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NEW DISEASE REPORT

First report of *Phytophthora nicotianae* associated with *Eucalyptus* die-back in South Africa

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Eucalyptus species, hybrids and clones are planted commercially in South Africa for the production of pulp and paper and various other forest products. However, some species such as *E. smithii* are susceptible to root and collar rot associated with *Phytophthora cinnamomi* (Linde *et al*., 1999). Since 1999, *P. nicotianae* (synonym, *P.n.* var. *parasitica*), not *P. cinnamomi*, has been recovered from dead and dying *Eucalyptus* trees such as *E. macarthurii* and *E. smithii*. *Phytophthora nicotianae* is a soilborne pathogen often isolated from forest soils (Shearer *et al*., 1988). In South Africa it is well known as the causal agent of black butt on *Acacia mearnsii* (Roux & Wingfield, 1997).

In the field, 1-year-old infected trees had typical symptoms of *Phytophthora* root and collar rot. First disease symptoms included chlorosis of the leaves as well as gum exudation through the cankers on the tree collar. As the disease progressed, the trees usually wilted and died due to girdling. Disease symptoms were reproduced on field-grown trees inoculated with different *P. nicotianae* isolates. Necrotic lesions with gum exudates were observed above the inoculation point, 30 days after inoculation.

Subsequent to the discovery of the root disease caused by *P. nicotianae*, several recently established *E. smithii* plantations in the KwaZulu-Natal Province of South Africa were surveyed. *P. nicotianae* was recovered from 45% of soil samples and 60% of diseased plant material. *P. cinnamomi* was recovered from only 5% of soil samples and 12% of diseased plant material.

Phytophthora isolates from soil and diseased material were identified using morphological features (Stamps *et al*., 1990). The A1 and A2 mating types were determined by pairing *P. nicotianae* isolates obtained with known tester strains using the method described by Erwin & Ribeiro (1996). Oospores were produced following pairing with tester isolates and all isolates proved to be of the A2 mating type. Isolates have been deposited into the culture collection of the Forestry and Agricultural Biotechnology Institute (FABI), University of Pretoria.

Phytophthora nicotianae, rather than *P. cinnamomi*, is emerging as a more serious threat to a number of cold-tolerant *Eucalyptus* spp. in South Africa. Since 1999 *P. nicotianae* has been recovered from dead and dying *Eucalyptus* species such as *E. fastigata*, *E. elata*, *E. macarthurii*, *E. nites*, *E. dunii* and *E. smithii*.

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