

Detached Leaf Assays with *Phytophthora ramorum*: Are They Valid?

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Detached leaves have been used by several researchers to investigate host susceptibility to *Phytophthora ramorum*, evaluate fungicide efficacy, and investigate other aspects of *P. ramorum* biology. This is because large scale, whole plant testing is restricted to quarantine facilities that are not available to most researchers. Detached leaves offer several advantages: greater reproducibility due to similar size and age of leaves, increased replication, more consistent delivery of inoculum, uniform incubation conditions, localization of the inoculation site to specific parts of the leaf, more accurate quantification of disease, conservation of space, and ease of handling. Disadvantages of the detached leaf assay are that some host defense responses may be compromised, movement and behavior of certain systemic fungicides may be atypical, and detached leaves may not adequately reflect the variability of whole plants in terms of leaf age and leaf orientation. We will describe some of the factors that influence the outcome of detached leaf assays and consider conditions under which this assay can be a useful and reliable indicator of whole plant response.