

First report of *Dolichothrips indicus* (Thysanoptera: Phlaeothripidae) in Colombia

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Primer registro de *Dolichothrips indicus* (Thysanoptera: Phlaeothripidae) en Colombia

RESUMEN. *Dolichothrips indicus* (Hood, 1919) (Thysanoptera: Phlaeothripidae) es frecuente en botones florales, flores e inflorescencias de diferentes especies vegetales, por lo que su papel como posible agente polinizador es considerado en varios estudios. Se registra por primera vez para Colombia la presencia de *D. indicus* en panículas del cultivo de mango variedad "Azúcar". Las características morfológicas diagnósticas de la especie se describen e ilustran.

PALABRAS CLAVE. *Mangifera indica*. Mango cultivar Azúcar. Panícula. Polinizador.

ABSTRACT. *Dolichothrips indicus* (Hood, 1919) (Thysanoptera: Phlaeothripidae) is frequently found in flower buds, flowers and inflorescences of different plant species, so its role as a possible pollinating agent is considered in several studies. The presence of *D. indicus* in panicles of the "Azúcar" variety mango crop is recorded for the first time in Colombia. The diagnostic morphological characteristics of the species are described and illustrated.

KEYWORDS. *Mangifera indica*. Mango cv. azúcar. Panicle. Pollinator.

Thysanoptera includes about 6,453 species, two suborders (Terebrantia and Tubulifera) and 9 families (Thrips Wiki, 2023) that present a wide range of hosts, roles (phytophagous, fungivorous, predators or ectoparasite) and high adaptability to environmental conditions (Mound & Marullo, 1996; Cavalleri et al., 2011), which favors their dispersal. Some species are considered agricultural pests, while others have a beneficial action on crops, either as predatory of pest arthropods, mycophagous or pollinating agents (Mound, 2004; Mound & Teulon, 1995).

The genus *Dolichothrips* (Thysanoptera: Phlaeothripidae), native to the Asian continent, has about 21 species, mainly phytophagous (Dang et al., 2014; Mound &

Okajima, 2015) and with a preference for flowers and buds for the development of its life cycle (Mound & Minaei, 2007). The species of this genus play an important role as pollinators in some Euphorbiaceae (Fiala et al., 2011; Mound & Okajima, 2015), among them *Dolichothrips indicus* (Hood, 1919) species first described as *Neoheegeria indica* on *Ailanthus excelsa* Roxb. (Simaroubaceae) in southern India and then, transferred to *Dolichothrips* genus (Hood, 1919). However, in Sri Lanka and Guam was identified as *Dolichothrips nesius* Stannard, 1961 on Melastomaceae (*Melastoma malabathricum* L. and *Melastoma marianum* Naudin.) (Stannard, 1961). While in Taiwan and Philippines, was classified as *Dolichothrips pumilus* on *Diospyros discolor* Willd. (Ebenaceae), *Melastoma* sp. (Melastomaceae),

Cyperus sp. (Cyperaceae), *Ficus* sp. (Moraceae), *Hibiscus* sp. (Malvaceae) and *Sarcocephalus* sp. (Rubiaceae) (Reyes, 1994). In the American continent, *D. indicus* was observed in Puerto Rico on *Capsicum annuum* L. and *Solanum melongena* L. (Solanaceae) with no damage to the crop (Cabrera-Asencio, 1998). In Florida (United States), the first report of the species on *Gossypium* sp. (Malvaceae) (Broda, 2002) and *Tibouchina* sp. (Melastomataceae) (Halbert, 2020), while in Hawaii, was observed in 2002 on *Macaranga tanarius* (L.) Müll. Arg. (Euphorbiaceae) (Mound & Matsunaga, 2017), *Gardenia jasminoides* J.Ellis (Rubiaceae) and *Psidium guajava* L. (Myrtaceae) (Hawaii Department of Agriculture, 2003). In Brazil, *D. indicus* was reported on *Acacia* sp. (Fabaceae) (Lima, 2011), and in Trinidad and Guadeloupe on fruit species such as *Persea americana* Mill. (Lauraceae) (Hodde et al., 2002), *Mangifera indica* L. and *Anacardium occidentale* L. (Anacardiaceae) (Etienne et al., 2015).

Murillo.

Mound & Okajima (2015) in their research on the action of *D. indicus* as a pollinator report the presence of specimens on *Cassia* sp. (Fabaceae), *Mallotus* sp. (Euphorbiaceae), inflorescence of *Nephelium lappaceum* L. (Sapindaceae), *Hibiscus tiliaceus* L. (Malvaceae), *Murraya koeigii* (L.) Spreng. (Rutaceae), *Acalypha hispida* Burm.f. (Euphorbiaceae) and *Musa* sp. (Musaceae) in French Polynesia, Japan, Barbados and New Caledonia. On the other hand, Calvert et al. (2019), in Hawaii, reported *D. indicus* on panicles of *M. indica*, *A. hispida* (Euphorbiaceae), *M. mappa* and *M. tanarius*, as well as on flowers of *Biancaea decapetala* (Roth) O.Deg. (Fabaceae) and meristems of *H. tiliaceus*.

The study was conducted during the characterization of emerging pests in mango (*M. indica*) cv Azúcar in mango crops in the municipalities of Ciénaga and Santa Marta in the department of Magdalena (Colombia). The thrips were collected from inflorescences with a phenological development at stage 65 from the middle of the tree crown by the method of shaking/hitting (García Lozano, 2010).

The thrips preserved in 70% ethanol were brought to the Entomology Laboratory of the Caribia research center of Corporación Colombiana de Investigación Agropecuaria (AGROSAVIA), in Zona Bananera (Magdalena, Colombia) and were examined under the Nikon stereoscope with 80X magnification for separation at the morphospecies level. Adult thrips were mounted in Canada balsam medium and dried at 45 °C for 72 hours. The specimens were identified with the taxonomic keys of Mound & Marullo (1996), Mound & Minaei (2007), Mound & Okajima (2015) and Cavalleri et al. (2016), using an Eclipse Ci-L phase contrast microscope (Nikon, Tokyo, Japan). Thrips sampling was carried out according to the permit for the collection of wild species for scientific research as modified by resolution 1466 of 2014 granted by ANLA to AGROSAVIA. The collected samples are preserved at the National Taxonomic Collection of Insects, Luis María

***Dolichothrips indicus* (Hood)**

Material examined. Colombia, Magdalena, Ciénaga (10.98664, -74.20119), Ciénaga (11.02033, -74.21411) and Santa Marta (11.17822, -74.20777). The specimens were captured by tapping of panicles. Col. F. Carrascal, C. Brochero, J.C. Gómez.

Description of the material examined. Antenna with 8 segments; segment III (Fig. 1a, b) and VI (Fig. 1c, d) with three and four sense cones respectively. Head longer than wide. Basantra (prosternum sclerites) longer than wide (Fig. 1e). Pronotum with complete epimeral sutures, with structuring lines present near the anterior and posterior margins (Fig. 1f). Lateral setae of mesonotum finely acute or blunt, 12 to 30 µm long; mesopresternum divided, forming two triangles; metanotum with reticulation (Fig. 1g). Bell-shaped pelta (Fig. 1h). Fore wing with a series of duplicated cilia in the apical region of the posterior margin (Fig. 1i). Dark brown coloration; middle and posterior tibia brown, with variably yellow apex, posterior femur brown; all tarsi yellowish. Abdominal tergites III-VII with two pairs of sigmoid setae (Fig. 1j). *Dolichothrips indicus* is characterized by having an elongated mouth cone, basantra is longer than it is wide (Fig. 1e), and the mesopresternum forms 2 lateral triangles (Fig. 1g) (Mound & Matsunaga, 2017).

Dolichothrips indicus is a thrips species with a wide range of plant hosts and widespread in tropical countries, however, there is no record as a pest for any production system (Calvert et al., 2019). In Australia, the species has a low economic impact and negligible overall risk as a pest on flowers of *Litchi chinensis* Sonn. (Sapindaceae) (Plant Health Australia, 2011).

The association of *D. indicus* with the inflorescences of mango in Colombia should be considered in subsequent investigations that allow establishing aspects of the biology and feeding habits of this thrips and its relationship with "Azúcar" variety mango crop.

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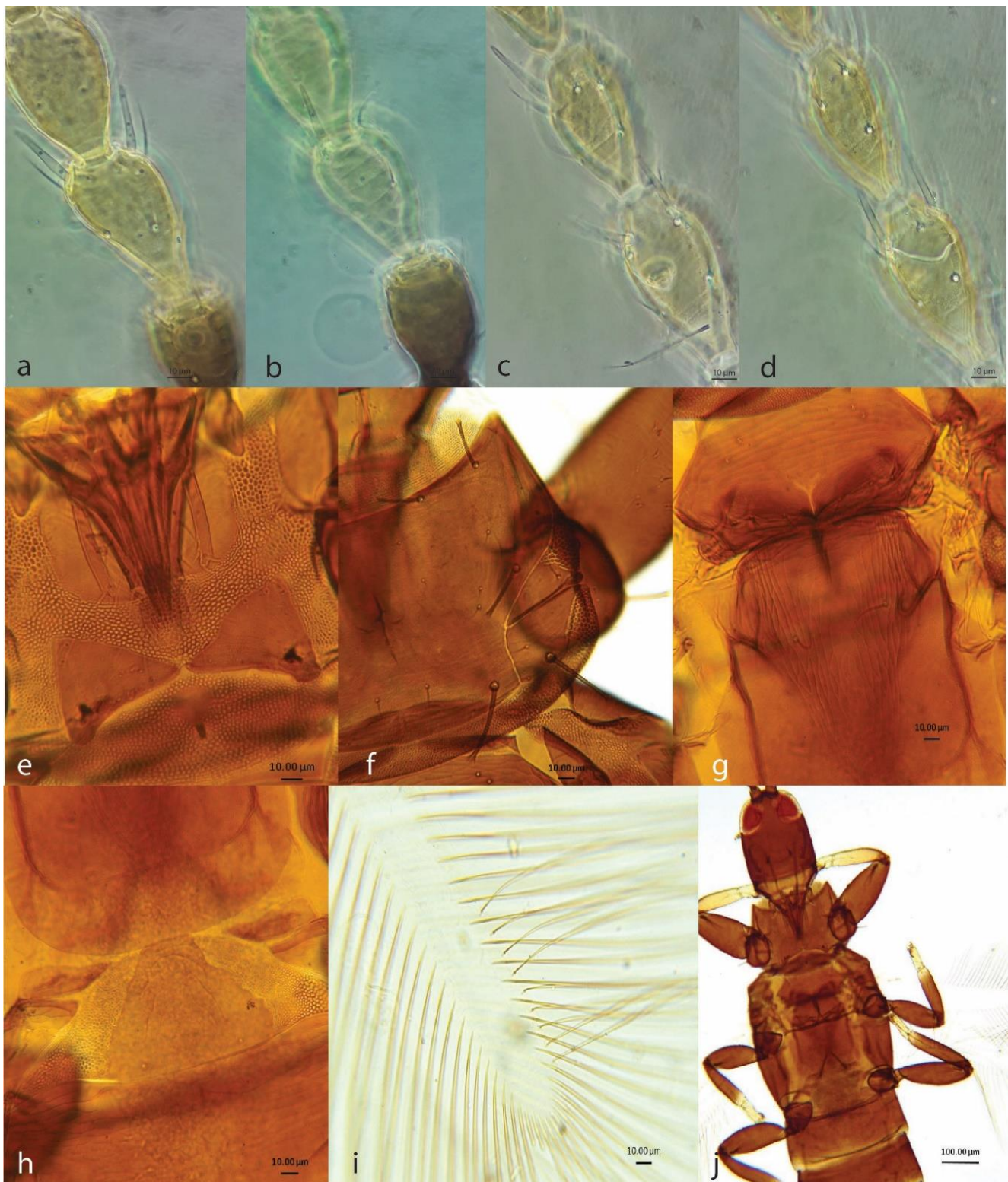


Fig. 1. *Dolichothrips indicus* female. a-b. Antennal segment III with sense cones. c-d. Antennal segment VI with sense cones. e. Prosternum sclerites. f. Epimeral suture. g. Mesonotum and metanotum. h. Pelta. i. Duplicate cilia of forewings. j. Dorsal view.

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