

## DEVELOPMENT OF *ARABIDOPSIS THALIANA* AS A MODEL HOST FOR *XYLELLA FASTIDIOSA*

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### ABSTRACT

The bacterium *Xylella fastidiosa* (*Xf*) causes Pierce's disease and a number of other plant diseases of significant economic impact. To date, progress determining mechanisms of host plant susceptibility, tolerance or resistance has been slow, due in large part to the long generation time and limited available genetic resources for grape and other known hosts of *Xf*. To overcome many of these limitations, *Arabidopsis thaliana* has been evaluated as a host for *Xf*. A pin-prick inoculation method has been developed to infect *Arabidopsis* with *Xf*. Following infection, *Xf* multiplies robustly and can be detected by microscopy, PCR and isolation. The ecotypes Van-0, LL-0 and Tsu-1 all allow more growth of *Xf* strain Temecula than the reference ecotype Col-0. Affymetrix ATH1 microarray analysis of inoculated vs. non-inoculated Tsu-1 reveals gene expression changes that differ greatly from changes seen after infection with apoplast colonizing bacteria. Many genes responsive to abiotic stress are differentially regulated while classic pathogenesis-related (PR) genes are not induced by *Xf* infection.

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# ***Section 6:***

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