Mini data sheet on *Phytophthora pinifolia*

Added in 2009 – Deleted in 2013

Reasons for deletion:
Phytophthora pinifolia has been included in EPPO Alert List for more than 3 years and during this period no particular international action was requested by the EPPO member countries. In 2013, it was therefore considered that sufficient alert has been given and the pest was deleted from the Alert List.

Phytophthora pinifolia (a new pathogen of *Pinus radiata*)

Why	Dr Webber (Forest Research, GB) attracted the attention of the EPPO Secretariat to a newly described species of *Phytophthora* which is severely damaging plantations of *Pinus radiata* in Chile.
Where	*Phytophthora pinifolia* was first observed on a large *Pinus radiata* plantation in Raqui, on the Arauco coast in 2004. It rapidly spread from the initial foci (70 ha) to 60 000 ha in 2006. Between 2007 and 2008, the affected area reduced to less than 500 ha. Genetic studies on the population structure of *P. pinifolia* supported the hypothesis that *P. pinifolia* is an alien species of recent introduction into Chile (but its area of origin remains unknown). **EPPO region:** Absent. **South America:** Chile (Arauco province, Región del Biobío (VIII)).
On which plants	So far, the disease has only been observed on *Pinus radiata.* In Chile, other coniferous trees (*P. pinaster* and *Pseudotsuga menziesii*) growing in the vicinity of affected *P. radiata* did not show any symptoms. However, further studies are needed to determine the host range of *P. pinifolia*.
Damage	The disease is characterized by needle infection, defoliation and tree mortality. Initially, small dark resinous bands appear on green needles. A reddish discoloration of the needles is subsequently observed, appearing first on the lower side of the branches. Dead and dying needles remaining on the trees give them a scorched appearance. Needles then fall from the trees which can be almost totally defoliated. Exudation of resin at the basis of the needles and necrotic lesions under the bark are also observed. The disease causes the rapid death of young seedlings, and mature trees can be killed after 2 or 3 years of repeated infections. In Chile, it is considered that *P. pinifolia* is the most important problem affecting *P. radiata* plantations, and that it is a serious threat to the local forestry industry.Dissemination The life cycle of *P. pinifolia* remains to be studied, and for the moment data is lacking on its means of dissemination. However, as for other *Phytophthora*, it is likely that the disease can be transmitted by infected plants, water, and soil. Studies have showed that green sawn timber was not a likely pathway for introducing *P. pinifolia* to new areas.
Pathway	Plants for planting of *Pinus radiata* from Chile, cut branches? cones? soil?
Possible risks	In Europe, the main forest plantations of *Pinus radiata* are located in Spain (Northwest), but the tree is also grown at a smaller scale in France (south of the Atlantic coast) and the United Kingdom (West Wales, Southwest England, Channel Islands). *P. radiata* is also planted in parks and gardens for ornamental purposes. So far, *P. pinifolia* has only been reported from Chile, but it is suspected that it is an introduced species (severity of damage, rapidity of spread). Although much data is still missing on the biology, host range, control methods, potential of establishment, it is quite clear that *P. pinifolia* can cause extensive tree mortality and hence economic damage. It seems desirable to avoid the introduction of *P. pinifolia* into the EPPO region, where it could be a threat to *P. radiata* trees growing in forest plantations, nurseries, and amenity areas.
Source(s)	Ahumada R, Díaz C, Peredo M, Barría C, González P, Cuevas G (200?) Detection of possible *Phytophthora pinifolia* infection in *Pinus radiata* green sawn timber produced in Chile. Abstracts from the 4th Sudden Oak Death Science Symposium, 2009-06-15/18, Santa Cruz, California, USA, p 18. http://nature.berkeley.edu/comtf/sodsymposium4/pdf/book_of_abstracts.pdf

Durán A, Gryzenhout M, Drenth A, Slippers B, Ahumada R, Wingfield BD, Wingfield MJ (2010) AFLP analysis reveals a clonal population of *Phytophthora pinifolia* in Chile. *Fungal Biology* **114**(9), 746-752.

Durán A, Gryzenshout M, Slippers B, Ahumada R, Rotella A, Flores F, Wingfield BD, Wingfield MJ (2008) *Phytophthora pinifolia* sp. nov. associated with a serious needle disease of *Pinus radiata* in Chile. *Plant Pathology* **57**(4), 715-727.

Wingfield MJ (2007) A new species of *Phytophthora* associated with dying pine needles in Chile. http://src.fabinet.up.ac.za/tpcp/news/pinifolia.pdf

EPPO RS 2009/006, 2009/164, 2011/177
Panel review date 2013-03 Entry date 2009-01