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Surveillance of Invasive Arthropods in Tropical Plant Imports at Frankfurt International Airport, Germany

Inhalt

The import of goods from tropical and exotic regions into Germany is increasing, alongside with the emergence of pest and vector species. To check the role of air cargo in these introductions, we started a systematic arthropod monitoring at Frankfurt International Airport, Germany's main hub for imported perishable goods, of incoming containers carrying fruits, vegetables and ornamental plants in March 2025.

Five times a year for periods of two to three weeks, randomly selected containers and cargo are sampled using a handheld vacuum device. Additionally, five insect traps are operated in strategic locations throughout the facility and checked daily. Collected arthropods are pre-sorted morphologically, with potential pest and vector species being separated. Potential vectors will later be screened for pathogens using next-generation sequencing, while all remaining specimens are promptly identified by COI barcoding.

So far, 2,979 arthropods have been collected, including mosquitoes, *Culicoides* biting midges and numerous Thysanoptera and Hemiptera. Although high-quality DNA sequences were obtained, COI barcoding often failed to identify robust similarities to database entries.

Surveillance at entry points offers an opportunity to better characterise pathways of pest and vector introduction. The data obtained can help prepare risk assessments for public health, livestock and agricultural systems, and adjust measures to reduce accidental introductions.

Keywords

Airport, arthropods, imported perishable goods, pathogens, vectors

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166

Professional Status of the Speaker

PhD Student

Junior Scientist Status

Yes, I am a Junior Scientist.

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