

DAFM Plant Pest Factsheet

Bursaphelenchus xylophilus

EU
Priority
Pest!



Fig 1 Wilting pine trees infested with *Bursaphelenchus xylophilus*

Pest Characteristics

- **Pest:** *Bursaphelenchus xylophilus*
- **Common name:** Pine wood nematode
- **Hosts:** *Bursaphelenchus xylophilus* is a nematode mainly associated with pine trees. It is considered a major pest of Scots Pine (*Pinus sylvestris*), which is considered native to Ireland. The pest is also known to affect other conifer species including larch, cedar, fir, spruce and hemlock.
- **Invasive Risk:** The pest was introduced into Portugal in 1999. The European Commission subsequently undertook measures to prevent the further spread of the pest and also listed it as an EU quarantine plant pest. DAFM conducts annual surveys to protect Ireland's pest free status for *B. xylophilus* and inspects imports to prevent entry of the pest into Ireland.
- **Entry Pathways:** The most likely entry pathway is on infested wood commodities (timber, logs). The pest is intercepted by border controls officers on wood packaging materials (WPM) entering EU member states. The pest can also be spread on infested live plants for planting originating from areas where *B. xylophilus* is present. Another pathway is the introduction of infected longhorn beetles, of the genus *Monochamus*, which are vectors associated with the spread of *B. xylophilus*.
- **Symptoms:** The primary symptom on pine trees is wilt which can be observed as pine decolouration and loss (Fig 2). However, these symptoms can be dependent on the local climate and modelling suggests that current Irish temperatures may not lead to expression of such symptoms.

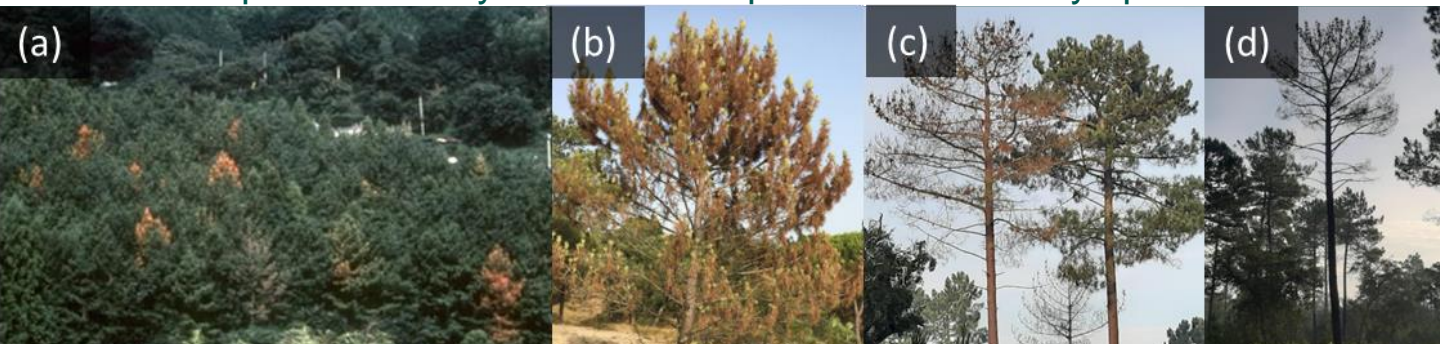


Fig 2: Spotting *B. xylophilus* infestation symptoms: wilting pine trees dotted throughout forestry (a), wilting tree (b), affected pine beside unaffected tree (c) isolated wilted tree (d) EPPO Global Database



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- **Dispersal:** *Bursaphelenchus xylophilus* is spread by longhorn beetles of the genus *Monochamus* which act as vectors for the pest.
- **Distribution:** *Bursaphelenchus xylophilus* is considered to be native to North America. The pest is believed to have been introduced into Asia on timber exports in the early 1900s and is now present in China, Japan, Taiwan & South Korea. The pest was introduced into certain areas in Portugal in 1999 and this was followed by an outbreak in Spain (2008).
- **Climatic suitability:** *Bursaphelenchus xylophilus* can survive in a range of climate types and would be suited to establishment in Ireland.
- **Lifecycle:** After egg hatch, *B. xylophilus* progresses through 4 juvenile stages, before becoming adults (Fig 3b). These nematodes can feed on both live or decaying, susceptible plants and fungi colonising the host. *Bursaphelenchus xylophilus* can produce dispersal stage juveniles as a response to changing conditions, such as lack of food or the presence of an insect vector (*Monochamus spp.*). This dispersal nematode stage can invade the insect before the adult beetle leaves the tree. *Monochamus* beetles in turn transmit *B. xylophilus* to new host trees either during feeding or egg laying (oviposition). Notably, there are no reported negative impacts of *B. xylophilus* on native N. American pine tree species which co-evolved with the pest. Impacts on pine in N. America have only been observed on non-native. pine species such as *P. sylvestris*.

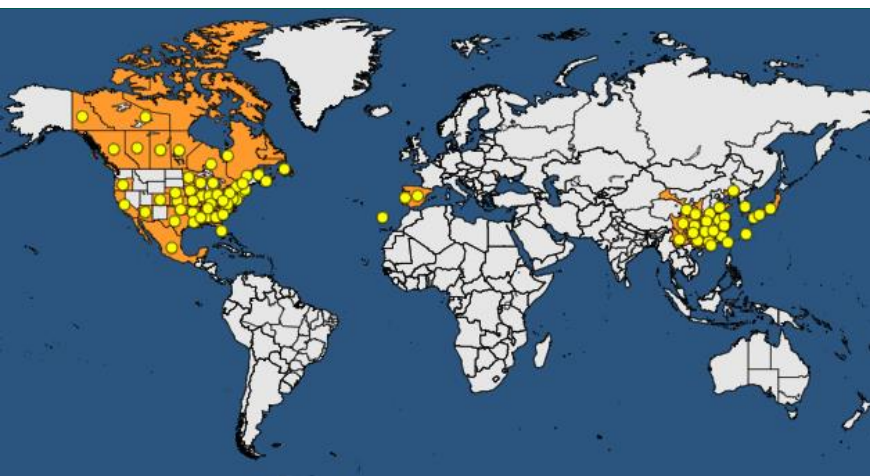


Fig 3: Map of world distribution of *B. xylophilus* ([Link](#))

If you find suspected symptoms, please submit images to DAFM at: plantpestreport@agriculture.gov.ie

Photo credits: EPPO ([B. xylophilus](#) & [Monochamus](#)).



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