

NOTA DE PRENSA

Four new species of blood-feeding flies discovered in Andalusia during West Nile virus surveillance

- Researchers from the Doñana Biological Station (EBD-CSIC) and the University of Milan have identified four new species of tiny blood-feeding flies belonging to the genus *Leptoconops*, an insect group of importance for public and animal health.
- The discovery was made during mosquito surveillance campaigns carried out to monitor the presence of West Nile virus across Andalusia.



Images of the four newly described species of the genus *Leptoconops* from southern Spain. Clockwise from top left: *Leptoconops nigrithorax* sp. nov., *Leptoconops triangularis* sp. nov., *Leptoconops pseudoirritans* sp. nov., *Leptoconops communis* sp. nov.

Sevilla, 29 de junio de 2026. A research team led by the Doñana Biological Station (EBD-CSIC), in collaboration with the University of Milan, has identified **four new species of biting midges belonging to the genus *Leptoconops***. These tiny blood-feeding flies—measuring just two millimetres in length—were previously unknown to science.

While the discovery of new species is often associated with remote regions or poorly explored ecosystems, many species remain undescribed even in countries such as Spain. Because of their importance for public and animal health, **research on blood-feeding insects has expanded considerably in recent years.**

The discovery was made during mosquito sampling carried out by the Doñana Biological Station to monitor the presence of West Nile virus at sites across Andalusia. These surveys are part of the **ARBOPREVENT** project, funded by the “la Caixa” Foundation through its Health Research Call.

In total, the researchers **identified eight *Leptoconops* species, four of which—half of all the species detected—proved to be completely new to science.** The newly described species are *Leptoconops nigrithorax* sp. nov., *Leptoconops triangularis* sp. nov., *Leptoconops pseudoirritans* sp. nov. and *Leptoconops communis* sp. nov. Their discovery significantly expands current knowledge of this medically important group of insects and demonstrates that even well-studied regions such as Andalusia still harbour species yet to be discovered.

“This comprehensive sampling effort has, for the first time, revealed the presence of *Leptoconops* species in Andalusia,” says **Jordi Figuerola**, principal investigator of the project.



Trapping method used to capture blood-feeding insects. Credit: Dumitru Ionut Paun Tanase.

Tiny insects of public health importance

The genus *Leptoconops* comprises tiny blood-feeding flies. Like mosquitoes, females feed on blood by making small cuts in the skin of birds and mammals, including humans—a feeding strategy known as **telmophagy**.

The genus is found **throughout much of the Mediterranean region**, including Italy, France, Spain, Algeria, Morocco, Egypt and the Middle East. However, knowledge of its distribution remains incomplete, with some regions still largely unexplored. Although these insects are absent for most of the year, their **populations can increase intensely during spring**, when their bites become a significant nuisance.

“In Spain, these flies had previously been recorded from only a handful of locations and were mainly associated with sandy streambeds and salt marshes. However, our study shows that their distribution is much broader than previously thought,” explains **Mikel Alexander González**, lead author of the study.

Opening new research lines

This study demonstrates that even in extensively studied regions such as Andalusia, previously unknown species remain to be discovered. It also **highlights the value of disease surveillance programmes**, which not only contribute to the early detection of emerging pathogens but also generate valuable data that advance our understanding and conservation of biodiversity.

Co-author and PhD researcher **Dumitru Ionut Paun Tanase** concludes: “Capturing these insects will allow us to investigate their role in parasite transmission, as well as their ecology, helping to fill important gaps in our knowledge of this group.”

Referencia

Paun-Tanase DI, González MA, Magallanes S, Naro G, Epis S, Figuerola J (2026) Hidden diversity in Europe: new species and a revised taxonomy of the subgenus *Leptoconops* (*Leptoconops*) (Diptera, Ceratopogonidae). ZooKeys 1279: 201-239.

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