First record of *Phidotricha erigens* (Lepidoptera: Pyralidae) feeding on *Furcraea* spp. in Colombia

Nancy Yoohana Grisales Vásquez\(^1\), Luz Fanny Orozco Orozco\(^2*\), Carlos Eduardo Giraldo Sánchez\(^4\), John Alexander Pulgarín Díaz\(^5\)

10.1590/0034-737X202168060015

**ABSTRACT**

Fique (*Furcraea* spp., Agavaceae) is source of natural fiber commonly used for packing in Colombia. However, the crop faces phytosanitary limitations that affect production, with scarce information published in this regard. In an *ex situ* biological collection of *Furcraea* spp. larvae of an unidentified species of Pyralidae were found feeding on the reproductive structures of the plants. Then, the aim of this work was to identify and report the species and damage of a potential *Furcraea* spp. pest in Colombia. The study done in the Research Center La Selva of AGROSAVIA, in the Municipality of Rionegro Antioquia, Colombia (6°07´46”N; -75°24´55” W; 2,100 m elevation). The immature stages were collected from infested bulbils and capsules of *Furcraea* plants and reared under laboratory conditions (17 °C and 65% relative humidity) until adults emerge. The species was identified as *Phidotricha erigens* Ragonot, 1888 using specialized keys for larva and adult. These larvae adversely affect the sanitary quality of fique seeds, which could affect the expansion of cultivated areas. This paper presents a description of some characters useful for identifying the species in the field.

**Keywords:** Agavaceae; bulbil; damage; fique; natural fiber.

**INTRODUCTION**

Historically, natural fibers have been used in the production of clothing, as well as for housing and packing material. In the 1950s, non-biodegradable synthetic fibers displaced them, but inadequate final disposition of non-biodegradable fibers eventually became an important source of contamination at the global level (Barnes *et al*., 2009). For this reason, the use of biodegradable alternatives derived from natural fibers is promoted worldwide. In Colombia, Fique (Agavaceae: *Furcraea* spp.) is the natural fiber most commonly used for packing (Hidalgo *et al*., 2015; Manimaran *et al*., 2018); however, this crop faces phytosanitary limitations that affect its production (Linares *et al*., 2008; Ovalle *et al*., 2018).

A number of insects are reported to feed on Agavaceae’s inflorescences and bulbils worldwide, (Velázquez *et al*., 2010). *Furcraea* spp. in Colombia are attacked by *Diaspis bromelia* Kern, 1978 (Hemiptera: Diaspididae) feeding on leaves and roots; *Batrachedra rixator* Hodges, 1966 (Lepidoptera: Batrachedridae) feeding on leaves (Pérez, 1964); and *Strategus fascinus* Burmeister, 1847 (Coleotera: Scarabaeidae) feeding on roots (Neita & Brett, 2009). In 1942 specimens of an unidentified Pyralidae (Lepidoptera) were collected from Fique, and these are deposited in the Museo Entomológico Francisco Luís Gallego (MEFLG) of Universidad Nacional de Colombia-Sede Medellín. The objective of this study is to identify and report the species and damage of a potential *Furcraea* spp. pest in Colombia.

**MATERIAL AND METHODS**

In the *ex situ* biological collection of Fique and related species (*Furcraea cabuya* Trel, *Furcraea foetida* (L.) Haw, *Agave sisalana* Perrine, *Furcraea* spp. and *Agave* spp.).
First record of *Phidotricha erigens* (Lepidoptera: Pyralidae) feeding on *Furcraea* spp. in Colombia

Rev. Ceres, Viçosa, v. 68, n. 6, p. 624-627, nov/dec, 2021

Established in the Research Center La Selva of AGROSAVIA, in the Municipality of Rionegro Antioquia, Colombia (6°07´46"N; -75°24´55" W; 2,100 masl), we found some unidentified Pyralidae larvae feeding on the reproductive structures of the plants. We collected infested bulbils and capsules of *Furcraea* plants, they were taken to the entomology laboratory of the Research Center, to identify and describe their immature stages.

Immature stages were reared on bulbils of the host plant at 17 °C and 65% relative humidity until adults emerge. The adults were mounted and photographed under a stereomicroscope (Leica S9, Germany) to compare their wing characters. Subsequently, the specimens were sexed, with males recognized by their hair-like setae on the antennae (Ragonot, 1888; Velázquez et al., 2010). We preserved last instar larvae in Kahle’s solution and identified them following Solis (2006). The specimens were identified as *Phidotricha erigens* Ragonot, 1888, both by the morphological characters of the larvae (Solis, 2006), as well as by the wing patterns of the adults (Ragonot, 1888; Velázquez et al., 2010). Furthermore, specimen identification was confirmed by Dr. Vitor O. Becker, researcher at the Scientific Institute Uiraçu, Camacan, BA Brazil.

**RESULTS AND DISCUSSION**

*Phidotricha erigens* is a widely distributed polyphagous species (Cock & Burris, 2013), whose larvae have been reported in crops, such as corn, cotton, ginger, loquat, mango, melon, orange, sweet granadilla,

---

**Figure 1:** *Phidotricha erigens* Ragonot 1888. **A.** Recently laid eggs. **B.** - **C.** Eggs. **D.** Larvae in last instar. **E.** Pupa. **F.** Male antenna. **G.** Life female adult. **H.** Mounted male. **I.** Damage in a bulbil, red arrow and white circles denote the larva and its feeding holes. **J.** Damage in a capsule. Figure A- F scale bars = 1 mm. Figure G - J scale bars = 1 cm.
CONCLUSION

This work records for the first time the presence of *P. erigens* as a potential insect pest in the *Furcraea* spp. productive system.

ACKNOWLEDGMENTS, FINANCIAL SUPPORT AND FULL DISCLOSURE

We extend our most gratitude to Clara Inés Medina, Maria Victoria Restrepo, Carlos Velasquez, and the Vitor Becker (Scientific Research Institute Uiraçu, Camacan, BA Brazil). This work belongs to the project “Development of technological bases to establish a breeding program for the cultivation of *fique* (*Furcraea* spp.) in the collection of the research center C.I. La Selva”, funded by Corporación Colombiana de Investigación Agropecuaria – AGROSAVIA, Ministerio de Agricultura y Desarrollo Rural (MADR); also, the Sistema de Investigación y Desarrollo, of the Universidad Católica de Oriente - UCO, also funded this work. There is no conflict of interest between the authors in the publication of this work.

REFERENCES


