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Conference Abstract

The spread of invasive vector-borne plant diseases is increasingly influenced by environmental change, the case of *Scaphoideus titanus*, the primary vector of Flavescence dorée

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Abstract

The spread of vector-borne plant diseases is increasingly influenced by environmental change, particularly shifts in climate conditions. This study focuses on the species distribution modeling of *Scaphoideus titanus*, the primary vector of Flavescence dorée, a major phytoplasma disease affecting grapevines across Europe. Using ecological niche modeling approaches and future climate scenario projections, we analyzed the current and potential future distribution of this vector species.

Our results indicate a significant ongoing expansion of suitable habitats for *S. titanus*. In particular, recent emergence and establishment in Galicia (northwestern Spain) and northern France correspond with areas that have become increasingly favorable due to rising temperatures. These findings suggest that ongoing climate change is a key driver facilitating the spread of the vector beyond its historically known range.

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The expansion of *S. titanus* into new viticultural regions poses a growing threat to grapevine health and wine production. This study will help at designing an effective pest management strategy, which should be built on prevention, surveillance, eradication, and coordination and relies on institutional legitimacy, credibility, and public trust.

Keywords

pest control, climate change, Scaphoideus titanus, Flavescence dorée, grapevine cropping

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Conflicts of interest

The authors have declared that no competing interests exist.