

PERONOSPORA DIANTHI AND PERONOSPORA LAMII, TWO DOWNY MILDEWS RECENTLY DETECTED IN NEW ZEALAND

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Downy mildews belong to the fungal kingdom Chromista (the pseudofungi) and are poorly represented in the New Zealand flora. In October 2002, *Peronospora dianthi* was found for the first time in New Zealand in a Waikato nursery. This pathogen causes yellow patches on *Dianthus* leaves. Infected parts later become necrotic. The grower was advised of his obligations under the Biosecurity Act and plant material was contained on the site while MAF conducted its investigation. As a containment measure, infected plants were treated with fungicides. At the conclusion of MAF's investigation, no link to any importation could be determined. In March 2003, *Peronospora lamii* was also detected on *Salvia officinalis* (sage) plants from a North Auckland glasshouse. This downy mildew causes a necrosis of the foliage. MAF inspected the affected glasshouse crop soon after presence of the fungus was reported and the infected crop was later incinerated. Both downy mildews may now be established in New Zealand.

BOTRYOSPHAERIA SPECIES ON TREES AND SHRUBS IN NEW ZEALAND

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The fungal genus *Botryosphaeria* has a global distribution and occurs on an extensive range of host genera. In effect, it ranges from being endophytic to saprophytic to pathogenic. Seven *Botryosphaeria* species occurring on 23 host genera are recorded in New Zealand. In view of a number of newly described *Botryosphaeria* species and the close relationship to the major pine pathogen *Diplodia pinea* (*Sphaeropsis sapinea*), a better understanding of these species and their role is needed. Identification of *Botryosphaeria* species has often been based on the cultural and morphological characteristics of their anamorphs, which include *Fusicoccum* and *Diplodia* species. Because many of the anamorphs are very similar morphologically and can be strongly influenced by the substrate they are grown on, molecular identification techniques are being utilised to separate out species and morphotypes. In this study, isolates of *Botryosphaeria* from a wide range of woody hosts are separated based on cultural and morphological characters. An updated host list and a key to the four most frequently encountered *Botryosphaeria* species are given. The need for molecular tools to support the traditional identification techniques is reinforced.