

A new pest recorded in Italy: The South African citrus thrips, *Scirtothrips aurantii* (Thysanoptera: Thripidae)

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Abstract

The South African citrus thrips, *Scirtothrips aurantii* Faure, 1929, has been recorded in Italy for the first time. This species was recently reported in Spain and Portugal. Its presence has been confirmed in the major citrus-growing area of Catania province (Sicily), infesting citrus trees. *S. aurantii* is currently included in the EPPO A1 List of pests recommended for regulation as a quarantine pest. This species is polyphagous and considered to be highly damaging, especially to crops of *Citrus* spp., mango (*Mangifera indica*) and avocado (*Persea americana*). This paper also provides notes on morphology, biology and management of the pest. Given the significant economic importance of citrus and exotic fruits growing in Sicily, the discovery of this new pest needs prompt monitoring and control measures to limit its spread.

KEYWORDS

Citrus, impact, Italy, new recovery, *Scirtothrips aurantii*

Une nouveau ravageur signalé en Italie: le thrips sud-africain des agrumes, *Scirtothrips aurantii* (Thysanoptera, Thripidae)

Le thrips sud-africain des agrumes *Scirtothrips aurantii* Faure, 1929, est signalé pour la première fois sur le territoire italien. Cette espèce a récemment été signalée en Espagne et au Portugal. Sa présence a été confirmée dans la principale région citricole de la province de Catane (Sicile), où elle infeste les agrumes. *Scirtothrips aurantii* figure actuellement sur la Liste A1 de l'OEPP des organismes nuisibles recommandés pour réglementation en tant qu'organismes de quarantaine. Cette espèce est polyphage et considérée comme très nuisible, en particulier pour les cultures d'agrumes (*Citrus* spp.), de mangues (*Mangifera indica*) et d'avocats (*Persea americana*). Cet article fournit également des informations sur la morphologie, la biologie et la lutte contre cet organisme nuisible. Compte tenu de l'importance économique significative des agrumes et des fruits exotiques cultivés en Sicile, la découverte de ce nouvel organisme nuisible nécessite la mise en place rapide de mesures de surveillance et de lutte afin de limiter sa dissémination.

Новый вредный организм, обнаруженный в Италии: южноафриканский цитрусовый трипс *Scirtothrips aurantii* (Thysanoptera: Thripidae)

Южноафриканский цитрусовый трипс *Scirtothrips aurantii* Faure, 1929, впервые обнаружен в Италии. Недавно этот вид был отмечен в Испании и Португалии.

Его присутствие подтверждено в основном районе выращивания цитрусовых в провинции Катания (Сицилия), где он поражает цитрусовые деревья. *Scirtothrips aurantii* в настоящее время включён в Перечень A1, рекомендованных ЕОКЗР для регулирования в качестве карантинных. Данный вид является полифагом и считается высоко вредоносным, особенно для *Citrus* spp., *Mangifera indica* и *Persea americana*. В сообщении также приводятся сведения о морфологии, биологии и мерах борьбы с данным вредным организмом. Учитывая значительную экономическую важность цитрусовых и экзотических плодовых культур в Сицилии, выявление этого нового вредного организма требует оперативного мониторинга и принятия мер контроля для ограничения его распространения.

1 | INTRODUCTION

For years, the invasion of new alien species has posed a threat to European agriculture, as many of them directly damage crops across the continent, and there is no evidence of a decline in this trend (Seebens et al., 2017). Citrus trees have been successfully exported from South-East Asia to tropical and subtropical regions worldwide, where they have shown a remarkable capacity to adapt to a variety of environmental conditions. This global expansion has unfortunately facilitated the spread of pests, a process accelerated by modern trade and travel. Although the citrus orchard is considered a resilient agro-ecosystem, this crop is continuously threatened by the introduction of exotic pests (Urbaneja et al., 2020, 2023; Zappalà, 2010). Italy is Europe's second-largest citrus producer, with an area of approximately 146 600 ha and a total production of 3 million tonnes (FAOSTAT, 2025) and Sicily accounts for 64% of the national citrus-growing area and 50% of total Italian production (ISMEA, 2025). In Italy, over the last 30 years, there has been a progressive increase in the number of exotic arthropod species affecting citrus, often with serious consequences for cultivation and production (Bella, 2024). There are many examples of accidental introductions of exotic pests in Italy on citrus, including *Dialeurodes citri* (Ashmead), *Aleurothrixus floccosus* Maskell, *Aleurocanthus spiniferus* (Quaintance), *Phyllocnistis citrella*, *Pezothrips kellyanus* (Bagnall) and *Eutetranychus orientalis* (Benfatto, 1995; Conti et al., 2002; Martin & Rapisarda, 2000; Marullo, 1998; Mifsud et al., 2023; Porcelli, 2008; Tropea Garzia et al., 2025).

In early November 2025, during field surveys on citrus orchards, unusual symptoms were noticed on the leaves and shoots of plants, which could apparently be attributed to *P. citrella* infestations or inappropriate herbicide treatments. A more thorough examination of the infested plants revealed the presence of some thrips. After collecting the specimens in the field, morphological and molecular analyses in the laboratory identified the thrips as *S. aurantii* Faure 1929 (Thysanoptera: Thripidae), also known as the South African citrus thrips, a species included in the EPPO A1 List of pests

recommended for regulation as a quarantine pest, signifying its quarantine importance.

Scirtothrips aurantii is a species native to South Africa, where it was first described and where it was recognized as a pest of economic importance for citrus after outbreaks in the 1920s (Gilbert & Bedford, 1998). Beyond its native range in Africa, it has been reported in other countries. In Asia, its presence remains restricted to Yemen, while in Oceania, it has established populations in the Australian states of New South Wales and Queensland (EPPO, 2025). In Europe, until now, the thrips has been reported in Spain, first in the Andalusia region (EPPO, 2021, 2022) and more recently in Alicante, Valencia and Cataluña provinces (EPPO, 2024a, 2024b), and also in Portugal in the Algarve, Alentejo regions and Madeira Island (EPPO, 2023, 2024a, 2024b).

Although it is known as a pest of citrus, especially on sweet orange (*Citrus sinensis*), *S. aurantii* is notably a polyphagous species. It has been detected on 45 plant species distributed across 21 families, including woody and herbaceous species (EFSA, 2018; EPPO, 2025). However, most of the plant species affected are found within the Rutaceae and Fabaceae families. Host plants include *Arachis hypogaea*, *Asparagus* sp., *Fragaria × ananassa* and *Ricinus communis*. Among cultivated trees and shrubs, *S. aurantii* has been recovered on *Diospyros kaki*, *Ficus carica*, *Malus domestica*, *Mangifera indica*, *Persea americana*, *Prunus persica*, *Punica granatum*, *Rubus idaeus*, *Vaccinium myrtillus* and *Vitis vinifera* (EPPO, 2005, 2021). Despite its wide host range, *S. aurantii* causes the most significant economic damage to *Citrus* spp.

The life cycle and feeding behaviour of *S. aurantii* are similar to those of other citrus thrips species (MacLeod & Collins, 2006). In South African climatic conditions, the developmental time ranges from 18 to 44 days. It does not undergo diapause and can have up to nine generations per year (Gilbert & Bedford, 1998). As oviposition starts on the young vegetative flush and tender leaves of the season, Gilbert & Samways (2018) suggested that early citrus infestations arise primarily from overwintering females. Adults infest developing fruitlets and remain in proximity to the protective sepals (Gilbert & Bedford, 1998). Unlike other thrips infesting citrus (e.g.

P. kellyanus) fruitlets are susceptible to thrips attack for up to 13 weeks after the petal fall (Grout & Moore, 2015).

2 | MATERIALS AND METHODS

During regular periodic field surveys in citrus growing areas in Catania province, damage to leaves and shoots caused by thrips was observed. Thrips specimens (adults and nymphs) were collected on orange plants (*Citrus × sinensis*) in Francofonte, Lentini (Syracuse), and Scordia (Catania) municipalities while carrying out monitoring activities in early November 2025. Moreover, field monitoring was conducted in the same area from October until the end of December 2025, along with some interviews with citrus growers to gather information on the appearance of infestation symptoms. Infested leaves and shoots were collected and observed in the laboratory.

Identification was carried out using both morphological and molecular methods.

The morphological identification was carried out on adults (three males and three females) prepared and mounted on slides following the method described by Marullo (2003), Hoddle & Mound (2003) and Mound et al. (2019). Observations were made using an optical compound microscope (Zeiss Axiolab 5®), equipped with a telecamera Zeiss Axiocam 208®.

Molecular analysis was conducted on six adult thrips specimens. Total genomic DNA was extracted from each specimen using the EZNA® tissue DNA kit (Omega Bio-Tek, Georgia) according to the manufacturer's protocol. PCR amplification reaction of 10 µL was performed using the primer pair LCO1490 and HCO2198 to amplify a 700 bp fragment of the mitochondrial DNA gene cytochrome c oxidase I (Folmer et al., 1994), a region commonly used in barcoding to identify insects (Hebert et al., 2003). The amplification reaction consisted of initial denaturation at 96°C for 5 min, followed by 35 cycles of denaturation at 96°C for 45 s, annealing at 45°C for 1 min, extension at 72°C for 1 min and final extension at 72°C for 10 min. PCR product was verified by electrophoresis on 1.6% agarose gel stained with Sybr™ Safe DNA gel stain (ThermoFischer Scientific, Carlsbad, USA) and sequenced at BMR genomics (Padua, Italy) using an ABI Prism 3730XL DNA analyzer (ThermoFischer Scientific, Carlsbad, USA).

3 | RESULTS

3.1 | *Scirtothrips aurantii* Faure

2 ♀♀, 2 ♂♂ on *Citrus × sinensis*, Lentini (Syracuse) Italy 13.11.2025; 1♀, 1♂ on *C. × sinensis* Francofonte (Syracuse) Italy 7.11.2025.

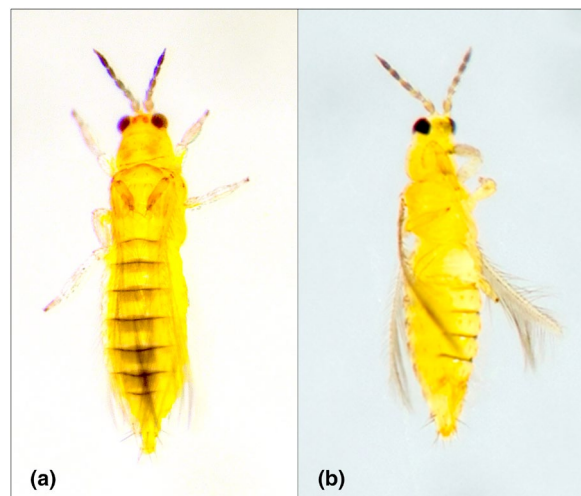


FIGURE 1 *Scirtothrips aurantii* (Faure): female, dorsal (left) and lateral view (right).

3.1.1 | Morphological diagnosis

The genus *Scirtothrips*, which includes about 100 species (EPPO, 2005), is distinguishable from the other genera of the family Thripidae by having the pronotum covered by closely spaced transverse striae, the abdominal tergites with numerous parallel rows of microtrichia in a lateral position, the sternites with bristles on the posterior margin and the metanotum with a pair of bristles near the anterior margin (Hoddle & Mound, 2003; Moritz et al., 2013).

Previous comprehensive morphological descriptions are available on Hoddle & Mound (2003) and Mound et al. (2019). The following morphological features enabled the identification of *S. aurantii*, distinguishing it from *S. dorsalis*, Hood 1919 and *S. citri* (Moulton, 1909), two congeneric species that can infest citrus.

Both sexes of *S. aurantii* are predominantly yellow in colour, similar to *S. dorsalis*, while it differs from *S. citri*, which is uniformly yellow. Indeed, in *S. aurantii* and *S. dorsalis*, the anterior margin of the tergites and sternites is dark brown with small brown areas associated. Major bristles are dark (Figure 1). In *S. aurantii*, female the head is wider than long. Postocular region and ocellar triangle with transverse sculptural lines leaning against each other. Antennae 8-segmented; III and IV segment each with forked sense cone. First segment white, II and III grey, V–VIII brown (Figure 2). Pronotum with closely spaced lines of sculpture; posterior margin with four pairs of bristles. Metanotum with irregular longitudinal cross-linking on the posterior half. Wings hyaline with shaded clavus. First vein with three bristles on the distal half. Second vein with three slightly spaced bristles. Postero-marginal cilia are long and slightly wavy. Clavo with four bristles in the veins.

Tergites III–VI with small, closely spaced median bristles. II–VIII with the laterals covered for a third by

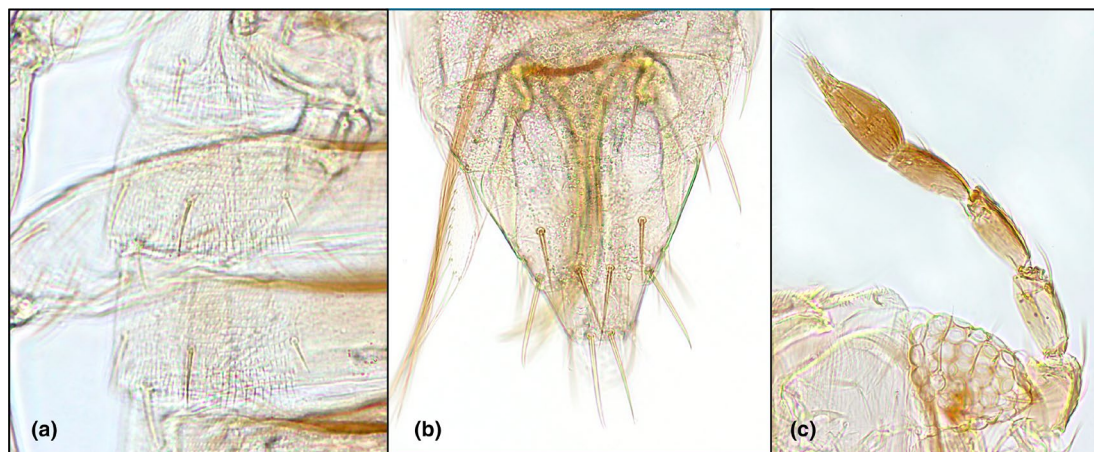


FIGURE 2 *Scirtothrips aurantii* (Faure): female, II-IV tergites with microtrichia combs (a); VIII-X tergites (b); antenna (c).

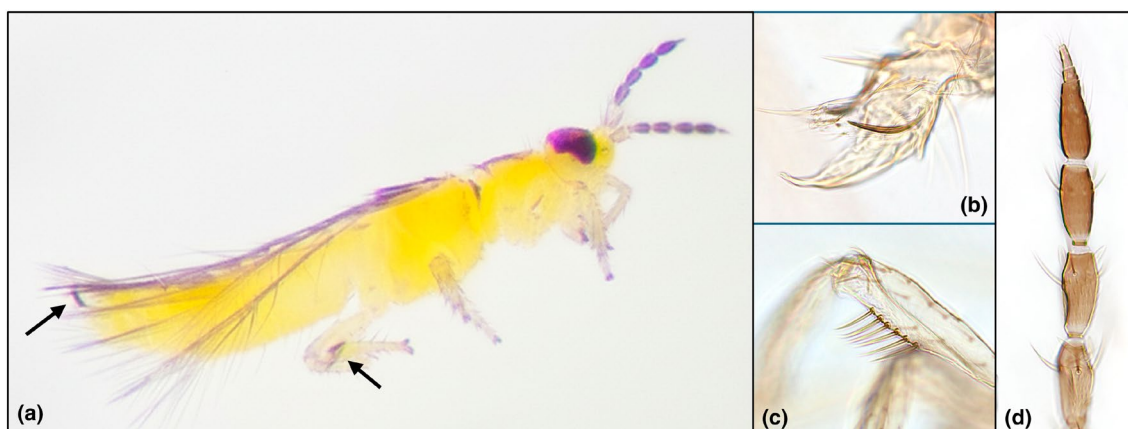


FIGURE 3 *Scirtothrips aurantii* (Faure): male, lateral view (a), arrows indicate right sickle-like drepanae and comb-like stout setae on hind femora; (b) detail of the sickle-like drepanae; (c) detail of the comb-like setae on hind femora; (d) III-VIII antennal segments.

thin, closely spaced microtrichia (Figure 2); the lateral microtrichia of the disc extend to the median portion of the tergite. IX segment without microtrichia discs (Figure 2).

Males are typically smaller than females and exhibit distinct sexual dimorphism in their abdominal and leg structures (Figure 3). They are uniquely characterized by two definitive traits: a comb of stout setae lining the back edge of the hind femora and a pair of prominent, dark, curved lateral processes (drepanae) on the ninth abdominal tergite (Figure 3). These features are absent in all other members of the genus.

3.1.2 | Molecular diagnosis

Through molecular analysis of the six adults (including both sexes) collected on *Citrus × sinensis*, at Lentini (Syracuse) Italy, 13-11-2025 and Francofonte (Syracuse), Italy 7-11-2025 high-quality sequences ranging in length from 541 to 596 bp were obtained. These were subjected to a BLASTN analysis on NCBI, showing a high

percentage of similarity from 99% to 100% with 10 reference sequences of *S. aurantii*. The similarities were found with sequences from specimens originating from South Africa. The obtained best sequences have been registered in the GenBank database under accession numbers PX830424 and PX830425.

3.1.3 | Field discovery

Based on field surveys and growers' interviews, the first infestation in Sicily started in early September 2025. Although specimens were successfully captured in early November, both adult and nymph populations fell below detectable levels by the end of the month.

To date, symptoms have only been observed on the leaves of orange trees in the investigated citrus orchards. These leaves exhibit distortion, originating from the central vein (see Figure 4). This distortion prevents normal leaf development, resulting in visible curling. In younger leaves, thrips feeding activity induces progressive stiffening, early senescence, and weakness in the petioles. In



FIGURE 4 *Scirtothrips aurantii* (Faure): damage on leaves.

many cases, this has led to leaf drop, often because of windy conditions. No symptoms of attack have yet been observed on the fruits, likely due to the late infestation onset.

4 | MANAGEMENT OF THE PEST

The movement of infested host plants remains the primary pathway for *S. aurantii*'s potential dispersal across all citrus-producing countries within the EPPO region. Consequently, the implementation of rigorous phytosanitary measures is essential to prevent the further spread of this pest in susceptible citrus areas. To ensure effective risk mitigation, phytosanitary regulations necessitate that imported nursery stock either originate from an officially designated Pest-Free Area (PFA) or that consignments comprise exclusively of

dormant, soil-free materials to prevent the accidental introduction of the pest (EPPO, 2025). Conversely, in terms of movement with fruit in trade, as *S. aurantii* exclusively infests immature fruit, then harvested mature citrus is not considered a viable pathway for the introduction or dissemination of the pest (EPPO, 2005; MacLeod & Collins, 2006). Managing *S. aurantii* in citrus orchards effectively requires targeted monitoring and timely interventions. Since control measures should be directed at the developmental stages of the aerial parts of the plant, an accurate detection is critical. A relevant diagnostic feature of *S. aurantii* is its absence from flowers. This behaviour serves as a critical ecological marker, effectively differentiating it from other common thrips species that typically visit flowers (e.g. *P. kellyanus*, *Frankliniella occidentalis* [Pergande]). (Grové et al., 2000a). Adults and nymphs are difficult to detect directly on plants, especially during periods

when the population is low (MacLeod & Collins, 2006). As an alternative, the presence of adults can be monitored using yellow sticky and dispersal/emergence traps (EFSA, 2018; Grout & Richards, 1990).

In South Africa, the biological control of *S. aurantii* involves various effective natural enemies, including predatory mites such as *Euseius addoensis* (McMurtry) and *Typhlodromalus* spp. (Acari: Phytoseiidae) (Grout et al., 1996; Grout & Richards, 1992; Grout & Stephen, 1995b). Additional control is exerted by the parasitoid *Goetheana incerta* Annecke (Hymenoptera: Eulophidae), which has been recorded in Eswatini (formerly Swaziland) and Malawi (Grout & Stephen, 1995a). Recent investigations have evaluated the efficacy of entomopathogenic fungi as microbial control agents (Acheampong et al., 2020).

Chemical treatments in citrus are applied in South Africa at the phenological stage of 75% petal fall, to maintain pest populations below the economic injury level (Grové et al., 2000b). The documented development of resistance to key chemical classes, including synthetic pyrethroids, presents a significant challenge (Grout et al., 1996; Rattan, 1992).

5 | DISCUSSION

The presence of *S. aurantii* poses a new threat to citrus production, particularly within an economic context currently recording significant growth in Italian exports (ISMEA, 2025). The introduction of this new thrips species should not lead growers to rely on unjustified chemical control methods, which may be ineffective and could disrupt the citrus ecosystem. The actual impact of this thrips in Italy has not yet been assessed, nor has its spread, infestation levels, or resulting economic damage. Most importantly, the biological response of *S. aurantii* to the specific climatic conditions in Sicily remains to be evaluated. In Valencia (Spain), for instance, climatic trends heavily influenced thrips populations and infestation rates throughout 2024 and 2025 (Tena et al., 2025). In this context, further investigations are underway to verify its presence in other areas and on other host plants during the next spring–summer season.

Globally, thrips have emerged as dominant agricultural pests due to their rapid development, highly competitive ability, and insecticide resistance (Wu et al., 2025). The potential establishment of *S. aurantii* in Europe is hypothesized to be restricted to climatically favourable zones, primarily encompassing the Mediterranean citrus-growing regions (EFSA, 2019). Despite its high biotic potential, *S. aurantii* has a limited dispersal capacity. Indeed, its primary spread pathway is international trade, specifically via the transport of plants for planting and cut flowers or foliage (EFSA, 2018; Vierbergen et al., 2010). In

particular, the interception of *S. aurantii* on cut flowers of *Eustoma grandiflorum* underscores the significant risk associated with the commercial cut flower trade (EFSA, 2019).

Feeding by both adults and nymphs has been documented in South Africa to cause permanent superficial scarring on the fruit epidermis. While the damage is primarily aesthetic, Bedford (1998) characterized the lesions as stem-end rings, lateral contact marks at fruit-to-fruit interfaces, ‘scribble’ patterns and irregular browning. This scarring significantly reduces the fresh-market value of the fruit, often resulting in its diversion to the juice processing industry (Gilbert, 1992; Gilbert & Bedford, 1998). In severe infestations, persistent feeding on apical leaf shoots can induce multiple budding. These result in the characteristic ‘witches’ broom’ formation, which may subsequently reduce crop yield in the following season (Gilbert & Bedford, 1998). Kamburov (1991) observed that heavy shoot infestations of citrus in late summer–early autumn may negatively impact the following year’s crop. Little is known about the susceptibility of varieties, and the literature reports that Navel orange fruits are particularly sensitive (Gilbert & Bedford, 1998). Young mango and avocado fruits can be severely scarred, while the leaves undergo malformations and stunting of growth (Bara & Laing, 2019; Grové et al., 2000a). In contrast, *S. aurantii* is not considered a pest in Australia, where its population was mainly recorded on the weed *Kalanchoe* (= *Bryophyllum*) *delagoense* (Saxifragales: Crassulaceae) (Garms et al., 2013; Rafter et al., 2008), a species widely distributed in the Mediterranean basin and Europe (Gallo & Smith, 2024). In addition, in a no-choice test, it was observed that the Australian strain of *S. aurantii* survived only on this plant, while failing to develop on *Citrus* spp. or mango (Manners & Dhileepan, 2005). Although the different behaviour of thrips on citrus in various regions has led to speculation about speciation phenomena, an integrated morphological and molecular analysis has demonstrated that these populations are conspecific (Hoodle et al., 2008; Morris & Mound, 2004).

Overall, to control pests such as *S. aurantii*, it is essential to develop multifaceted strategies that integrate various tools, including the quarantine regulation of traded plant material, rigorous monitoring, the use of natural enemies and the implementation of agronomic practices.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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REFERENCES

- Acheampong MA, Hill MP, Moore SD, Coombes CA (2020) UV sensitivity of *Beauveria bassiana* and *Metarhizium anisopliae* isolates under investigation as potential biological control agents in South African citrus orchards. *Fungal Biology*, 124, 304–310. <https://doi.org/10.1016/j.funbio.2019.08.009>
- Bara GT, Laing MD (2019) Determination of the natural host status of avocado fruit to pestiferous thrips (Thysanoptera: Thripidae) in KwaZulu-Natal, South Africa. *African Entomology* 27, 245–253 <https://doi.org/10.4001/003.027.0245>
- Bedford ECG (1998) Thrips, wind and other blemishes. In: Bedford, E.C.G., van den Berg, M.A., de Villiers, E.A. (Eds.), *Citrus Pests in the Republic of South Africa*, second ed. Agricultural Research Council, South Africa, pp. 170–183.
- Bella S (2024). Recent findings of alien insect in citrus and olive groves in the Mediterranean basin: new risks for integrated pest management (IPM). *Biodiversity Journal*, 15, 219–224. <https://doi.org/10.31396/Biodiv.Jour.2024.15.2.219.224>
- Benfatto D (1995) La minatrice serpentina degli agrumi: un nuovo fitofago presente in Italia. *Informatore Agrario*, 4, 79–80.
- Conti F, Tumminelli R, Amico C, Fiscaro R, Frittitta C, Perrotta G, & Marullo R (2002). Monitoring *Pezothrips kellyanus* on citrus in eastern Sicily. In: *Thrips and Tospoviruses: Proceedings of the 7th International Symposium on Thysanoptera*. Australian National Insect Collection, Canberra, 207–210.
- EFSA (European Food Safety Authority), Schrader G, Camilleri M, Diakaki M & Vos S. (2019). Pest survey card on *Scirtothrips aurantii*, *Scirtothrips citri* and *Scirtothrips dorsalis*. *EFSA supporting publication*. EN-1564. 21. doi: [10.2903/sp.efsa.2019.EN-1564](https://doi.org/10.2903/sp.efsa.2019.EN-1564)
- EFSA PLH Panel (EFSA Panel on Plant Health) Jeger M, Bragard C, Caffier D, Candresse T, Chatzivassiliou E, Dehnen-Schmutz K, Gilioli G, Gregoire J-C, Jaques Miret JA, Navarro MN, Niere B, Parnell S, Potting R, Rafoss T, Rossi V, Urek G, Van Bruggen A, Van der Werf W, West J, Winter S, Gardi C, MacLeod A (2018) Scientific Opinion on the pest categorisation of *Scirtothrips aurantii*. *EFSA Journal*. 16(3), 5188, 21 pp. <https://doi.org/10.2903/j.efsa.2018.5188>
- EPPO (2005) Standard PM 7/56. *Scirtothrips aurantii*, *Scirtothrips citri*, *Scirtothrips dorsalis*. *Bulletin OEPP/EPPO Bulletin* 35, 353–356.
- EPPO (2021) First report of *Scirtothrips aurantii* in Spain. EPPO Reporting service n. 1-2021, num. article: 2021/8.
- EPPO (2022) Update on the situation of *Scirtothrips aurantii* in Spain. EPPO Reporting service n. 4-2022, num. article: 2022/84.
- EPPO (2023) First report of *Scirtothrips aurantii* in Portugal. EPPO Reporting service n. 2-2023, num. article: 2023/36.
- EPPO (2024a) Update on the situation of *Scirtothrips aurantii* in Portugal. EPPO Reporting service n. 1-2024, num. article: 2024/10.
- EPPO (2024b) First report of *Scirtothrips aurantii* in Madeira (Portugal). EPPO Reporting service n. 5-2024, num. article: 2024/99.
- EPPO (2025) *Scirtothrips aurantii*. EPPO datasheets on pests recommended for regulation. Available online. <https://gd.eppo.int>
- FAOSTAT (2025) Food and Agriculture Organization of the United Nations (FAO). FAOSTAT Database. <http://faostat.fao.org/> (entered on 16th January 2026).
- Folmer O, Black M, Hoeh W, Lutz R. & Vrijenhoek R. (1994). DNA primers for amplification of mitochondrial cytochrome c oxidase subunit I from diverse metazoan invertebrates. *Molecular Marine Biology and Biotechnology* 3, 294–299.
- Gallo L, Smith GF (2024) A review of the genus *Kalanchoe* (Crassulaceae subfam. Cotyledonoideae) in the Euro-Mediterranean area, with an annotated catalogue and identification key. *Phytotaxa*, 674, 171–198. <https://doi.org/10.11646/phytotaxa.674.2.2>
- Garms BW, Mound LA, Schellhorn NA (2013) Polyphagy in the Australian population of South African citrus thrips (*Scirtothrips aurantii* Faure). *Australian Journal of Entomology* 52, 282–289.
- Gilbert MJ (1992) *The ecology of the South African citrus thrips Scirtothrips aurantii* Faure and its economic implication. Ph.D. thesis, Rhodes University, Grahamstown, South Africa.
- Gilbert MJ. & Bedford ECG. (1998). Citrus thrips *Scirtothrips aurantii* faure. In: Bedford, E.C.G., van den Berg, M.A., de Villiers, E.A. (Eds.), *Citrus Pests in the Republic of South Africa*, second ed. Agricultural Research Council, South Africa, pp. 164–170.
- Gilbert MJ, Samways MJ (2018) Mature larval dispersal and adult emergence of the economically significant pest, *Scirtothrips aurantii* Faure (Thysanoptera: Thripidae), in commercial citrus. *Journal of Insect Science* 18(2), 32. <https://doi.org/10.1093/jisesa/iey028>
- Grout TG, Moore SD (2015) Citrus. In: Prinsloo GL & Uys, GM (Eds.), *Insects of cultivated plants and natural pastures in Southern Africa*. Entomological Society of Southern Africa, Pretoria, South Africa, 447–501.
- Grout TG, Richards GI (1990). Monitoring citrus thrips, *Scirtothrips aurantii* Faure (Thysanoptera, Thripidae), with yellow card traps and the effect of latitude on treatment thresholds. *Journal of Applied Entomology*, 109, 385–389.
- Grout TG. & Richards GI. (1992). *Euseius addoensis*, an effective predator of citrus thrips, *Scirtothrips aurantii*, in the eastern Cape Province of South Africa. *Experimental and Applied Acarology*. 15, 1–13.
- Grout TG. & Stephen PR. (1995a). *Goetheana incerta* parasitizing citrus thrips in southern Africa. *Citrus Journal* 5(4), 30–32.
- Grout TG. & Stephen PR. (1995b). New windbreak tree contributes towards integrated pest management of citrus. *Citrus Journal* 5(4), 26–27.
- Grout TG, Stephen PR. & la Croix NJS. (1996). Citrus thrips (Thysanoptera: Thripidae) in Swaziland develop tolerance to tartar emetic bait. *African Entomology* 4(1), 15–20.
- Grové T, Giliomee JH, Pringle KL (2000a) Seasonal abundance of various stages of the citrus thrips, *Scirtothrips aurantii*, on two mango cultivars in South Africa. *Phytoparasitica* 28, 43–53.
- Grové T, Giliomee JH, Pringle KL (2000b) Field evaluation of insecticides for the control of citrus thrips *Scirtothrips aurantii* (Thysanoptera: Thripidae), on mango. *African Plant Protection* 6(1), 9–15.
- Hebert PDN, Cywinska A, Ball SL, de Waard JR (2003) Biological identification through DNA barcodes. *Proceedings of Biological Sciences of the Royal Society, London B*, 270, 313–321.
- Hoddle M, Mound LA (2003). The genus *Scirtothrips* in Australia. *Zootaxa*, 268, 1–40.
- Hoodle MS, Heraty JM, Rugman-Jones PF, Mound LA, Stouthamer R (2008) Relationships Among Species of *Scirtothrips* (Thysanoptera: Thripidae, Thripinae) Using Molecular and Morphological Data. *Annals of the Entomological Society of America*, 101, 491–500.
- ISMEA (Istituto di Servizi per il Mercato Agricolo Alimentare) (2025) Tendenze e dinamiche recenti – Agrumi 2025. file:///C:/

- Users/Utente/Downloads/2025_Tendenze_Agrumi_2704_rev_FDB-I.pdf (in Italian).
- Kamburov SS (1991) Damage to fruit and the impact on crop-set from late infestations of citrus thrips (*Scirtothrips aurantii* Faure). *Citrus Journal*, 1, 33-34.
- MacLeod A, Collins D (2006) CSL pest risk analysis for *Scirtothrips dorsalis*. Central Science Laboratory, 8 pp. Available at: <https://secure.fera.defra.gov.uk/phiw/riskRegister/downloadExternalPra.cfm?id=3917>.
- Manners AG, Dhileepan K (2005) Australian *Scirtothrips aurantii* Faure (Thysanoptera: Thripidae) only survived on mother-of-millions (*Bryophyllum delagoense*) in a no-choice trial. *Plant Protection Quarterly*, 20, 33-35.
- Martin JH, Rapisarda C (2000) The whiteflies of Europe and Mediterranean basin. *Bulletin of Entomological Research*, 90, 407-448.
- Marullo R (1998) *Pezothrips kellyanus*, un nuovo tripide parassita delle colture meridionali. *Informatore Agrario*, 4, 79-80.
- Marullo R (2003) *Conoscere i Tisanotteri*. Guida al riconoscimento delle specie dannose alle colture agrarie. Edagricole, Bologna, 1-75 pp.
- Mifsud D, Cutajar S, Cassar T, D'Urso V, Sabella G, Kazerani F, Puglisi A, Brunetti S, Bella S, Schlick-Steiner I. & Lamoliere A. (2023) *Alien Invasive Arthropods of Malta and Sicily*. Malta University Press, viii +408 pgs.
- Moritz G, Brandt S, Triapitsyn S, Subramanian S (2013) *Identification and information tools for pest thrips in East Africa*. CBIT Publishing, Queensland. Available at: <http://thripsnet.zoologie.uni-halle.de/key-server-neu/data/03030c05-030b-4107-880b-0a0a0702060d/media/Html/index.htm>.
- Morris DC, Mound LA (2004) Molecular relationships between populations of South African citrus thrips (*Scirtothrips aurantii* Faure) in South Africa and Queensland, Australia. *Journal of Australian Entomology*, 43, 353-358. <https://doi.org/10.1111/j.1326-6756.2004.00437.x>
- Mound LA, Hoddle MS, Hastings A (2019). *Thysanoptera Californica - Thrips of California*. Lucidcentral.org, Identical Pty Ltd., Queensland, Australia.
- Porcelli F (2008) First record of *Aleurocanthus spiniferus* (Homoptera: Aleyrodidae) in Apulia, Southern Italy. *EPPO Bulletin*, 38, 516-518. <https://doi.org/10.1111/j.1365-2338.2008.01273.x>
- Rafter MA, Gillions RM, Walter GH (2008) Generalist herbivores in weed biological control – a natural experiment with a reportedly polyphagous thrips. *Biological Control* 44, 188-195. <https://doi.org/10.1016/j.biocontrol.2007.09.011>
- Rattan PS (1992) Thrips (*Scirtothrips aurantii*), synthetic pyrethroid insecticides and alternatives. *Quarterly Newsletter, Tea Research Foundation of Central Africa*. 106, 9-11.
- Seebens H, Blackburn TM, Dyer EE, Genovesi P, Hulme PE, Jeschke JM, Pagad S et al. (2017). No Saturation in the Accumulation of Alien Species Worldwide. *Nature Communications*, 8, 14435. <https://doi.org/10.1038/ncomms14435>
- Tena A, Monzó C, Catalán J, Urbaneja A (2025) Sustainable management of *Scirtothrips aurantii* in Spanish citrus orchards. IOBC-WPRS Meeting on Integrated Control in Citrus Fruit Crops, Castelló de la Plana (Spain), 25-27.11.2025. <https://drive.google.com/file/d/1jfc2ilMr6WdE-Pa9Qie3LNzAbkJPqo1b/view> (abstract).
- Tropea Garzia G, Tumminelli R, Ben Hmad E, Massimino Cocuzza G (2025) First report of *Eutetranychus orientalis* (Klein, 1936) (Acari, Tetranychidae), found in citrus orchards in Eastern Sicily. *EPPO Bulletin*, 55, 136–141. <https://doi.org/10.1111/epp.13061>
- Urbaneja A, Ciancio A, Droby S, Hoodle M, Liu J, Tena A (2023) Recent advances in biological control of citrus pests and disease. *Biological Control*, 184, 105271.
- Urbaneja A, Grout TG, Gravena S, Wu F, Cen Y, Stansly PA (2020) Citrus pests in a global world. In: Talón M, Caruso M, Gmitter Jr. FG (Eds.), *The Genus Citrus*, (pp. 333-348). Elsevier, <https://doi.org/10.1016/B978-0-12-812163-4.00016-4>
- Vierbergen G, Kucharczyk H, Kirk WDJ (2010) A key to the second instar larvae of the Thripidae of the Western Palaearctic region (Thysanoptera). *Tijdschrift voor Entomologie* 153(1), 99-160. <https://doi.org/10.1163/22119434-900000294>.
- Wu S, Reitz SR, Qiu Z, He Z, Xing Z, Gao Y (2025) How have thrips succeeded as major pests globally? *Entomologia Generalis*, 45, 609–619. DOI: <https://doi.org/10.1127/entomologia/3084>
- Zappalà L (2010) Citrus Integrated Pest Management in Italy. In: Ciancio A, Mukerji K (eds.) *Integrated Pest Management of Arthropod Pests and Insect Borne Diseases. Integrated Management of Plant Pests and Diseases*, vol. 5. Springer, Dordrecht, The Netherlands. https://doi.org/10.1007/978-90-481-8606-8_4

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