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Occurrence of *Euscepes postfasciatus* (Coleoptera: Curculionidae) in *Ipomoea batatas* in Diamantina, Minas Gerais, Brazil

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ABSTRACT

Sweet potato, *Ipomoea batatas* (L.) Lam (Convolvulaceae), is an essential crop for food security in developing countries. *Euscepes postfasciatus* (Fairmaire) (Coleoptera: Curculionidae) is one of the main pests of *I. batatas* in tropical and subtropical regions. It feeds on the tuberous roots of *I. batatas* and induces perforations tunnel-shaped with excrement. The objective of this study was to register, for the first time, the occurrence of *E. postfasciatus* in *I. batatas* in the municipality of Diamantina, Minas Gerais, Brazil. Individuals of *E. postfasciatus* were found in the larval, pupal and adult stages feeding on the roots, in the genotypes, Brasilândia Branca, Rubisol, UFVJM01, UFVJM02, UFVJM03, UFVJM04, UFVJM08, UFVJM18, UFVJM91, UFVJM291 and UFVJM526 in a greenhouse at the Universidade Federal dos Vales do Jequitinhonha e Mucuri (UFVJM). *Euscepes postfasciatus* injuries formed superficial and deep galleries with the presence of excrement and unpleasant odor. The record of *E. postfasciatus* in *I. batatas* in the municipality of Diamantina is important to develop local strategies for integrated pest management of the crop in the region.

Keywords: weevil; food security; sweet potato.

Sweet potato, *Ipomoea batatas* (L.) Lam (Convolvulaceae) is an essential crop for food security in developing countries (MOLLINARI et al., 2020; YANG et al., 2017). It is cultivated globally between 40° North and 40° South latitude, at altitudes that reach up to 2,700 m. This crop is important in the highlands of Minas Gerais, in the Serra do Espinhaço region (location of Diamantina), which comprises the only "globally important agricultural heritage systems" (GIAHS) in Brazil. A title granted by the United Nations Food and Agriculture Organization (FAO/UN) (FAO, 2020). Studies have been conducted in this GIAHS, especially to improve the agri-food systems.

Ipomoea batatas crops are affected by insect pests worldwide (JOHNSON; GURR, 2016). *Euscepes postfasciatus* (Fairmaire) (Coleoptera: Curculionidae), in larval and adult stages, is one of the main pests of *I. batatas* in tropical and subtropical regions (HUGHES et al., 2009). This insect originates from the Caribbean, is considered a cosmopolitan species, present in South and Central America, the West Indies/Antilles and areas of the North Atlantic, North and South Pacific and Japan (KATSUKI et al., 2012). In Japan, the presence of *E. postfasciatus* on the island of Okinawa has resulted in quarantine regulations that prohibit the transport of host plants from that island to the continental area, free of the insect (MENEZES, 2002; SATO et al., 2010). In Brazil, *E. postfasciatus* has been reported in the Northeast: states of Alagoas, Bahia, Paraíba, Pernambuco and Sergipe, in the Midwest: Distrito Federal and Goiás (Ipameri), and in the Southeast: Minas Gerais (Uberlândia), Rio de Janeiro and São Paulo (Tapiraí and Jaboticabal)

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(BLANK et al., 2001; BOTTEGA et al., 2009; DUARTE et al., 2019; FRANÇA; RITSHEL, 2002; GBIF, 2021; MENEZES, 2002; WANDERLEY et al., 2004).

The objective of this work was to register, for the first time, the occurrence of *E. postfasciatus* in *I. batatas* in the municipality of Diamantina, Minas Gerais, Brazil. This record extends the geographic distribution of this species to the northeast region of the state of Minas Gerais.

Individuals of *E. postfasciatus* were found in the larval, pupal and adult stages (Fig. 1a, b and c) feeding on the tuberous roots of *I. batatas* in the germplasm bank of the Universidade Federal dos vales do Jequitinhonha e Mucuri (UFVJM), in Diamantina. Four *E. postfasciatus* adult individuals were deposited in the reference entomological collection of the UFVJM. The genotypes attacked were Brasilândia Branca, Rubisol, UFVJM01, UFVJM02, UFVJM03, UFVJM04, UFVJM08, UFVJM18, UFVJM91, UFVJM291 and UFVJM526, cultivated in the soil of a greenhouse, between coordinates: 18°15' South and 43°36' West, at 1,394 m. The period of occurrence of the pest was from January to April 2020.

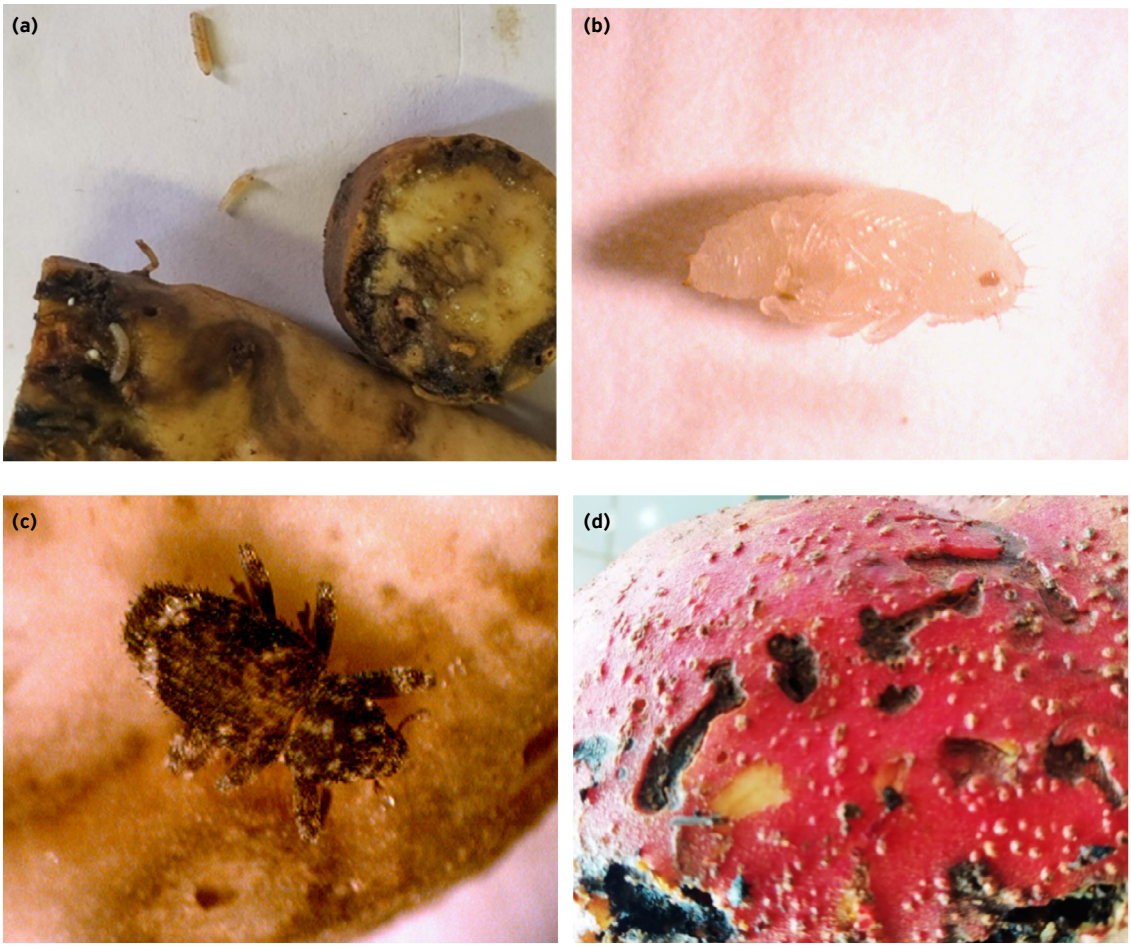

Figure 1. *Euscepes postfasciatus* (Fairmaire) (Coleoptera: Curculionidae); (a) Larvae; (b) Pupa; (c) Adult; (d) Damage caused by *Euscepes postfasciatus* in *Ipomoea batatas* L. (Solanaceae).

Euscepes postfasciatus induces perforations tunnel-shaped with excrement when feeding on the tuberous root of *I. batatas*, the main commercial product of this plant (Fig. 1d). The attack causes a characteristic and unpleasant odor due to the production of sesquiterpenes by the plant in response to pest (SATO et al., 1978). The presence of *E. postfasciatus* can also facilitate the proliferation of damage caused by fungi and bacteria that make the product unfeasible for the market (SHERMAN; TAMASHIRO, 1954). Thus, small infestations can make the tuberous roots unsuitable for consumption.

The record of *E. postfasciatus* feeding on *I. batatas* in the municipality of Diamantina, Minas Gerais, Brazil, is important to develop local strategies for integrated pest management for the crop in the region. The selection of resistant genotypes to attack, prospecting for natural enemies and rotation with crops not susceptible to *E. postfasciatus* are control options. There are no registered insecticide products for *E. postfasciatus* in Brazil.

AUTHORS' CONTRIBUTIONS

Conceptualization: Santos, M.M.; Soares, M.A.; Silva, I.M. **Methodology:** Santos, M.M.; Soares, M.A.; Cabral, M.J.S. **Writing – original draft:** Santos, M.M.; Soares, M.A.; Silva, I.M.; Cabral, M.J.S.; Faustino Júnior, W. **Writing – review & editing:** Costa, M.R.; Soares, M.A.

AVAILABILITY OF DATA AND MATERIAL

All data generated or analyzed during this study are included in this published article.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

ETHICAL APPROVAL

Not applicable.

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