

OCCURRENCE OF *BREVIPALPUS OBOVATUS* DONNADIEU AND *BREVIPALPUS YOTHERSI* BAKER (ACARI: TENUIPALPIDAE) IN BASIL PLANTS IN SÃO PAULO, BRAZIL

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Abstract

Basil, *Ocimum basilicum* L., is a shrubby plant native from northern India. The literature is scarce in relation to arthropods associated with that plant species. Plants of non commercial cultivation were collected in different regions of the State of São Paulo, such as Botucatu, Campinas, São Paulo, São Pedro and Serra Negra municipalities. Mites recovered from *O. basilicum* were mounted on permanent slides in Hoyer's medium. In these plants were identified specimens of *Brevipalpus obovatus* Donnadieu and *Brevipalpus yothersi* Baker (Tenuipalpidae). This is the first report of both species on *O. basilicum* plant in São Paulo.

Keywords: Tenuipalpid mites, flat mites, *Ocimum basilicum*, Lamiaceae

Resumo

Ocorrência de *Brevipalpus obovatus* Donnadieu e *Brevipalpus yothersi* Baker (Acari: Tenuipalpidae) em plantas de manjeriço no Estado de São Paulo, Brasil

O manjeriço, *Ocimum basilicum* L., é uma planta arbustiva originária do norte da Índia. A literatura é escassa em relação aos artrópodes associados à essa espécie vegetal. Foram coletadas plantas de cultivo não comercial em diferentes regiões do estado de São Paulo, como Botucatu, Campinas, São Paulo, São Pedro e Serra Negra. Os ácaros encontrados em *O. basilicum* foram montados em lâminas permanentes em meio de Hoyer. Nessas plantas foram identificados espécimes de *Brevipalpus obovatus* Donnadieu e *Brevipalpus yothersi* Baker (Tenuipalpidae). Este é o primeiro relato de ambas as espécies em plantas de *O. basilicum* no Estado de São Paulo.

Palavras-chaves: ácaros tenuipalpídeos, ácaro plano, *Ocimum basilicum*, Lamiaceae

Basil, *Ocimum basilicum* L. (Lamiaceae), is a shrubby plant native from northern India and is popularly used as a digestive stimulant, antispasmodic and antiseptic (Martins et al. 1998). The implementation of this species in Brazil has intensified with the arrival of Italian immigrants, who in their culinary tradition, basil has a very important role (REIS et al., 2007).

Basil is produced in Brazil mainly by small producers and is focused on commercialization of aromatic green leaves (MAY et al. 2008). However, in some northeastern region there are crops in more focused scale for essential oil production.

Plants of no commercial cultivation were collected in different regions of the State of São Paulo, such as Botucatu, Campinas, São Paulo, São Pedro and Serra Negra municipalities. The plants were transported to Acarology Laboratory of Biological Institute, in Campinas (SP) and extracted the mites by immersion in water more detergent for 10 minutes. Then, the suspension was passed through a sieve with a mesh of 0.038 mm and the retained material was transferred to glass vials containing 70% alcohol. The mites were mounted in permanent slides in Hoyer's medium. Part of the collected specimens were deposited in the Biological Institute, Acarology Laboratory Mite Reference Collection (authorization ICMBio 35919-1).

We found the mites *Brevipalpus obovatus* Donnadieu (Figure 1A) and

Brevipalpus yothersi Baker on plants of *O. basilicum* (Figure 1B). Both species were recovered in all sampled sites. This is the first record of *B. obovatus* and *B. yothersi* on basil in the state of São Paulo. The appointment of *B. yothersi* was based on the work of BEARD et al. (2015), which repositions the species, separating it as a synonym of *B. phoenicis* (Geijskes).

PODEROSO et al. (2009) first reported the occurrence of *B. obovatus* on *O. basilicum* in São Cristóvão, Sergipe. Approximately 80% of the plants were infested and seedlings presented plant size reduction and shriveling of the leaf blade. The same symptoms were observed in plants collected in São Paulo and São Pedro.

CHILDERS et al. (2003) listed host plants which consisted of *B. obovatus* monocotyledonous, dicotyledonous, annual and perennial plants, which include those of agricultural importance, medicinal, ornamental or food. Still, they recorded 25 genera of plants belonging to 18 families that are exclusive hosts of *B. obovatus*. In Brazil, *B. obovatus* exhibits at least nine host plants (TRINDADE, CHIAVEGATO, 1994). Studies on the biology and ecology of *B. obovatus* are rare, except in passion fruit (NORONHA, CAVALCANTE, 2011). These authors mention that the yellow passion fruit is a suitable host for the development and reproduction of *B. obovatus*. In the case of *B. yothersi* there is no data available in the literature on bioecology, although was collected in Caricaceae, Rubiaceae

and Rutaceae species in the Americas and Hawaii (BEARD et al., 2015). *Brevipalpus obovatus* was collected in basil in Costa Rica (AGUILAR, MURILO, 2008) and in Brazil, in the state of Sergipe and the Federal District (NAVIA et al., 2013). *Brevipalpus juncus* Akbar & Khalid and *Brevipalpus amicus* Chaudhri were recorded in basil in Pakistan (AKBAR, KALID, 1999; HASAN et al., 2004), while *Brevipalpus californicus*

(Banks) was recorded in the same plant species in Thailand (NAMVONG, CHONGRATTANAMETEEKUL, 2015).

This is the first report of *B. yothersi* infesting plants of *O. basilicum* and *B. obovatus* that plant species in the state of São Paulo. More detailed studies are needed for the knowledge of these species and possible viruses transmitted by *Brevipalpus* species in basil.

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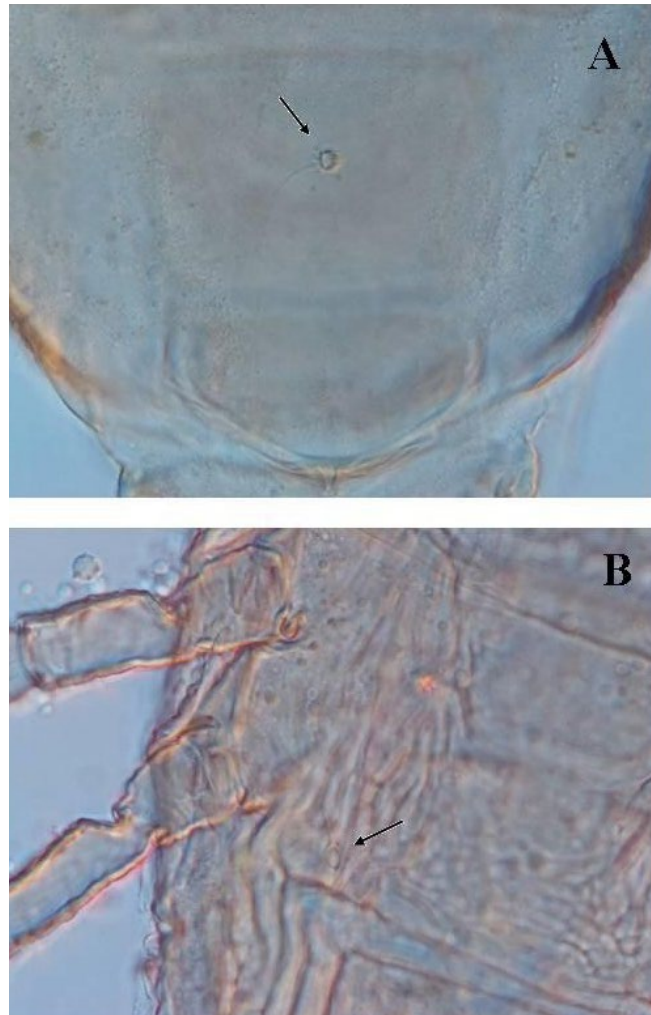


Figure 1. Detail of spermatheca apparatus of *Brevipalpus obovatus* (A) and *Brevipalpus yothersi* (B).