Evaluation of Fungicides for the Control of *Phytophthora ramorum* Infecting *Rhododendron, Camellia, Viburnum* and *Pieris*

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Phytophthora ramorum has been detected infecting ornamental hosts in European nurseries and gardens beginning in1993, and detected in North American nurseries beginning in 2000. Nurseries need a comprehensive program to insure that nursery stock remain disease free. Fungicides could be part of an integrated pest management approach to meet that goal. It will be especially important to prove that fungicides are not masking symptoms and the detection of the pathogen.

This paper presents the findings of extensive fungicide evaluations for the prevention and eradication of *P. ramorum* on four important ornamental nursery hosts: *Rhododendron* ('Cunningham's White' and R. 'Irish Lace'), *Camellia* (*C. japonica* 'Elena Nobile'), *Pieris (P. japonica* 'Whitewater'), and *Viburnum* (*V. tinus* 'Compacta'). First, we screened prospective fungicides by evaluating the preventative control of a wide range of commercially-available and experimental fungicides. Second, we selected the fungicides that provided the best efficacy in the fungicide "screen" and repeated these applications to determine their residual action to prevent infection. With this information, a grower can determine how frequently fungicides would need to be applied under environmental conditions that favor disease. Efficacy was also judged by how well the pathogen was recovered from lesions resulting from infections. Finally, the curative potential of these fungicides were judged by the success of recovery of the pathogen from lesions that were treated with these fungicides.

Fungicide treatments were at the maximum registered rate. If the active ingredient was not registered, then the maximum recommended dosage was given by the manufacturer's technical personnel. For *Rhododendron*, mefenoxam (Subdue Maxx ®), dimethomorph (Stature DM®), pyraclostrobin (Insignia®) and fenamidone applied as foliar sprays consistently provided preventative control as expressed by lesion development on wounded and nonwounded leaves using inoculum plugs. These fungicides provided preventative activity for at least 2 weeks but not 4 weeks following their application. When lesions occurred, the pathogen was successfully recovered from the lesions by isolation on selective media. Only dimethomorph significantly reduced the success of isolation recovery. Post-infection treatments of leaf lesions with foliar- and soil-applied fungicides were ineffective in reducing the development of lesions and the success of pathogen recovery from those lesions. The pathogen was recovered from lesions consistently for at least 6 weeks after fungicide application regardless of treatment. The outcome of the last evaluation for *Camellia*, *Pieris* and *Viburnum* was pending at this writing. Final conclusions will be given in the presentation.