

DAFM Plant Pest Factsheet

Tuta absoluta Tomato leaf miner moth



Fig 1: *Tuta absoluta* adult, dorsal view

Pest Characteristics

- **Pest:** *Tuta absoluta*
- **Common name(s):** Tomato leaf miner moth
- **Hosts:** *Solanum lycopersicum* (tomato)
- **Invasive Risk:** *Tuta absoluta* poses a potential risk to Ireland's tomato production sector, impacts have been seen in countries with similar tomato glasshouse cultivation practices. The moth development requirements and population growth (14–35°C) fit those of optimal tomato cultivation.
- **Entry Pathways:** Numerous interceptions on tomato fruit imports; Other pathways include Packing material; Plants for planting; Natural spread from Europe.
- **Adaptability:** Despite being considered a tropical species unlikely to invade temperate climate regions, *T. absoluta* has rapidly spread throughout Europe. The moth has also should shown an ability to overwinter between two successive tomato crops in commercial glasshouses in Northern Europe. There is demonstrated by the continued establishment and management of the pest in UK glasshouses.
- **Impact:** *Tuta absoluta* attacks all the aboveground plant parts of the tomato plant. Infestation during the early plant stages can cause up to 100% losses when no management methods are efficiently implemented. Fruit that is attacked results in quality, marketability and economic losses.
- **Visual symptoms:** On the leaves, mines are papery, blotchy (Fig 2a,b). Fruit damage symptoms consist of pin-sized entry and exit holes (Fig 2c,d)

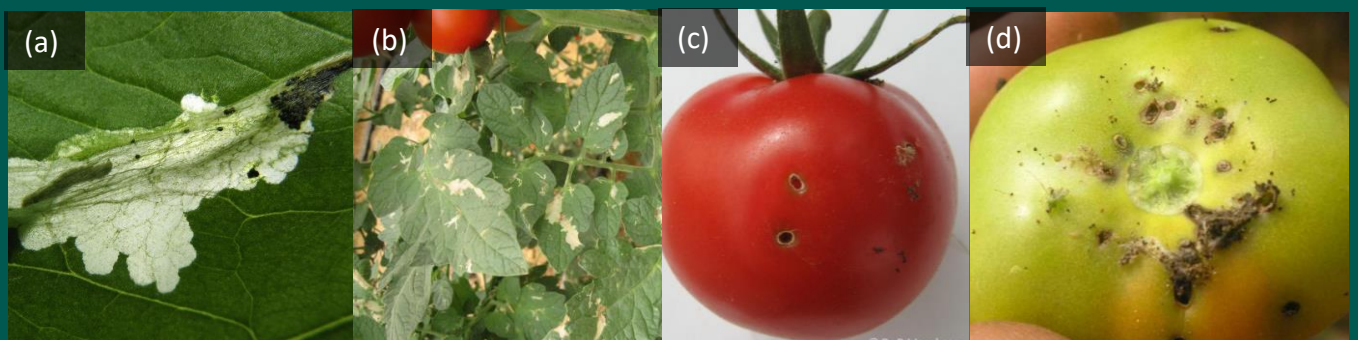


Fig 2: Visual symptoms of *Tuta absoluta* infestations on tomato crops: (a) mines with dark-coloured frass (b) widespread crop mine damage symptoms (c) & (d) fruit damage



An Roinn Talmhaíochta,
Bia agus Mara
Department of Agriculture,
Food and the Marine

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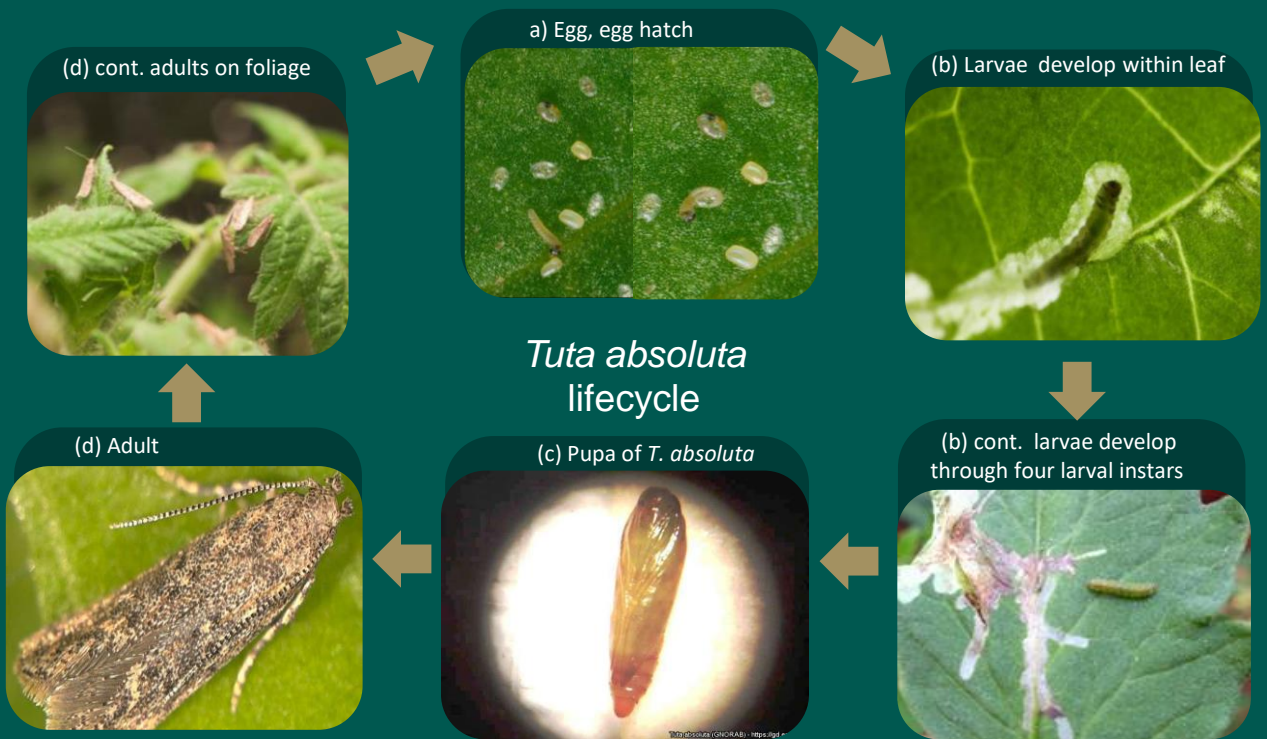


Fig 3: *Tuta absoluta* lifecycle has four main stages of development: (a) egg (b) larva (c) pupa and (d) adult.

- **Lifecycle:** Females of *T. absoluta* lay an average of 260 eggs during their lifetime. Under suitable conditions (time, temperature, humidity) the larvae pass through four instars. The larvae mine the mesophyll of the leaf leaving the epidermis intact (Fig 3b). At high densities, they also can penetrate tomato fruits where they feed and grow, leaving behind mines and galleries. Adults that emerge from their pupae are 6 - 7 mm in length, have filiform antennae and black spots on anterior wings (Fig 3d).
- **Distribution:** Native to South America, *T. absoluta* was first reported in Spain in 2006, it subsequently invaded a considerable number of other countries in Europe, Africa, Middle East and Asia (Fig 4). One single record of an adult *T. absoluta* exists for Waterford, Ireland from 2011.
- **If suspected:** If you find a suspected specimen please submit images to DAFM at: plantpestreport@agriculture.gov.ie

Photo credits: Fig 1 © James Hayden, Microlepidoptera on Solanaceae, USDA APHIS PPQ, Bugwood.org; Fig 3(a),(b),(d)cont. © [Cuthbertson et al., \(2013\)](#); Fig 3(b) cont. © Metin Gülelci, Leaf Tobacco, Bugwood.org; Fig 2 (a),(c) © Rob Jacobson, AHDB Tomato crop damage caused by *Tuta absoluta*. Fig 2(b),(d), Fig 3(c),(d), Fig 4 images are from EPPO and can be freely used if used for educational purposes: <https://gd.eppo.int/taxon/GNORAB/photos>

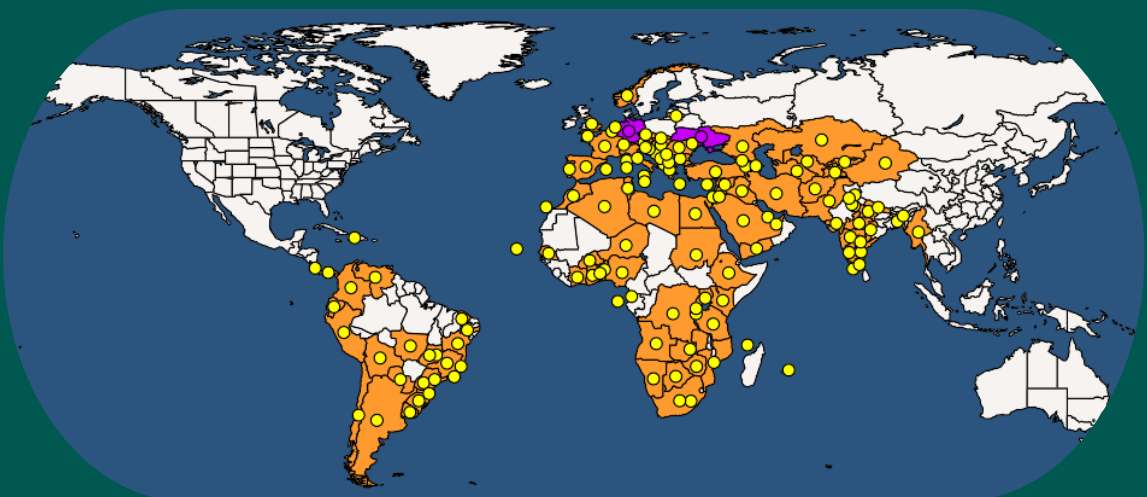


Fig 4: Known global distribution of *T. absoluta* as reported on the EPPO Global Database Feb 2022



An Roinn Talmhaíochta,
Bia agus Mara
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