

The Gum Tree Thrips, *Thrips australis*: Description, Geographical Distribution and Host Plants in Tunisia

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ABSTRACT

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The gum tree thrips, *Thrips australis*, was recorded during 2011 in Tunisia in the Center East coastal region. Moreover, it was encountered during 2012 in many other regions (North and Center West of the country). *T. australis* was found on different host plants among which *Eucalyptus* spp., *Citrus* spp., *Chrysanthemum* spp., *Calendula arvensis*, and *Tropaeolum majus*.

Keywords: Description, distribution, host plants, thrips, Tunisia

The order Thysanoptera was and still overlooked despite its economic importance because of their small size. However, studying this group of insects should provide very interesting results fundamentally (3, 22). Thrips represent a relatively ancient group of insects whose origin must date back millions years ago, knowing that oldest specimen of thrips found by paleontologists in Lebanon date back to 120 to 140 million years ago with characteristics almost similar to those of recent thrips species (8). *Thrips* is the most species rich genus of Thysanoptera with about 250 described species worldwide (14). The gum tree thrips or *Thrips australis* (Thysanoptera; Thripidae) native to Australia (8) had

been observed on several other parts of the world and on many host plants (10). It is often placed in a monobasic genus *Isoneurothrips* because the forewing clavus bears six (instead of the normal five) marginal setae, and the pronotum has a strong sub-marginal ridge at the posterior part (13). It was placed by Bhatti in 1980 in the genus *Thrips* (7). *T. australis* equally known as *Isoneurothrips australis*, originating from Australia (7, 27), was also recorded in many other places over the world such as Europe (30) like Spain (7, 20), Azores in Portugal (24) and Great Britain (4); in Africa (13) like Egypt (23), Kenya, South-Africa (13) and La Réunion (13); in Asia like in Cyprus (28), Iran (9), Japan (11), Peninsular Malaysia (14), China (10, 29); in the USA (19) like in California, Kauai, Maui and Molokai in Hawai (6, 21, 26, 27); in Central and South America (17) like Cuba (5), Brazil (12) and Chile (1); and in New-Zealand (18). This species has extended to subtropical regions and many countries of the Mediterranean regions

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(7). *T. australis* is not considered as a dangerous pest and has no significant damages on host plants (2, 7).

This study was carried out during an inventory of thrips species from 2009 until 2012 in different Tunisian localities (Fig. 1). Samples were taken by baiting branches of eucalyptus and citrus on a white tissue and then thrips were aspirated by a handmade aspirator and placed into vials containing 75% ethyl alcohol for a later identification. Concerning weeds, 20 flowers were taken

from each botanical species and placed into plastic bags. Then, thrips were extracted by baiting flowers and placing them into vials with 75% ethyl alcohol before being identified. The identification was made by the first author and confirmed by Dr. Laurence Mound (Honorary research fellow in thrips biology and identification at CSIRO ecosystem sciences in Black Mountain Laboratories in Australia, personal communication).



Fig. 1. Geographical localization of the prospected fields in Tunisia in which *Thrips australis* was recorded.

In Tunisia and during 2011 and 2012, only females of *T. australis* were collected on many host plants and in many locations (Fig. 1). It was recorded at first in Chott-Mariem from late April to mid-May 2011 on different host plants such as *Eucalyptus* spp., *Calendula*

Tunisian Journal of Plant Protection

arvensis, *Anacyclus clavatus*, and *Chrysanthemum coronarium*. Besides, *T. australis* was observed on *Eucalyptus* spp. and *C. coronarium* in the region of Sidi-Abdelhamid at late November. During 2012, the gum tree thrips was noted in the North of Tunisia on *C.*

arvensis in the region of Bousselem and Béja in January 09th, 2012. During the same month, *T. australis* was encountered on *Citrus* in the region of Chott-Mariem, *Tropaeolum majus* in Bekalta and *C. arvensis* in Teboulba. In February 2012, this thrips species was found in Kondar on *C. arvensis* and on *Chrysanthemum carinatum* in Sidi-Abdelhamid. This pest was also observed in the Center of Monastir on two host plants that are *Eucalyptus* spp. and *C. coronarium* during March 2012. On the other hand, *T. australis* had spread even to the Center West of the country in the region of Kasserine on *C. coronarium* on May 15th, 2012 (Table 1). It must be noted that the gum tree thrips was not observed with very high numbers; in all the samples, the highest number encountered was 3 females on *Eucalyptus* spp. in the region of Chott-Mariem.

This thrips species is associated with white eucalyptus flowers both in Australia and in other countries and feeds mainly on flowers (15, 18). However, the gum tree thrips probably breeds also in the flowers of Myrtaceae (13, 18). This species has been introduced widely throughout the warmer parts of the world wherever eucalyptus trees have been planted. In Africa, it is known to be established in both Kenya and South-Africa where there are large areas of eucalyptus, but it probably also occurs elsewhere on these trees. On the other hand, it can produce very large populations and adults disperse and move to the flowers of many different plants (13). Moreover, *T. australis* was also reported on tomato, *Capsicum*, French bean, sunflower and carrot, but it has not been found on these crops in Iran (9). This species occurred also on *Citrus* though with few numbers (20). In fact, it was the same case in Tunisia where *T.*

australis was encountered on *Eucalyptus* spp., *Citrus* spp. and weeds belonging to different botanical families such as Asteraceae (*C. arvensis*, *C. coronarium*, *C. carinatum*, and *A. clavatus*) and Topaeolaceae (*Tropaeolum majus*).

The genus *Thrips* is known to have antennae with 7 to 8 segments, first and second antennal segments with transversal lines of micro-setae, forewing with few setae on distal half of the first vein, sometimes with a continuous line of setae in each vein. Sternites have a discal setae, but pleurotergites with only posteromarginal setae. The spiracle is situated in the eighth tergite located forward of the line of micro-setae (7, 15, 18). Regarding the species *T. australis*, it is variable in color from yellow to extensively brown, usually a yellow head with a dark occipital ridge, a yellowish brown pronotum and a median area of tergites plus last 3 abdominal segments brown (Fig. 2). Antennal segments I and proximal half of III are yellow; remaining segments are largely brown; forewings were pale with dark setae, hind margin often shaded. Antennae were 7-segmented, VII short, and VI bullet-shaped (Fig. 3). Ocellar setae III are just within anterior margins of triangle, close to fore ocellus. Pronotum have 2 pairs of short posteroangular setae. Metanotum is reticulate (Fig. 4), median setae are arising well behind anterior margin and campaniform sensilla are present. Forewing first and second veins are with almost complete row of closely set setae and clavus with 6 marginal setae (Fig. 5). Tergite VIII is with comb incomplete medially, about 8 teeth laterally; pleurotergites are commonly with several discal setae, and sternites are with up to 30 discal setae. Male is similar to female, but sternites III-VII are each with a glandular area (7, 9, 13, 18, 25).

Table 1. Description of sampling sites and host plants on which *Thrips australis* was recorded.

Location	Geographic localization	Bioclimatic zonation	Altitude (m)	Governorate	Sampling date	Host plant	Used plant organ	collected Individual number (all ♀)
Chott-Mariem	35°54'39.69''N 10°33'24.42''E	Semi-arid	46	Sousse	23.04.2011	<i>Eucalyptus</i> spp.	Baiting branches	2
Chott-Mariem	35°54'39.69''N 10°33'24.42''E	Semi-arid	46	Sousse	12.05.2011	<i>Eucalyptus</i> spp.	Baiting branches	3
Chott-Mariem	35°54'39.69''N 10°33'24.42''E	Semi-arid	46	Sousse	12.05.2011	<i>Calendula arvensis</i>	20 flowers	1
Chott-Mariem	35°54'39.69''N 10°33'24.42''E	Semi-arid	46	Sousse	12.05.2011	<i>Anacyclus clavatus</i>	20 flowers	1
Chott-Mariem	35°54'39.69''N 10°33'24.42''E	Semi-arid	46	Sousse	14.05.2011	<i>Chrysanthemum coronarium</i>	20 flowers	2
Sidi Abdel-Hamid	35°47'55.64''N 10°37'16.23''E	Semi-arid	14	Sousse	28.11.2011	<i>Chrysanthemum carinatum</i>	20 flowers	1
Sidi Abdel-Hamid	35°47'55.64''N 10°37'16.23''E	Semi-arid	14	Sousse	28.11.2011	<i>Eucalyptus</i> spp.	Baiting branches	1
Bousselem	36°37'00.18''N 08°57'49.12''E	Humid	124	Jendouba	09.01.2012	<i>Calendula arvensis</i>	20 flowers	1
Béja	36°43'31.39''N 09°11'26.51''E	Humid	203	Beja	09.01.2012	<i>Calendula arvensis</i>	20 flowers	1
Chott-Mariem	35°54'39.69''N 10°33'24.42''E	Semi-arid	46	Sousse	12.01.2012	<i>Citrus</i>	20 flowers	1
Bekalta	35°37'52.20''N 10°58'55.31''E	Semi-arid	16	Monastir	12.01.2012	<i>Tropaeolum majus</i>	20 flowers	1
Teboulba	35°38'18.34''N 10°57'17.20''E	Semi-arid	23	Monastir	12.01.2012	<i>Calendula arvensis</i>	20 flowers	1
Kondar	35°55'03.11''N 10°17'10.59''E	Arid	21	Sousse	20.02.2012	<i>Calendula arvensis</i>	20 flowers	1
Sidi Abdel-Hamid	35°47'55.64''N 10°37'16.23''E	Semi-arid	14	Sousse	20.02.2012	<i>Chrysanthemum carinatum</i>	20 flowers	1
Monastir	35°45'04.03''N 10°49'22.80''E	Semi-arid	7	Monastir	14.03.2012	<i>Eucalyptus</i> spp.	Baiting branches	2
Monastir	35°45'04.03''N 10°49'22.80''E	Semi-arid	7	Monastir	14.03.2012	<i>Chrysanthemum coronarium</i>	20 flowers	1
Kasserine	35°10'14.87''N 08°49'29.21''E	Arid	654	Kasserine	18.05.2012	<i>Chrysanthemum coronarium</i>	20 flowers	1



Fig. 2. Female of *Thrips australis*.



Fig. 3. Antenna of *Thrips australis*.

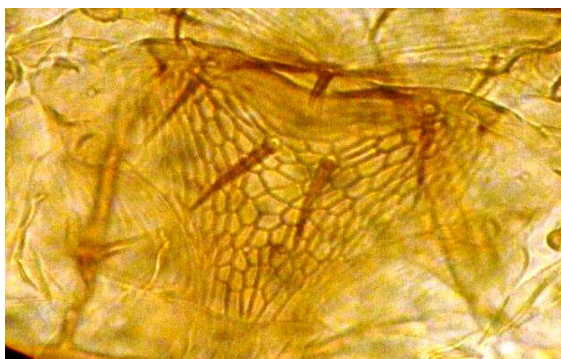


Fig. 4. Metanotum reticulate of *Thrips australis*.

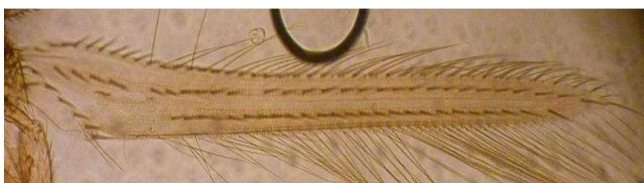


Fig. 5. Forewing first and second veins of *Thrips australis* with almost complete row of closely set setae.

RESUME

Elimem M. et Chermiti B. 2014. Le thrips de l'eucalyptus *Thrips australis* : Description, distribution géographique et plantes hôtes en Tunisie. *Tunisian Journal of Plant Protection* 9: 163-169.

Le thrips de l'eucalyptus, *Thrips australis*, a été repéré durant 2011 au Centre Est de la littorale tunisienne. En outre, il a été rencontré en 2012 dans de nombreuses autres régions (Nord et Centre Ouest du pays). *T. australis* a été trouvé sur différentes plantes hôtes parmi lesquelles *Eucalyptus* spp., *Citrus* spp., *Chrysanthemum* spp., *Calendula arvensis* et *Tropaeolum majus*.

Mots clés: Description, distribution, plantes hôtes, thrips, Tunisie

ملخص

الإمام، محمد وإبراهيم الشرميطي. 2014. ترييس الأوكالبتوس *Thrips australis* : توصيفه وتوزيعه الجغرافي ونباتاته العائلة في تونس. *Tunisian Journal of Plant Protection* 9: 163-169.

رصد ترييس الأوكالبتوس، *Thrips australis*، خلال عام 2011 في الوسط الشرقي للمناطق الساحلية التونسية. إضافة إلى ذلك، تم العثور عليه سنة 2012 في العديد من المناطق الأخرى (الوسطى والشمالية الغربية من البلاد). تم العثور على *T. australis* على نباتات عائلة مختلفة من بينها *Eucalyptus* spp. و *Citrus* spp. و *Chrysanthemum* spp. و *Calendula arvensis* و *Tropaeolum majus*.

كلمات مفتاحية: ترييس، توزيع، توصيف، تونس، نباتات عائلة

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