

## **Pathways of Infection for *Phytophthora ramorum***

Carrie D. Lewis and Jennifer L. Parke, Dept. of Botany and Plant Pathology, Oregon State University, Corvallis, OR 97331 USA; (541) 737-4347; lewisca@onid.orst.edu

The lack of knowledge regarding infection biology of *P. ramorum* limits our understanding of its ecology and epidemiology. Pathways of infection in *rhododendron* 'Nova Zembla' were investigated using tissue culture plantlets and 3-year-old container plants inoculated with zoospore suspensions or mycelial plugs of Oregon nursery isolate 03-74-N11A.

To observe infection, inoculated roots, stems, and leaves were examined using fluorescence and scanning laser confocal microscopy. The histology of inoculated roots, stems and leaf surfaces was evaluated to identify pathways by which *P. ramorum* infects and colonizes plants.

Preliminary observations of stem tissue indicate the presence of *P. ramorum* hyphae in xylem and pith cells in addition to chlamydospores in the cortex. In roots, germinating cysts were observed penetrating root primordia, emerging laterals, and wound sites. On leaves, germinating cysts did not require stomata for infection. Leaf inoculations of intact leaves revealed that infections initiated near the midrib resulted in more rapid development of necrosis in petioles and stems as compared to infection initiated at other sites on the leaf.