

**Granke, L.L.** and Hausbeck, M.K. 2010. The effects of temperature, humidity, and wounding on development of *Phytophthora* rot of cucumber. *Phytopathology* 100:S43.

The effects of temperature (10, 15, 20, 25, 30, 35°C at >97% relative humidity) and relative humidity (<45%, ~60%, ~70%, ~80%, ~90%, and >97% at 25°C) on development of *Phytophthora* fruit rot of pickling cucumber were investigated in controlled growth chamber studies. In addition, the effect of wounding on size related resistance of pickling cucumber to *P. capsici* was characterized for three fruit sizes: 2.0 to 2.5 × 8 to 9 cm (small), 3.0 to 4.0 × 12.0 to 13.0 cm (medium), and >4.5 cm × >14 cm (large). No lesions developed on cucumbers incubated at 10°C, but lesions were observed on cucumbers incubated at all other temperatures tested. Lesion development was delayed for cucumbers incubated at 15°C. Lesion diameter and sporulation were greatest on cucumbers incubated at 25°C at 4 days post inoculation (dpi). Lesion development was greatest on cucumbers incubated at ≥80% relative humidity, but lesions formed on cucumbers incubated at all levels of relative humidity tested. Wounding was found to lessen size-related resistance in pickling cucumber. Lesion size was similar for all wounded cucumbers at 4 dpi regardless of fruit size. The smallest lesions were observed on unwounded large cucumbers. Sporangial production was greatest on wounded small and medium fruits. Fewer sporangia were produced on the large unwounded fruits than on any of the other cucumbers tested. Similar numbers of sporangia were produced on wounded large fruits and unwounded small and medium cucumbers.