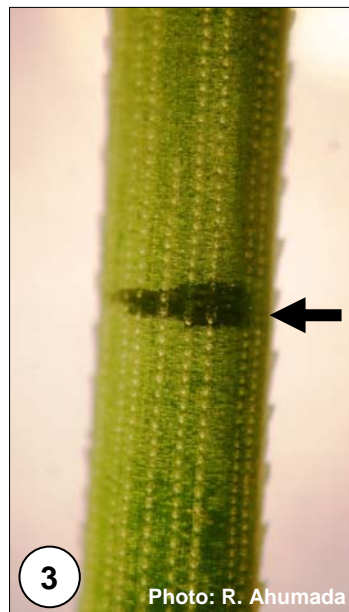
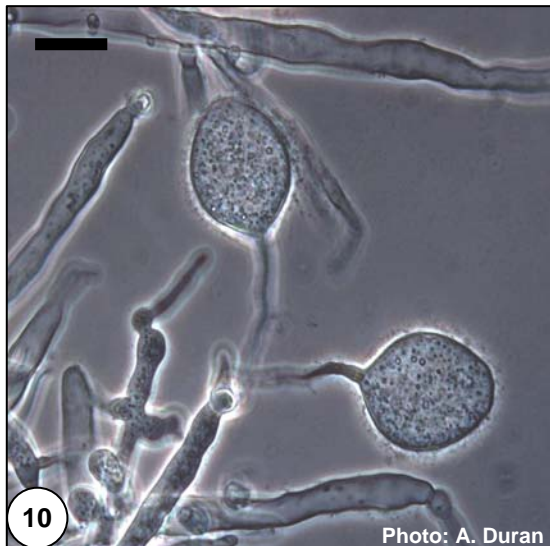


A NEW SPECIES OF *PHYTOPHTHORA* ASSOCIATED WITH DYING PINE NEEDLES IN CHILE

BY: Michael J. Wingfield, Forestry and Agricultural Biotechnology Institute (FABI), University of Pretoria, Pretoria 0001. South Africa.
Mike.Wingfield@fabi.up.ac.za

During the course of the past three years, a new needle disease has appeared in *Pinus radiata* plantations, chiefly in the Arauco province of Chile. The disease, locally referred to as Daño Foliar del Pino (DFP), is typified by the relatively rapid death of needles and subsequent defoliation of trees (Fig. 1). Infections usually begin to appear in late autumn and co-incident with the onset of rain. Infected needles typically display distinct resinous bands on their lamina's (Figs. 2 - 3, arrows). Where infections reach the needle bases, copious amounts of resin exude from the points of attachment with the stems and dead needles fall from the trees (Figs. 4 - 6). New needle growth in the following season is typically not affected and trees appear to recover unless a new season of infection occurs the following year (Figs. 7 - 8). Newly planted seedlings and naturally regenerated plants die in the first year of growth (Fig. 9). Isolations from infected *P. radiata* needles using selective media have consistently yielded a *Phytophthora* sp., the identification of which has been confirmed based on morphological characteristics, including non-papillate and caducous sporangia (Figs. 10 - 11). DNA sequence analyses for the ITS region of the rDNA and the COX II region, have confirmed the identification of the fungus from infected *P. radiata* needles as a *Phytophthora* sp. Furthermore, they have provided robust evidence to suggest that it represents a new species, for which the name *Phytophthora pinifolia* nom. prov. has been provided. A team of scientists linked to FABI (<http://www.fabinet.up.ac.za>) are currently considering the origin of the fungus, its possible role as the cause of DFP and improved management options for the disease.





Symptoms of Daño Foliar del Pino (DFP) on *Pinus radiata* in Chile. (1). Aerial view of the infected plantations. (2-3). Resinous bands on the needle (4-6). Infected needles showing resin exudation at their bases (7, 8) Recently defoliated adult trees. (9) Dying naturally regenerated seedlings. (10-11) Non-papillate and caducous sporangia of *Phytophthora pinifolia* nom. prov. isolated from the infected *P. radiata* needles.