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Notes and Comments

Ipomoea (Convolvulaceae) plants as new hosts of *Tetranychus ludeni* (Acari: Tetranychidae)

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Plants of the Convolvulaceae family are included in 60 genera and approximately 1,930 species described in tropical and temperate regions (Wood et al., 2020) with 24 genera and about 400 species in Brazil (Simão-Bianchini et al., 2022). Convolvulaceae species are mainly weeds, but also with food, medicinal and ornamental importance (Simão-Bianchini et al., 2022). These species are annual or perennial herbaceous, climbing plants, vines, shrubs or small trees (Wood et al., 2017) growing in wet or dry places and often near roads, forest margins, swamps and rivers (Wood et al., 2020). *Ipomoea* (Convolvulaceae) species are widely distributed in the phytogeographic domains of the Amazon, Atlantic Forest, Caatinga, Cerrado, Pampa and Pantanal of Brazil (Wood et al., 2017). Some of these plants reduce yield in different crops such as corn and sugarcane, being a priority for control at the end of the cropping cycle (Bhullar et al., 2012).

Tetranychus ludeni Zacher, 1913 (Acari: Tetranychidae), a polyphagous species in the tropics and with a worldwide distribution, infests more than 250 plant species (Gotoh et al., 2015). This mite occurs in the field during most of the year, especially in hotter and drier seasons (Silva et al., 2017). Damage by *T. ludeni* is due to suction of leaf content, characterized by small yellowish spots, followed by necrotic spots on the entire leaf that dry and fall (Soares et al., 2014), reducing the photosynthetic area (Soares et al., 2012).

Density, distribution and damage by pests vary with host plants (Castro et al., 2018, 2019). The dispersion and survival of *T. ludeni* in alternative hosts must be studied. The objective is to register non-cultivated plants of the Convolvulaceae family as new hosts for this mite in the region of Diamantina, Minas Gerais state, Brazil.

Plants of the genus *Ipomoea* (Convolvulaceae) with leaf injuries by mites were observed in November 2021 (Figure 1) in the olericulture sector of the "Universidade Federal dos Vales do Jequitinhonha e Mucuri (UFVJM)" in Diamantina, Minas Gerais state, Brazil (18° 11' 48.23" S and 43° 34' 8.74" W, 1384 m.a.s.l.). Specimens of these plants were collected and its photographs sent to Dr. John Wood of the Department of Plant Sciences, University of Oxford, South Parks Road, Oxford, OX1 3RB, UK. The material collected was deposited at the Herbarium of Biological Sciences of the UFVJM. Adults of the mite were collected and compared with specimens previously identified by Dr. Gilberto José de Moraes, taxonomist at the "Luiz de Queiroz" School of Agriculture (ESALQ) at the University of São Paulo (USP) in Piracicaba, São Paulo, Brazil.

Ipomoea alba L., *Ipomoea cairica* L., *Ipomoea hederifolia* L., *Ipomoea indica* Burm. and *Ipomoea purpurea* L., weeds of the Convolvulaceae family, were identified. The mite formed web colonies around the attacked plant, where its juveniles, adults and eggs were observed. Damage on plants of the genus *Ipomoea* started in the oldest leaves and then throughout the entire plant, including the youngest leaves, similar to that reported for this mite on *Ipomoea batatas* L. (Soares et al., 2012). The feeding of the mite causes small yellowish spots, followed by necrotic spots all over the leaves that dry and fall, potentially killing the plant (Soares et al., 2014).

The mite was identified as *Tetranychus ludeni* Zacher, 1913 (Acari: Tetranychidae) damaging plants of *Ipomoea* spp. (Figure 1). The identification of this mite on these plants contributes to explain its permanence in the field, increasing its damage potential in cultivated plants (Soares et al., 2012). *Ipomoea alba*, *I. cairica* and *I. indica* are important as ornamental plants and also in the medicine and food, the latter for *I. alba* (JBRJ, 2020). This record increases the number of *T. ludeni* host plants, which include *Abelmoschus esculentus* L. (Malvaceae), *Citrullus lanatus* Thunb. (Cucurbitaceae), *Citrus limonia* L. (Rutaceae), *Gossypium hirsutum* L. (Malvaceae), *Pelargonium hortorum* L.H. Bailey (Geraniaceae), *Prunus domestica* L. (Rosaceae), *Physalis peruviana* L. and *Solanum melongena* L. (Solanaceae) (Mendonça et al., 2011; Soares et al., 2014; Valadares et al., 2021).

Mite injuries reduced the photosynthetic area and vegetative growth of *Ipomoea* plants (Castro et al., 2019), whose species can be weeds in agricultural crops and with ecological impact in Brazil and in many countries, among the 10 most problematic ones (Rai and Singh, 2020). *Ipomoea* spp. infest crop plants including beans, corn, soybeans, sugarcane and winter cereals, hosting

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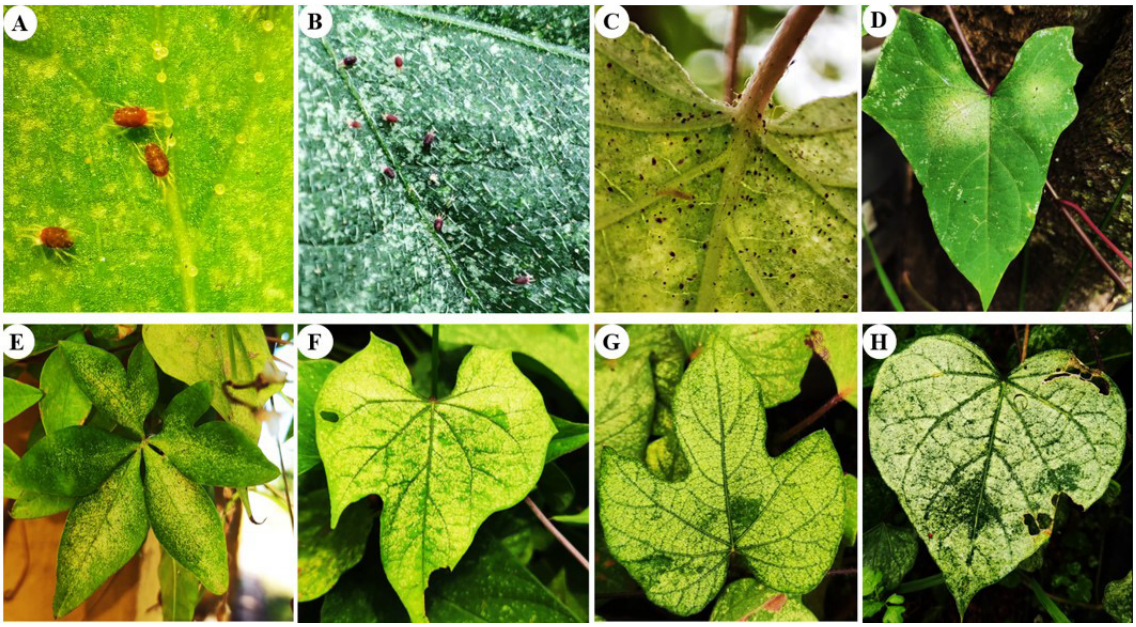

Figure 1. *Tetranychus ludeni* Zacher, 1913 (Acari: Tetranychidae) (A) and populations of this mite on the adaxial (B) and abaxial (C) parts and damage on *Ipomoea alba* (D), *Ipomoea cairica* (E), *Ipomoea hederifolia* (F), *Ipomoea indica* (G) and *Ipomoea purpurea* (H) leaves in Diamantina, Minas Gerais state, Brazil.

insects and diseases and decreasing harvesting efficiency, productivity and quality (Bhullar et al., 2012; Galon et al., 2021). The management of weeds of the genus *Ipomoea* spp. is based on herbicides, mainly those with the active principles atrazine, metribuzin and diuron (Kuester et al., 2015). However, intensive use of these products is increasing weed resistance and dependence by producers (Agostineto et al., 2016), increasing the need of jointly integrated weed and mite management strategies.

Tetranychus ludeni is reported for the first time feeding and damaging *Ipomoea alba, Ipomoea cairica, Ipomoea hederifolia, Ipomoea indica* and *Ipomoea purpurea* of the Convolvulaceae family. This record is important to understand the mechanisms affecting the survival, dispersion, establishment and damage by this pest in cultivated areas.

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