

**Tarnowski, T.L.** and Palmateer, A.J. 2010. High-Fidelity PCR as a sensitive molecular diagnostic tool to detect *Phytophthora nicotianae* on spathiphyllum. *Phytopathology* 100:S125.

To compare the sensitivity of High-Fidelity (Hi-Fi) and standard PCR in detecting *Phytophthora nicotianae* in symptomatic spathiphyllum (*Spathiphyllum wallisii*) plants, four DNA extraction methods were tested in conjunction with a standard and two Hi-Fi PCR protocols. The DNA extraction methods were: 1) Extract-N-Amp Plant Kit (Sigma-Aldrich), 2) DNeasy Plant Mini Kit (Qiagen), 3) CTAB buffer, and 4) lithium chloride Shorty buffer. Symptomatic leaf, petiole and root tissue from four plants were submitted to each extraction method. DNA samples were then used for each PCR protocol using *P. nicotianae* -specific primers: 1) Standard PCR, 2) Hi-Fi PCR using LongAmp enzyme, and 3) Hi-Fi PCR Taq+Accuzyme. DNA quantification using spectrophotometry indicated Extract-N-Amp and Shorty methods yielded the highest DNA amounts with lower purity. Both Hi-Fi PCR protocols were more sensitive than standard PCR. The Accuzyme protocol detected the pathogen in all samples using the DNeasy and Extract-n-Amp methods, whereas the standard protocol detected the pathogen only in leaf samples using the DNeasy kit. This study demonstrates that Hi-Fi PCR provides a highly sensitive tool for molecular diagnostics *in planta*, and that the DNA extraction method influences PCR sensitivity.