

NEW DISEASE REPORT

First report of the pitch canker fungus, *Fusarium circinatum*, on pines in Chile

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Pitch canker, caused by *Gibberella circinata* (*Fusarium circinatum*), is currently regarded as one of the most serious diseases of pines in the world. The disease was first discovered in the south-eastern United States in the early 1900s and subsequently, has caused sporadic occurrences of severe disease in that area. More recently, the disease appeared in California where it is currently causing a serious epidemic on native *Pinus radiata*, which is of international concern (Gordon *et al.*, 2001).

Pinus radiata forms the basis of extensive areas of exotic forest plantation in many countries in the Southern Hemisphere. For this reason, pitch canker is viewed as one of the greatest threats to globally relevant forest industries in these areas. Consequently, various international programmes have been established in an attempt to reduce this threat (Devey *et al.*, 1999).

During the course of recent surveys in the Concepción area of Chile, dying *P. radiata* plants have been discovered in both containerized and open rooted clonal hedges. Plants appear to die rapidly and typically display resin exudation from the root collar areas and pitch-soaked wood associated with these lesions. Isolations from symptomatic tissue have consistently yielded cultures of *Fusarium* belonging to the *Fusarium subglutinans* species complex. Isolates have sterile hyphal coils strongly reminiscent of *F. circinatum*. Single conidial cultures paired with mating tester strains of the 'H' mating population (Britz *et al.*, 1999) consistently showed sexual compatibility. To further confirm their identity, a PCR-RFLP test based on histone H3 gene sequences (Steenkamp *et al.*, 1999) was used on six isolates to compare them with members of the *F. subglutinans* species complex. This technique reliably distinguishes *F. circinatum* from other species in this complex. Results confirmed morphological compar-

isons and mating compatibility tests showing that the fungus associated with dying plants in Chile is *F. circinatum*.

Although *F. circinatum* is causing damage to *P. radiata* plants in Chilean nurseries, it has as yet, not been found on trees in plantations. In this sense, the situation is similar to that in South Africa, where the pathogen causes serious damage to seedlings in nurseries but is not associated with typical symptoms of pitch canker. The fact that *P. radiata* is highly susceptible to infection by *F. circinatum* and that this tree forms the basis of the local forestry is of significant concern. This concern is heightened by the fact that various insect pests of *P. radiata* are present in Chile that are capable of providing infection sites for the pitch canker fungus. Consequently, various strategies linked to tree breeding and selection have been established to minimise the long-term threat of pitch canker in Chile.

References

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Accepted 28 December 2001 at www.bspp.org.uk/ndr where figures relating to this paper can be viewed.