

## Data Sheets on Quarantine Pests

*Scirtothrips dorsalis***IDENTITY****Name:** *Scirtothrips dorsalis* Hood**Synonyms:** *Neophysopus fragariae* Girault*Heliothrips minutissimus* Bagnall*Anaphothrips andreae* Karny*Scirtothrips dorsalis* var. *padmae* Ramakrishna**Taxonomic position:** Insecta: Thysanoptera: Thripidae**Common names:** Chilli thrips, yellow tea thrips (English)

Thrips jaune du théier (French)

Nordindischer Teeblasenfuss (German)

Tya-na-kiiro-azamiuma (Japanese)

**Notes on taxonomy and nomenclature:** The number of synonyms is a measure of the polyphagy and extensive geographical distribution of this species. It is closely similar to *S. oligochaetus* Karny, which is also polyphagous and widespread.**Bayer computer code:** SCITDO**EPPO A1 list:** No. 223**EU Annex designation:** II/A1**HOSTS**

Native host plants are probably various Fabaceae, such as *Acacia*, *Brownea*, *Mimosa* and *Saraca*, but *S. dorsalis* is known as a pest on many crops including *Actinidia chinensis*, *Arachis*, *Capsicum*, *Citrus*, cotton (*Gossypium hirsutum*), *Fragaria*, grapevine (*Vitis vinifera*), *Hevea brasiliensis*, *Hydrangea*, *Mangifera*, *Nelumbo*, onions (*Allium cepa*), *Ricinus*, *Rosa*, tamarinds (*Tamarindus indica*) and tea (*Camellia sinensis*). It is only cited as a significant pest of *Citrus* in Japan and Taiwan.

**GEOGRAPHICAL DISTRIBUTION****EPPO region:** Absent.**Asia:** Bangladesh, Brunei, China (Guangdong, Zhejiang), Hong Kong, India (Andhra Pradesh, Assam, Delhi, Goa, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu, West Bengal), Indonesia (Java, Sulawesi, Sumatra), Japan (Honshu, Kyushu), Korea Republic, Malaysia (Peninsular), Myanmar, Pakistan, Philippines, Sri Lanka, Taiwan, Thailand.**Africa:** South Africa.**North America:** USA (Hawaii).**Oceania:** Australia (Queensland), Papua New Guinea, Solomon Islands.**EU:** Absent.**Distribution map:** See CIE (1986, No. 475).

## BIOLOGY

The biology of *S. dorsalis* is similar to that of other *Scirtothrips* spp. (EPPO/CABI, 1996).

## DETECTION AND IDENTIFICATION

### Symptoms

In common with other members of the genus, this species can cause considerable distortion to young leaves on many of the crops on which it feeds.

### Morphology

Members of the genus *Scirtothrips* are readily distinguished from all other Thripidae by the following characters: surface of pronotum covered with many closely spaced transverse striae; abdominal tergites laterally with numerous parallel rows of tiny microtrichia; sternites with marginal setae arising at posterior margin; metanotum with median pair of setae arising near anterior margin. The only closely similar species is *Drepanothrips reuteri*, a native European pest of grapevine, but that has the antennae 6-segmented (the 3 terminal segments being fused) instead of 8-segmented. Most of the 59 species described in *Scirtothrips* were defined originally by their authors on unreliable colour and silhouette characters; Mound & Palmer (1981) describe many structural details by which each pest species may be distinguished. Many undescribed species are known from Central America (Mound & Marullo, in press). *Scirtothrips* spp. primarily infest young growing buds, so these should be examined particularly carefully.

The males of *S. dorsalis* do not have dark lateral drepanae on the ninth tergite. Females have the following characters: median ocellar setae on head arising close together between the posterior pair of ocelli; forewing posteromarginal cilia straight not wavy; median abdominal sternites usually with microtrichia extending across the median area, at least near the posterior margin; abdominal tergites and sternites with a transverse anterior dark line; tergites with median area dark (pale in the very similar Oriental species *S. oligochaetus*); median tergites each with 3 setae on lateral microtrichial fields (4 to 5 in *S. oligochaetus*).

## MEANS OF MOVEMENT AND DISPERSAL

The potential of *Scirtothrips* spp. for natural spread is relatively limited. In international trade, *S. dorsalis* could be carried on plants for planting, but in fact interceptions are relatively rare. Unlike many Thysanoptera, *Scirtothrips* spp. seem to require access to soft green tissues, except when pupating in leaf litter and soil. So only seedlings or cuttings with young growing leaf buds are liable to carry these pests. Only young fruits are attacked, so the risk of these thrips being carried on harvested fruits is small. There is no direct evidence that *S. dorsalis* has been dispersed beyond its natural range by human activity, but its presence in South Africa and Hawaii as well as in its mainly South-east Asian range is suggestive. It has been intercepted in the Netherlands.

## PEST SIGNIFICANCE

### Economic impact

At least ten *Scirtothrips* spp. are known as pests of various crops in different parts of the tropics, but most of them have restricted geographic ranges and tropical host plants, such as *S. kenyensis* which damages tea and coffee in eastern Africa, or *S. manihoti* which causes serious leaf distortion of cassava in Central and South America. *Scirtothrips* spp. are particularly associated with plants that are growing actively in warm, dry conditions; they are usually more abundant on terminal shoots rather than within the canopy of a tree. With

*S. citri* and *S. dorsalis* (EPPO/CABI, 1996), *S. aurantii* is, as a pest of citrus, one of the most important *Scirtothrips* spp. for international agriculture.

In its principal range in tropical Asia, *S. dorsalis* is, however, mainly a serious pest of herbaceous plants: vegetables in Taiwan and Thailand, Capsicum and groundnuts in India, cotton in India and Pakistan. It is also a pest of flowers, for example of roses and onions in India. In Malaysia, it is a pest of the flowers and leaves of *Hevea brasiliensis*. In Japan and Taiwan, *Citrus* (especially *C. unshiu*) is seriously affected (Tatara & Furuhashi, 1992). The type of damage is essentially similar to that caused by *S. aurantii* (EPPO/CABI, 1996), with distortion of young leaves and scarring of fruit, leading both to crop yield reduction and loss of crop quality. In Japan, *S. dorsalis* is also a pest of grapevine (Shibao *et al.*, 1991) and tea. It is found in kiwi orchards, but without causing damage to the fruits (Sakakibara & Nishigaki, 1988). Despite the common name of the pest (yellow tea thrips), tea does not now seem to be the host of greatest concern in India or elsewhere.

### Control

*S. dorsalis* is chemically controlled on *Capsicum* in India with insecticides like quinalphos, dimethoate, phosphamidon, carbaryl, and especially monocrotophos or permethrin (Sanap & Nawale, 1987). Relative resistance to several insecticides has been observed (Reddy *et al.*, 1992). Vinyl film has been used to protect citrus from *S. dorsalis* in Japan (Gyoutoku *et al.*, 1987).

### Phytosanitary risk

*S. dorsalis* has recently been added to the EPPO A1 list but has not been classed as a quarantine pest by any other regional plant protection organization. *S. dorsalis* is mainly a tropical species, but its occurrence in citrus-growing areas with a subtropical climate suggests that it could possibly establish on citrus in southern Europe and the Mediterranean area. On the basis of its natural geographical and host range, *S. dorsalis* seems less likely to establish on citrus under Mediterranean conditions than *S. aurantii* or *S. citri* (EPPO/CABI, 1996). On the other hand, its host range includes a number of vegetable crops, and the possibility of introduction onto glasshouse crops in Europe merits consideration.

## PHYTOSANITARY MEASURES

Importation of *Citrus* plants for planting from countries where *S. dorsalis* occurs should be prohibited or restricted, as it is in general already on account of other important pests. Other host plants should preferably come from nurseries found free from the pest.

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