Effect of temperature on spore viability of *Neonectria ditissima*

B.M. Fisher, L. Frijters and R.W.A. Scheper

The New Zealand Institute for Plant & Food Research Limited (PFR), PFR, Private Bag 1401, Havelock North 4130, New Zealand

Corresponding author: brent.fisher@plantandfood.co.nz

The fungus *Neonectria ditissima* causes European canker on apple and pear trees in temperate regions. The thermal death point of ascospores and conidia of this pathogen is unknown. In this study, ascospores and conidia were exposed to six temperatures between 20°C and 50°C, for seven time intervals between 5 min and 24 h. The viability of the spore suspensions was determined by germination on slides and growth on potato dextrose agar. Temperatures up to 30°C did not reduce spore viability. Exposure to 35°C for 24 h reduced conidial and ascospore germination by 92% and 85% respectively. At 40°C and 45°C spore viability was reduced after 5 min, declining rapidly with increasing exposure times. No spores germinated after 5 min at 50 °C. This study suggests that 15 min dips in 45°C water may kill surface spore contamination of budwood prior to grafting. Budwood-based validation studies are now recommended.