SHORT COMMUNICATIONS

TRANSCONTINENTAL OCCURRENCE OF A1 AND A2 STRAINS OF *PHYTOPHTHORA CINNAMOMI* IN AUSTRALIA*

By B. H. Pratt,† W. A. Heather,† and C. J. Shepherd‡

The fungus *Phytophthora cinnamomi* Rands is regarded as heterothallic with compatible mating strains designated A1 and A2 (Gallegly 1970). Although the fungus has a world-wide distribution the A1 strain has been reported only from North America and Hawaii (Galindo and Zentmyer 1964; Haasis, Nelson, and Marx 1964).

The authors recently carried out a detailed study of the mating behaviour of 372 isolates of *P. cinnamomi* from Australia. Isolates were obtained from soil and plant root samples from agricultural and forest land in all Australian States and Territories, using either apple or lupin baiting. Oospore formation was observed when the isolates were mated with American A1 and A2 isolates of *P. cinnamomi*, on cleared oatmeal agar at 23°C kept in the dark.

The identity of all isolates was confirmed by a study of hyphal morphology, chlamydospore form and number, radial growth rate on agar, cardinal temperatures for growth, growth in varying concentrations of malachite green, sporulation in sterile water and soil extracts, compatibility matings with 11 other species of *Phytophthora*, and oospore production in association with *Trichoderma* sp. (Brasier 1971).

Abundant oospores were formed by 366 isolates when mated with the A1 but not the A2 strain, and thus they were designated A2 type. Five isolates formed abundant oospores with the A2 but not the A1 strain, within the same period. One isolate failed to form oospores when mated with either A1 or A2 isolates.

The identity and mating type of the five *Phytophthora* A1 isolates was confirmed by the Commonwealth Mycological Institute. The origin of the A1 isolates is indicated in the following tabulation:

Commonwealth Mycological Institute No.	State	Host associate
165645	Queensland	*Casuarina littoralis*
165642	New South Wales	*Eucalyptus globoidea*
165643	New South Wales	*Banksia* sp.
165644	Western Australia	*Eucalyptus marginata* forest*
165640	Western Australia	*Aotus passerinoides*

* Specific host associate not determined.

These findings could be significant in understanding variation in the pathogenicity of the organism. It may also have evolutionary significance in that it is in accord with our suggestion that the fungus may be indigenous to eastern Australia (Pratt, Heather, and Shepherd 1971).

* Manuscript received 19 June 1972.

† Department of Forestry, Australian National University, P.O. Box 4, Canberra, A.C.T. 2600.

‡ Division of Plant Industry, CSIRO, P.O. Box 1600, Canberra City, A.C.T. 2601.

Because of the apparent wide distribution of the A1 strain of the fungus in Australia, local quarantine to restrict dissemination would seem inadvisable.

Acknowledgments

This work was carried out while the University authors were the joint holders of a grant from the Australian Research Grants Committee. The authors are indebted to their colleagues at the Forests Commission Victoria, New South Wales Department of Agriculture, New South Wales Forestry Commission, Commonwealth Forestry and Timber Bureau, University of Adelaide (Waite Institute), and to Professor G. A. Zentmyer, University of California, and Mr. J. L. Alcorn and Mr. K. Pegg, Queensland Department of Primary Industries, for supply of fungal cultures, and to the Commonwealth Mycological Institute for assistance with identification of cultures.

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