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<http://www.apsnet.org/meetings/abstracts.asp>

Roubtsova, T.V. and Bostock R.M. 2008. Impact of episodic root stress on the susceptibility of *Rhododendron* sp. and *Viburnum tinus* to *Phytophthora ramorum*. *Phytopathology* 98:S136.

Phytophthora ramorum attacks members of the Fagaceae, causing foliar blight and dieback on many forest and nursery species. To examine root infection by *P. ramorum* and the potential role of mild abiotic stress in disease predisposition, experimental systems were established with *Rhododendron* sp. and *Viburnum tinus*. Experiments were conducted in two formats: modified hydroponic culture and standard potting soil. Roots of plants were exposed to NaCl stress prior to inoculation under four treatment regimes: 1) salt-stressed, non-inoculated; 2) non-stressed, non-inoculated; 3) salt-stressed, inoculated; and 4) salt-stressed, non-inoculated. Plants in hydroponic culture were exposed to 0.2 M NaCl/0.02 M CaCl₂/0.5x Hoaglands for 12 hours and then returned to 0.5x Hoaglands. Potted plants were treated with a soil drench of 0.2 M NaCl/0.02 M CaCl₂ for 12 hours, and then flushed with water to remove the salt. Roots were then inoculated with zoospores of *P. ramorum*. In hydroponic plant cultures, the two *P. ramorum* isolates tested were similar in pathogenicity on *Rhododendron* and *Viburnum* plants, with root and stem lesions developing within one week after inoculation (10⁴ zoospores/ml) in salt-stressed roots. Non-stressed, inoculated plants became symptomatic after two weeks. Microscopic examination of roots from both species revealed that their tips were covered with sporangia of *P. ramorum*. On potted *Rhododendron* plants, disease developed in salt-stressed roots, with death of the plant occurring within four weeks after inoculation. Non-stressed plants survived for 6–8 weeks following inoculation. The implications of episodic stress in root infection by *P. ramorum* and disease development in nursery ornamentals will be presented.