Molecular Identification and Detection of *Phytophthora ramorum*.

Peter Bonants, Els Verstappen, Plant Research International, P.O. Box 16, NL-6700 AA Wageningen, The Netherlands, phone: 00.31.317.476213, peter.bonants@wur.nl; Katarzyna Wiejacha, Research Institute of Pomology and Floriculture, Skierniewice, Poland; Ineke de Vries, Plant Research International, P.O. Box 16, NL-6700 AA Wageningen, The Netherlands; and Kelly Ivors, Dept. of Plant Pathology, North Carolina State University, USA

The genus *Phytophthora* comprises over 70 described species, however many new species have been reported recently as a result of the discovery of previously undetected species or by the hybridization of known species. *Phytophthora ramorum*, one of the new *Phytophthora* species, is considered as a high phytosanitary risk because of a large-scaled oak mortality in coastal forests in California. In Europe, the disease occurs mainly on *Rhododendron, Viburnum* and *Camellia*, however, in landscapes recently some infected trees of *Quercus rubra Quercus falcata*, *Quercus ilex*, *Aesculus hippocastanum* and *Fagus sylvatica* were reported on sites with previous findings of infected *Rhododendron* plants.

Phytophthora ramorum is a heterothallic species and is known to exist as two distinct populations in California / Oregon (US) and Europe (EU), respectively. In Europe almost exclusively A1 mating type isolates have been found, while in the US A2 type isolates are most often identified. Measures are in force to prevent spread of this pathogen, as well as to prevent mixing of both types. Therefore, adequate detection and identification methods are urgently needed.

Several molecular techniques (ITS-PCR, Taqman-PCR, AFLP, ISSR, microsatellites, sequence analysis of several genes and PCR-RFLP) have been developed for detection and characterization of this new species of *Phytophthora*. Molecular differences between US- and EU-isolates of *P. ramorum* exist and can be demonstrated with the techniques at hand. Data thus far obtained of isolates from throughout Europe, and from the United States will be presented and discussed.