

Hao, W. and C. Hong, C. 2010. Effect of temperature on survival of chlamydospores and oospores of *Phytophthora* species in irrigation water. *Phytopathology* 100:S47.

Plant pathogens, especially *Phytophthora* species in re-circulating irrigation water, present significant health risks to floral crops. One of current technologies for water decontamination is heat treatment, which is effective and has minimal human health and environmental hazards. The primary objective of this study was to examine whether water temperature required to inactivate major pathogens in re-circulated irrigation water can be lowered from 95°C as recommended in the current protocols. Specifically, we investigated the effect of water temperature on survival of chlamydospores and oospores using two of the most destructive species, *P. nicotianae* and *P. pini*. Oospores of *P. pini* did not survive after 12 h of heat treatment at about 42°C, and the majority of chlamydospores of *P. nicotianae* did not survive 24 h at the same temperature. These results suggest that water temperature for heat treatment may be lowered substantially from 95°C without sacrificing efficacy. This research is being expanded to include other stages of the life cycle of *Phytophthora* species and other major groups of pathogens as well as trials in greenhouse settings.