



Molecular and morphological identification of *Brevipalpus* spp. (Acari: Tenuipalpidae) in *Citrus sinensis*, Costa Rica*

JACQUELINE ABARCA DURÁN^{1,2} & PAMELA MURILLO ROJAS¹

¹Laboratory of Acarology, Crop Protection Research Center (CIPROC), Agronomy School, University of Costa Rica, San José, Costa Rica

²Laboratory of obligate plant pathogens and their vectors (LaFOV), Research Center in Cellular and Molecular Biology (CIBCM) University of Costa Rica, San José, Costa Rica

✉ jacqueline.abarca@ucr.ac.cr; <https://orcid.org/0000-0002-9125-5820>

✉ pamela.murillorojas@ucr.ac.cr; <https://orcid.org/0000-0002-7823-7302>

*In: Zhang, Z.-Q., Fan, Q.-H., Heath, A.C.G. & Minor, M.A. (Eds) (2022) *Acarological Frontiers: Proceedings of the XVI International Congress of Acarology (1–5 Dec. 2022, Auckland, New Zealand)*. Magnolia Press, Auckland, 328 pp.

The genus *Brevipalpus* presents interspecific variability since its description. Therefore, the question arises as to which species are found on citrus in Costa Rica. Molecular and morphological techniques are complementary tools that allow a more precise identification at the species level, which is important, some species of the genus *Brevipalpus* have been associated with virus transmission, such as *Citrus leprosis virus*.

In this research, 16 orange (*Citrus sinensis* L.) farms were sampled, distributed in the Central, Northern Huetar, and Brunca Region. The species *Brevipalpus yothersi*, *B. azores*, *B. papayensis* were identified by morphological characters and a new species of this genus (*Brevipalpus* sp. nov.) was proposed, which will be named and described in a forthcoming paper. Partial sequencing of the COX 1 gene identified the species *B. yothersi*, *B. azores*, and *Brevipalpus* sp. nov. *Brevipalpus yothersi* was found in the Central and Brunca Regions, while *B. azores*, *B. papayensis* and *Brevipalpus* sp. nov. were found only in the Brunca Region.

Keywords: Molecular identification, flat mites, citrus, COX1, populations diversity