

Variation in Phenotype for Resistance to *Phytophthora ramorum* in a Range of Species and Cultivars of the Genus *Viburnum*

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To date it is well established that the ornamental plant *Viburnum plicatum* var. *tomentosum* cv. 'Mariesii' and other *Viburnum* species or cultivars are highly susceptible to *Phytophthora ramorum*. What is not known is whether all cultivars in the genus *Viburnum* are equally susceptible, whether they are field- or container grown. The objective of our research was to evaluate 9 species of field-grown *Viburnum* including *V. burkwoodii*, *V. dentatum*, *V. lantana*, *V. opulus*, *V. plicatum*, *V. lentago*, *V. nudum*, *V. sargentii*, and *V. trilobium* for a total of 23 cultivars for resistance to *P. ramorum* in detached leaf tests. Foliage of *Viburnum* was obtained from Carlton Plants nursery on September 20, 2004. Detached leaves were wound-inoculated with 6 mm agar plugs of 1-week old colonies of *P. ramorum* using strains 4123 (isolated from *Rhododendron macrophyllum*, predominant US genotype of mating type A2) and 03-74-D12-A (isolated of *V. plicatum* var. *tomentosum* 'Mariesii' European genotype of mating type A1) grown on dilute V-8 agar. While two mycelial agar plugs were used to inoculate one side of a leaf, a control plug of the same medium was inoculated on the other side of the leaf. Leaves were incubated in moist chambers at 20° C for 8 days before measurements were taken. Lesion area was determined as the percentage of infected leaf area of the total leaf area using the Assess program (APS, St. Paul, MN). We obtained significant differences for levels of resistance based on percentages of leaf areas affected ($P < 0.001$) and no significant differences for isolates and interactions between isolates and cultivars. The percentages of lesion areas affected ranged from 95% (cvs. *V. burkwoodii* cv. unkown, *V. plicatum* var. *tomentosum* cv. Mariesii, and *V. trilobium* cvs. Alfredo and Bailey), to intermediate responses between 25-90% (cvs. *V. burkwoodii* cv. Mohawk, *V. lantana* cv. Mohican, *V. opulus* cvs. Compacta and Hanum, *V. lentago* cv. unkown, *V. sargentii* cv. Onandaga, *V. trilobium* cv. Redwing) to less than 15% infection (*V. dentatum* cvs. Autumn Jazz, Blue Muffin, Chicago Lustre, and Burgundy; *V. opulus* cv. Sterile, *V. plicatum* cv. Newport, Popcorn, Shasta, and Shoshon; *V. nudum* cv. Winterthur, *V. trilobium* cv. Wentworth). Our data indicate that there is a considerable range of resistance phenotypes in the genus *Viburnum* from high susceptibility to resistance.