Tobacco Whitefly, *Bemisia tabaci*

**Overview**

*Short description of Bemisia tabaci, Tobacco Whitefly*

Tobacco Whitely adults are only about 1mm in length. The adult body is tinged yellow, with pale wings, legs and antennae. Tobacco Whitely is a highly polyphagous sap-sucking plant pest that has the potential to seriously affect glasshouse crops in GB, particularly salad crops such as tomato and cucumber.

**Description of Bemisia tabaci, Tobacco Whitefly status in GB**

Tobacco Whitely is officially absent from GB, which is a Protected Zone (PZ), under the EC Plant Health Directive, for this species. Outbreaks do however, occur on a regular basis in ornamental production nurseries, but are all eradicated.

**Habitat summary: Bemisia tabaci, Tobacco Whitefly**

Tobacco Whitely only occurs on indoor crops in glasshouses in GB and other northern European countries. Worldwide, it has also infested many field crops and ornamental plants.

**Overview table**

<table>
<thead>
<tr>
<th>Environment:</th>
<th>Terrestrial</th>
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<tbody>
<tr>
<td>Species status:</td>
<td>Unknown</td>
</tr>
<tr>
<td>Native range:</td>
<td>Europe, Asia-Temperate, Indian Subcontinent</td>
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<td>Functional type:</td>
<td>Herbivore</td>
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<tr>
<td>Status in England:</td>
<td>Unknown</td>
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<td>Status in Scotland:</td>
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<td>Status in Wales:</td>
<td>Unknown</td>
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<tr>
<td>Date of first record:</td>
<td>1987</td>
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</tbody>
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**Invasion history: Bemisia tabaci, Tobacco Whitefly**

**Origin**

Tobacco Whitely possibly originated in India. In GB it has been reported arriving from other parts of Europe, Asia (e.g. Thailand and Singapore), the Americas and Africa. It was first described as a tobacco pest in Greece in 1889 and is widespread throughout most of Europe. The B biotype of Tobacco Whitely originated in the Old World and was introduced to Florida in 1986. It has since spread throughout tropical and subtropical regions of the Americas.

**First Record**

The first Tobacco Whitely outbreak in GB was in 1987, on poinsettia cuttings (poinsettias have continued to be the main source of interceptions and outbreaks of Tobacco Whitely).

**Pathway and Method**

Transported with imported plants.

**Species Status**

Recorded in all continents except Antarctica. An invasive pest in most regions, but particularly in tropical and subtropical regions.
Ecology & Habitat: Bemisia tabaci, Tobacco Whitefly

Dispersal Mechanisms
Dispersal is primarily by transport of B. tabaci eggs, nymphs and adults with plants (intercontinentally). Long distance dispersal by flight is probably limited, although B. tabaci adults can fly for periods of up to 2 hours and winds may carry them long distances.

Reproduction
Highly reproductive, with up to 15 generations produced per year. Each female produces 80 to 300+ eggs in her lifetime. There are four immature stages, but only the first is mobile. Egg to adult duration is 15-70 days, depending on temperature. Also reproduces asexually by parthenogenesis (with females producing only male progeny).

Known Predators/Herbivores
Tobacco Whitefly is predated by beetles (Coccinellidae), lacewings (Chrysopidae, Hemerobiidae, Coniopterygidae), true bugs (Anthocoridae, Miridae), flies (Dolichopodidae, Syrphidae, Anthomyiidae), ants (Formicidae), spiders (Araneida) and mites (Acarina: Phytoseiidae, Stigmaeidae). In addition, Tobacco Whitefly has several known chalcid wasp parasitoids (Encarsia spp., Eretmocerus spp.).

Resistant Stages
None known.

Habitat Occupied in GB
Tobacco Whitefly is officially absent from GB, although outbreaks do occur on a regular basis in ornamental production nurseries, but are all eradicated. Present outdoors in fields in southern Europe and in glasshouses in northern Europe.

Distribution: Bemisia tabaci, Tobacco Whitefly
Cosmopolitan with a worldwide distribution spanning 6 continents and a wide range of habitats. Absent from GB.

Impacts: Bemisia tabaci, Tobacco Whitefly

Environmental Impact
Unknown, but may act as a food source for a diverse range of arthropod predators.

Health and Social Impact
None known.

Economic Impact
Worldwide, Tobacco Whitefly has infested over 500 plant species from at least 74 families. Taxonomy of Tobacco Whitefly is unclear and it may be a cryptic species complex, or at least has more than 24 genetically distinct biotypes. The polyphagous B biotype (also described as a separate species - B. argentifolii) has received most attention. Biotypes B and Q present the highest risk to certain protected crops in GB. Heavy Tobacco Whitefly infestations can cause direct damage by loss of plant vigour and growth, chlorosis, uneven ripening and physiological disorders. Indirect damage is also caused by honeydew (produced by Tobacco Whitefly nymphs) and the resultant sooty moulds on fruits and leaves. Moulds reduce photosynthesis and reduce the market value of plants or fruits. Nymphs of Tobacco Whitefly B biotype induce phytotoxicity reactions in infested plants. Tobacco Whitefly vectors at least 100 virus species, with geminiviruses of the genus Begomovirus being the most economically significant (causing 20-100% crop yield loss).

References & Links: Bemisia tabaci, Tobacco Whitefly

Identification


**Biology, ecology, spread, vectors**


**Management and impact**


**General**

A useful source for GB is available from fera at

https://www.cabi.org/isc/datasheet/8927