



Department
for Environment
Food & Rural Affairs

Plant Pest Factsheet

Fig whitefly

Singhiella simplex



Figure 1. Fig whitefly adult female (left), with a dark yellow body and faint greyish T-shaped bands on each forewing, and mature fourth-larval instar or puparium (right), with conspicuous red eye spots, on *Ficus* © Fera

Background

Singhiella simplex (Singh) (Hemiptera: Aleyrodidae), is an Asian whitefly that feeds exclusively on figs (*Ficus* spp.) and is commonly known as the 'fig whitefly'. It has recently been introduced to North and South America, the Caribbean and the Mediterranean, and in each new region it has spread rapidly, almost certainly as a result of being moved in trade. It can cause complete defoliation and dieback of branches of ornamental figs. Large infestations have been intercepted in the UK on several occasions in 2019 on *Ficus benjamina* and *F. elastica* plants imported from Belgium and the Netherlands. Fig whitefly has the potential to become a pest of ornamental *Ficus* plants grown indoors in the UK.

Geographical Distribution

Fig whitefly is native to China, India and Myanmar and has been introduced to the Americas since about 2007 and the Mediterranean since about 2013. It appears to have spread throughout much of the Mediterranean in less than a decade and is commonly found on *Ficus benjamina* and *F. microcarpa*.



Figure 2. Fig whitefly eggs © Fera



Figure 3. Fig whitefly first instar © Fera

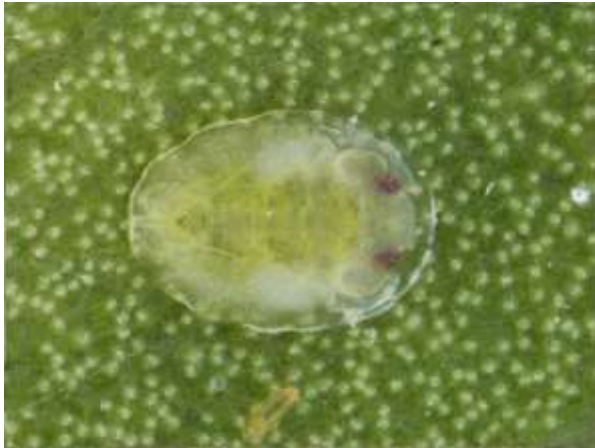


Figure 4. Fig whitefly fourth instar or puparium © Fera



Figure 5. Fig whitefly empty pupal case © Fera



Figure 6. Fig whitefly adult © Fera



Figure 7. Fig whitefly infestation on the upper leaf surface of a variegated *Ficus benjamina* © Fera



Figure 8. *Ficus* hedge in Florida defoliated by *Singhiella simplex* © 2011 JP Miller & Sons Services



Figure 9. Fig whitefly on *Ficus binnendijkii* with sooty mould growing on egested honeydew © Fera

Host Plants

Fig whitefly feeds on a wide range of *Ficus* species (Moraceae), including *F. aurea* (strangler fig), *F. altissima* (council tree), *F. bengalensis* (Indian banyan), *F. benjamina* (weeping fig), *F. binnendijkii* (long leaf or sabre fig), *F. lyrata* (fiddle-leaf fig), *F. microcarpa* (Cuban laurel), *F. maclellandii* (banana-leaf fig) and *F. racemosa*. It exhibits a preference for *F. benjamina*, which is commonly grown indoors in the UK. It has also been recorded on *Rhododendron indica* (Ericaceae) but this needs confirmation.

Description

All life stages are best seen with a x10 hand lens. The adult whiteflies (1.4-1.6 mm) are a deep yellow with conspicuous red eyes (Figs 1 and 6). Their wings are cream coloured with faint grey T-shaped bands on each forewing. The adults are very active and readily fly when disturbed. The eggs are 'kidney' shaped in lateral view, yellow to light brown, and attached to both surfaces of the leaves by a thin stalk (Fig. 2). The eggs are laid in dense groups, mostly adjacent to the mid vein and near the base of the leaf. The first, second and third larval instars are almost translucent and difficult to spot (Fig. 3). The fourth instar or puparium (1.3 mm long and 1.0 mm wide) are oval, translucent to pale yellow, with the adult red eye spots becoming conspicuous with maturity (Figs 1 and 4). One unusual feature is that the eggs and larval stages occur on both the lower and upper surfaces of the foliage (Figs 7) (the larval stages of most whitefly species only occur on the lower surface).

Several other whitefly species may also be found on *Ficus* in the Mediterranean region, including the regulated tobacco whitefly *Bemisia tabaci*. Fig whitefly may be distinguished from the others by characteristic grey bands on the forewings of the adults and by the puparia, which are commonly found on the upper leaf surface (Fig. 7).

Biology

All whiteflies have six developmental stages: egg; four larval stages; and the adult. The total duration of the immature stages varies from 97.1 days at 15°C to 25.2 days at 30°C, while the adults live 8 days at 15°C, 4.2 days at 25°C, and 2.5 days at 30°C. The whitefly will breed continuously if climatic conditions are favourable.

Dispersal and Detection

Adult whiteflies are winged and capable of flight, but they are generally poor fliers and natural dispersal is limited. The eggs and larvae, while incapable of flight, may be carried over long distances in plant trade.

Large infestations of fig whitefly are likely to be easy to detect since severely infested *Ficus* plants shed many of their leaves and appear defoliated (Fig. 8). They also exhibit significant chlorosis (yellowing of the leaves) and the leaves may be spotted with black sooty mould growing on the honeydew (Fig. 9). There may also be small clouds of tiny white, gnat-like adult whiteflies flying from the foliage which are easily observed when branches of infested plants are shaken.

Economic Impact

Fig whitefly is a damaging pest of *Ficus* in the USA (Florida), India, Brazil, Cyprus and Israel. Feeding by the whitefly may cause yellowing of leaves, defoliation and branch

dieback, and high populations are able to stunt the growth of young trees. The impact in the Mediterranean is potentially large due to the abundance of *Ficus* as ornamental plants. However, despite large populations being observed in the western Mediterranean, they have not yet been associated with damage. It is also important to note that there are no published records of the whitefly attacking the edible fig *Ficus carica*.

Fig whitefly is not known to be a vector of any plant diseases.

Advisory Information

Fig whitefly is an invasive species in the Americas and parts of the Mediterranean and has the potential to be a pest of indoor ornamental *Ficus* plants in the UK. The main pathway of entry is the import of infested *Ficus* plants from areas where the whitefly is established, such as southern Europe. Low density populations can be difficult to detect. The whitefly is unlikely to be able to overwinter outdoors in the UK but could establish on indoor plantings of ornamental *Ficus* plants.

Importers should source material carefully, and both commercial growers should monitor for the presence of fig whitefly using yellow sticky traps.

Although not a notifiable pest, this whitefly can be confused with *Bemisia tabaci*, which is a notifiable pest. In case of any doubt please inform the relevant authorities:

For **England and Wales**, contact your local **APHA Plant Health and Seeds Inspector** or the **PHSI Headquarters**, Sand Hutton, York. Tel: 01904 405138

Email: planthealth.info@apha.gov.uk

For **Scotland**, contact the **Scottish Government's Horticulture and Marketing Unit**:

Email: hort.marketing@gov.scot

For **Northern Ireland**, contact the **DAERA Plant Health Inspection Branch**:

Tel: 0300 200 7847 Email: planthealth@daera-ni.gov.uk

For additional information on UK Plant Health please see:

<https://secure.fera.defra.gov.uk/phiw/riskRegister/>

<https://www.gov.uk/plant-health-controls>

<http://www.gov.scot/Topics/farmingrural/Agriculture/plant/PlantHealth/PlantDiseases>

<https://www.daera-ni.gov.uk>

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