Pine wilt disease and the pinewood nematode: a threat to Mediterranean pine forests.

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*Bursaphelenchus xylophilus*, the pinewood nematode (PWN), is the causal agent of pine wilt disease (PWD). It was detected for the first time in Europe in 1999, in declining maritime pine (*Pinus pinaster*) in Portugal. The PWN has been detected in new pine (*P. pinaster*) forest areas in the center of the country, in 2008, despite efforts developed by the national forestry and quarantine authorities to control the nematode and its insect vector (*Monochamus galloprovincialis*). The nematode has also recently been reported to be present in Spain, again in *P. pinaster*. Circulation of non-treated wood and wood products, i.e. human action, is certainly responsible for the worldwide spread of the nematode. The nematode constitutes a threat to the rest of Europe, and namely to Mediterranean pine forests, if proper measures are not taken by European governments. Species such as *P. pinaster*, *P. nigra* and in particular *P. sylvestris* are considered highly susceptible to PWN. In this presentation, some of the strategies currently under way in Portugal to find a solution for the PWN will be discussed. These include, among others, the identification of naturally resistant *P.pinaster* trees, the identification of quantitative trait loci (QTLs) for PWN resistance, identification of resistance genes using 454 pirosequencing and suppressive subtraction hybridization, and genetic transformation of *P. pinaster*.

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Oral presentation