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► To cite this version:

Marie-Anne Auger-Rozenberg, Vincent Lesieur, Ana Farinha, Alain Roques. Recent and fast invasion in Europe: The case of the Western conifer seed bug *Leptoglossus occidentalis*.. ICE 2016; XXV International Congress of Entomology, Sep 2016, Orlando, United States. 2016, ICE 2016; XXV International Congress of Entomology. Program book. 10.1603/ICE.2016.92730 . hal-01603928

HAL Id: hal-01603928

<https://hal.science/hal-01603928>

Submitted on 3 Jun 2020

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Section topic: Agricultural and Forest Entomology

Symposium: Profiles of Forest Pests Ready to Cross Borders and Invade New Areas

Recent and fast invasion in Europe: The case of the Western conifer seed bug *Leptoglossus occidentalis*

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Introduction: Many alien insect species that have arrived in Europe since the late 1990s have spread extremely rapidly, such as the western seed bug *Leptoglossus occidentalis* (Hemiptera: Coreidae). This native of Western North America was unintentionally introduced in Eastern USA during the 1950s, then spread eastwards to the Atlantic coast in the 1990s, before being recorded in Italy in 1999 and colonizing most of Europe within just a decade. Considered as a major seed pest in conifer seed orchards of its native range, the bug could also be a threat for the natural regeneration of conifer forests in Europe.

Methods: After characterizing the routes of its fast expansion in Europe using molecular markers, we assessed and compared the impacts of the bug in the French commercial seed orchards versus natural pine stands.

Results / Conclusion: The molecular multi-marker strategy confirmed that the European populations result from several independent introductions from the invaded eastern North America, which may have acted as a bridgehead for the European invasion. In seed orchards, the damage was not negligible especially taking into account the economic value of improved seeds. In natural stands, they depended on year and location but could lead to a dramatic decrease in pine seed yield, confirming that *L. occidentalis* can represent a serious threat for seed production in invaded areas not only in seed orchards but also in natural stands.

keywords : Cone and seed insects, *Leptoglossus occidentalis*, multiple introductions, source population, natural stands, seed orchards.