



Short Communication

Record of *Conotelus luteicornis* Erichson (Coleoptera: Nitidulidae) in passion fruit vine in Acre state, Brazil

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ABSTRACT

The first record of *Conotelus luteicornis* Erichson (Coleoptera: Nitidulidae) was made in a commercial passion fruit vine planting in the municipality of Senador Guiomard, Acre state, Brazil. The insects were found inside the flowers where larvae and adults feed, causing early abortion and, consequently, losses in production. Therefore, the first record of this species is made in the Brazilian Amazon. Researches related to damage level, population dynamics, prospecting for natural enemies, and control methods are strongly recommended since this nitidulid is an insect with high harmful potential to the passion fruit vine culture in the Amazon region.

Keywords: Amazon; Cucujoidea; Cillaeinae; Malpighiales; Passifloraceae

INTRODUCTION

Originating in the tropical region of South America, passion fruit (*Passiflora* spp.; Passifloraceae) is widely cultivated and commercialized in Brazil, with around 150 native species registered in the country (Cervi *et al.*, 2010). In Amazon, the most cultivated species is the yellow or sour passion fruit, *Passiflora edulis* Sims (Passifloraceae), and its fruits are used mainly for the production of juice, sweets, jellies, ice creams and other culinary products (Morais *et al.*, 2016). The intense yellow or orange color of its pulp is due to carotenoid pigments, which act as antioxidants in the prevention of diseases and aging processes (Carvalho *et al.*, 2015). Acre state, Brazil has an area of 138 ha cultivated with passion fruit, production of 1,068 tons and average yield of 8.5 t ha⁻¹. The largest planted areas are found in the municipalities of Senador Guiomard, Rio Branco and Plácido de Castro, which together account for 67% of the State's planted area (IBGE, 2020).

The social aspect of passion fruit culture has great relevance since it is a vine fruit cultivated predominantly by family producers in small areas (from 1 to 4 ha) and

promotes job creation and workforce stability in the rural environment (Souza *et al.*, 2002). However, in Brazil, the cultivation of this fruit tree is surrounded by phytosanitary problems, causing economic losses for producers.

Passion fruit growing is associated with a numerous complex of insects and mites, which can cause severe economic damage and compromise this agricultural activity, depending on its population levels. Defoliating caterpillars and sucking bugs are the main pests of passion vine in Brazil (Fadini & Santa-Cecília, 2000; Picanço *et al.*, 2001; Aguiar-Menezes *et al.*, 2002; Lunz *et al.*, 2006).

This work aimed to determine the pest species responsible for the abortion of flowers in a commercial passion fruit planting in Acre state, Brazil.

MATERIAL AND METHODS

In August 2019, a technical visit was carried out to a commercial passion fruit plantation of cultivar BRS Yellow Giant, with high flower abortion rate, located in the municipality of Senador Guiomard, Acre state, Brazil (09°58'39.9"S; 67°58'38.0"W). The area was grown in 2018 and the plants received the cultural treatments

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recommended for the crop, with the application of phytosanitary products every 15 days.

In the morning, 10 flowers were collected during a random walk-through at the plantation. The flowers were opened and it was verified the presence of small coleopterans inside them. The insects were collected, placed in a glass bottle containing 70% alcohol, and sent to a Nitidulidae's specialist, one of this work's co-authors, for identification at the lowest possible taxonomic level. The identification was performed by comparing the external morphology of the specimens collected in the state of Acre, with the holotype deposited in Museum of Natural History of the Humboldt University, Berlin, Germany.

RESULTS AND DISCUSSION

The beetles were identified as *Conotelus luteicornis* Erichson (Coleoptera: Nitidulidae) (Figure 1) based on the comparison with the holotype specimens. The adult measures approximately 4.0 mm in length with an elongated dark-colored body (Potin *et al.*, 2016). Antennae 11-segmented and club with three antennomeres inserted between the eyes and the mandible base. Pentamerous tarsus, with the fourth joint shortened. Reduced elytra, brachelytry type, exposing the last five abdominal sclerites. It presents the prothorax quite detached of the body, bigger than the mesothorax and the metathorax, which are covered by the wings (Habeck, 2002).

The genus *Conotelus* includes 25 beetle species native to the American continent (Williams *et al.*, 1988). Nitidulid species commonly feed on decaying fruits and fermented juices from plants and fungi, but some live on flowers (Arnett Junior *et al.*, 2002). *Conotelus* species have already been recorded in flowers of *Monotagma plurispicatum* (Koern.) K. Shum. (Marantaceae) and passion fruit (*Passiflora* sp.; Passifloraceae) in the Amazon (Albuquerque, 1974; Potin *et al.*, 2016), *Calystegia sepium* (L.) in the United States (Price & Young, 2006), passion fruit in Hawaii (Nishida, 1957), cedar fruits (*Cedrela odorata* L.; Meliaceae) in Argentina (Velasquez, 1984), *Hibiscus* spp. (Malvaceae) in Australia (Lachance *et al.*, 2001), tomatoes and cloves in Minas Gerais State, Brazil (Haro, 2011).

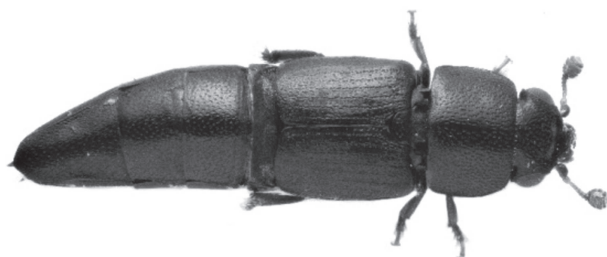


Figure 1: *Conotelus luteicornis* Erichson (Coleoptera: Nitidulidae) (B& adulto) in dorsal habitus. (Picture: Jiří Hájek).

Conotelus sp. associated with passion fruit flowers in Rondônia state, Brazil was reported by Potin *et al.* (2016). Azevedo *et al.* (2005) registered another nitidulid species, *Brachypeplus* sp. (Coleoptera: Nitidulidae) infesting passion fruit flowers in Ceará state, Brazil. This reinforces the fact that passion fruit vine is a preferred host plant for feeding some beetles species in this family.

According to producers' reports in Rondônia state, the economic loss resulting from the attack of these coleopterans in commercial passion fruit plantations can reach up to 80%. Young flowers and fruits can be aborted in high infestations of these nitidulids in the culture and the fruits that do not fall are blackened and deformed. Besides, injuries caused by these insects fed on passion flowers can serve as a gateway for opportunistic pathogens (Potin *et al.*, 2016).

CONCLUSION

This work records *C. luteicornis* associated with passion fruit cultivation in the Brazilian Amazon for the first time. Researches on damage level, population dynamics, prospecting for natural enemies, and control methods are strongly recommended since this nitidulid is an insect with high harmful potential to the passion fruit culture in the Amazon region.

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