

Non-vector spread of the pine wood nematode, *Bursaphelenchus xylophilus*, with wood chips to non-infected trees

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The quarantine pest pine wood nematode (PWN) *Bursaphelenchus xylophilus*, native in North America, can be found in wood and root parts of infected conifer trees with focus on *Pinus species*. At the beginning of the 20th century this species was introduced into Japan supposedly with timber imports where it induced pine wilt expression on susceptible native pine species. Further outbreaks outside Europe are reported from China, Korea, Taiwan and Mexico. In 1999 PWN was found in Portugal, which today is declared as complete infested, since followed by first single tree outbreaks in Spain. The European Union (EU) member states have to undertake measures to prevent further spread of this nematode according to the emergency measures of the EU Commission.

Within the framework of the EU project REPHRAME "Analysis of the PWN to spread, survive and cause pine wilt in European coniferous forests in support of EU plant health policy" the risk of non-vector spread (without *Monochamus galloprovincialis*) of

PWN through various pathways to healthy forests has to be determined. One example of such non-vector spread is the transmission with wood chips to non-infected trees which will be examined in the present study.

Pinus sylvestris logs were inoculated with a fresh *B. xylophilus* isolate from Portugal, sealed in plastic bags and incubated for 24 days at 25 °C in a climate chamber. Approximately 80 kg fresh wood chips were produced with a wood mill. In August 2012 the wood chips were placed at 3-4 years old *Pinus sylvestris* in two greenhouses at 15 °C and 25 °C. At the end of the test period the nematodes will be extracted from the trees and the wood chips to determine their density per gram dry matter.

Phytosanitary measures concerning wood chips from PWN infected areas are already included in the existing trade regulations. This study quantifies the risk of non-vector spread with wood chips and helps to evaluate the already existing measures.