissected body parts of a psyllid. Slide photograph Courtesy: Natural History Museum (GB), <https://data.nhm.ac.uk/object/ef4d6c0b-d193-4a0b-8112-a0aae8a1a958>.



**FIGURE A2** Eggs of *Diaphorina citri*, left: From Garcia et al. (2016), right: Courtesy: David Hall, USDA Agricultural Research Service, (US).

### Egg

**Figure A2:** Elongate oval, wider at the base, light yellow when fresh, and turn bright orange (with two distinct red eye spots) at maturity; length approximately 0.31 mm, width 0.15 mm.

### First instar immature (Figure 2)

General colour yellow, body elongate; antennae 2-segmented, relative length of each segment about 1: 5, with 1 rhinarium; legs segmented, tibiotarsus with 2 claws; abdomen margin with 7 pairs of sectasetae. Length of body: 0.33–0.35 mm; length of antennae approximately 0.06 mm.

### Second instar immature (Figure 2)

General colour yellow; antennae 2-segmented, relative length of each segment about 1: 2.8, with 1 rhinarium; wing pads developed and separated; tibiotarsus with 1 golfclub shaped seta; abdomen with strip-like sclerites at base and a large apical plate with margin with 7–8 pairs of sectasetae. Length of body: 0.49–0.53 mm; length of antennae: approximately 0.08 mm.

### Third instar immature (Figure 2)

General colour yellow, antennae and abdomen somewhat dark; antennae 2-segmented, relative length of each segment about 1: 4.5, with 2 rhinaria on segment II; wing pads developed and overlapping; tibiotarsus

with 1 golfclub-shaped seta; apical plate of abdomen margin with 15 – 17 pairs of sectasetae. Length of body: 0.69–0.72 mm; length of antennae: approximately 0.14 mm.

### Fourth instar immature (Figure 2)

General colour from yellow to yellowish brown. Antennae 3-segmented, relative length of each segment about 1.5: 1: 6, with 3 rhinaria and two lanceolate setae. Apical plate of abdomen margin with 27–30 pairs sectasetae. Length of body: 0.98–1.05 mm; length of antenna: approximately 0.19 mm.

### Fifth instar immature (Figure 2)

Body broadly oval, about 1.2 times as long as wide. General colour yellow to yellowish brown, 3rd antennal segment black; antennae 3-segmented, relative length of each segment about 1: 1: 5.8, with 4 rhinaria and 3 lanceolate setae. All sclerites and wing pads vermiculated or punctuated. Legs relatively short, 4-segmented, tarsus with two claws, a triangular tarsal arolium with pedicel and unguitactor, and golf-club-shaped seta. Abdomen with strip-like sclerites at base and a large caudal plate, margin with 50–62 sectasetae. Anal opening ventral, set far away from apex of abdomen. Outer circumanal ring composed of single row of slit-like pores, enclosing inner ring of minute pores. Length of body: 1.45–1.58 mm; length of antenna: 0.27–0.30 mm.