

# First record of *Aleurodicus pseudugesii* Martin (Hemiptera: Aleyrodidae) on single assai palm in Brazil<sup>1</sup>

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## ABSTRACT

The single assai palm (*Euterpe precatoria* Martius) is a plant of great socio-economic importance in the Amazon region. The increase in its cultivation under monoculture systems has intensified phytosanitary problems, especially regarding associated pest insects. In May 2023, a whitefly infestation was observed on the abaxial surface of leaflets of *E. precatoria* plants grown under semi-field conditions (shaded greenhouses) in Rio Branco, Acre state, Brazil. The whitefly was identified as *Aleurodicus pseudugesii*, representing the first record of the association between this aleyrodid species and *E. precatoria* in Brazil.

KEYWORDS: *Euterpe precatoria*, Arecaceae, Sternorrhyncha.

The Amazon region is home to several fruit-bearing species, among which two Arecaceae co-generic species stand out: the multi-stemmed assai palm *Euterpe oleracea* Martius and the single assai palm *Euterpe precatoria* Martius (Rabelo 2012, Oliveira et al. 2022). The current economic potential of these palms is centered on the exploitation of their stems (for heart of palm) and fruits, which are sold as fresh or frozen pulp, as well as in by-products (Oliveira et al. 2022). These products have seen an increasing market demand, expanding beyond the Amazon region and becoming popular in urban centers of other Brazilian states and internationally (Serra 2022).

In the Acre state, the production of assai palm fruits is predominantly derived from the extraction of *E. precatoria* (IBGE 2021) by riverine families, quilombolas and rubber tappers (Oliveira et al. 2022). The single assai palm is restricted to the North region and is predominantly distributed in the states of Amazonas, Rondônia and Acre (Cymeris &

## RESUMO

Primeiro registro de *Aleurodicus pseudugesii* Martin (Hemiptera: Aleyrodidae) em açazeiro-solteiro no Brasil

O açazeiro-solteiro (*Euterpe precatoria* Martius) é uma planta de grande importância socioeconômica na região amazônica. O aumento de seu plantio em regime de monocultivo tem intensificado problemas fitossanitários, especialmente no que tange a insetos-pragas associados. Em maio de 2023, foi observada infestação de moscas-brancas na face abaxial de folíolos de plantas de *E. precatoria* cultivadas em condição de semicampo (casas de sombreamento) em Rio Branco, Acre. A mosca-branca foi identificada como *Aleurodicus pseudugesii*, sendo o primeiro registro de associação dessa espécie de aleirodídeo com *E. precatoria* no Brasil.

PALAVRAS-CHAVE: *Euterpe precatoria*, Arecaceae, Sternorrhyncha.

Shanley 2005, Lorenzi 2010). As a native species with a fast growing market demand, there has been encouragement and public policies from the state government to cultivate single assai palm in Acre (Lunz et al. 2022). Thus, any issues that affect production, particularly in commercial plantations, will negatively impact this production chain in the Amazon region. Among these problems, phytosanitary issues are notable, especially concerning associated pest insects (Souza & Lemos 2004).

With the expansion of monoculture plantations, there has been an increase in the occurrence of pest insects associated with the crop, which can compromise production and limit cultivation (Santos et al. 2015). However, despite the socio-economic importance of this crop to the economy of Acre, knowledge about pest insects associated with *E. precatoria* in the state is still in its early stages (Santos et al. 2023). So far, only the palm black aphid *Cerataphis brasiliensis* (Hempel) (Hemiptera:

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Aphididae) (Lunz et al. 2011, Santos et al. 2023) and the coconut mealybug *Nipaecoccus nipae* (Maskell) (Hemiptera: Pseudococcidae) (Santos & Peronti 2023) have been recorded on the single assai palm in Acre. In this context, this study aimed to provide the first record of a whitefly species on single assai palm in Brazil.

In May 2023, a whitefly infestation was observed on the abaxial surface of leaflets of *E. precatória* plants cultivated under semi-field conditions (shaded greenhouses) and nursery in the experimental field of the Embrapa Acre, in Rio Branco, Acre state, Brazil (10°01'33.5"S; 67°42'23.0"W). The seedlings were planted in February 2021, and no phytosanitary products had been applied for pest control up to the time of observation.

Leaflets colonized solely by whiteflies (Figure 1) were removed, placed in airtight plastic bags, and transported to the entomology laboratory at the Embrapa Acre. Some of these were preserved and sent to taxonomist Dr. Gregory A. Evans (USDA/APHIS, Maryland, USA), for taxonomic identification of the whitefly species.

The whitefly associated with *E. precatória* was identified as *Aleurodicus pseudugesii* Martin (Hemiptera: Aleyrodidae), a species first recorded and described on coconut palms (*Cocos nucifera* L., Araceae) in Ecuador and Peru (Martin 2008). In Brazil, it has been reported on coconut palms in the states of Alagoas, Bahia, Ceará, Paraíba, Sergipe, Pará and Rio de Janeiro (Ferreira et al. 2011, Omena et al. 2012, Noronha et al. 2023). This species also has the following host plants: ice cream bean (*Inga edulis* Martius, Fabaceae), bamboo palm [*Dypsis lutescens* (H.Wendl.) Beentje & J. Dransf, Araceae], dieffenbachia (*Dieffenbachia amoena*

Bull., Araceae), biriba [*Rollinia mucosa* (Jacq.) Baill., Annonaceae], little grape (*Leea rubra* Spreng. ex Blum, Vitaceae), banana (*Musa* sp., Musaceae), African tulip tree (*Spathodea campanulata* P. Beau, Bignoniaceae) and cassava (*Manihot esculenta* Crantz., Euphorbiaceae) (Trindade et al. 2012).

Whiteflies have the potential to damage plants both directly, through sap suction that causes yellowing of leaves, branches and fruits (Barro et al. 2011, Liu et al. 2012), and indirectly, by transmitting viruses and injecting toxins. Additionally, they facilitate the development of opportunistic fungi (e.g., *Capnodium* spp., Capnodiaceae), which proliferate on the honeydew excretions of these whiteflies, leading to sooty mold (Lourenção et al. 2015). Although sooty mold was observed on *E. precatória* leaves, it was detected in small amounts and primarily on plants more heavily infested by *A. pseudugesii*.

The symptoms of *A. pseudugesii* infestation on single assai palms are identical to those reported by Wolff (2012) on coconut palms, characterized by intense leaf yellowing. According to Ferreira et al. (2011), this insect has a high reproductive capacity, and its infestation causes significant losses in coconut production. Therefore, studies aimed at estimating the level of damage and yield loss resulting from infestations by this whitefly on single assai palms are recommended.

The infestation of whiteflies on *E. precatória* plants under semi-field conditions occurred concurrently with the mealybug *N. nipae*, with leaflets containing both populations of *A. pseudugesii* and *N. nipae*. However, with the increase in the population of the palm black aphid *C. brasiliensis* on the plants, there was a marked decline in both the whitefly and mealybug populations in shaded greenhouses. Additionally, leaflets infested simultaneously by whiteflies and palm black aphids were not observed.

Regarding natural enemies, to date, only the parasitoid *Aleuroctonus marki* Hansson & LaSalle, 2003 (Hymenoptera: Eulophidae) has been recorded associated with *A. pseudugesii* nymphs on *C. nucifera* in the Pará state (Noronha et al. 2023).

This study presents the first record of *A. pseudugesii* on *E. precatória* in Brazil, enhancing the understanding of pest insects associated with the single assai palm in the Amazon region. Moreover, this finding constitutes the first record of this whitefly species in Acre.

Photo: Vanessa Vitória Leão da Silva



Figure 1. Leaflet of *Euterpe precatória* infested by *Aleurodicus pseudugesii* (Hemiptera: Aleyrodidae) in Rio Branco, Acre, Brazil.

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