Effects of Inoculum Density, Plant Age and Temperature on Disease Severity Caused by Pythiaceous Fungi on Several Plants

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Alfalfa, maize, sorghum and sugarbeet plants were inoculated with zoospores of *Phytophthora* and *Pythium* species in order to assess the effects of inoculum density, plant age and temperature on disease severity. Seedlings were grown axenically in test tubes and inoculated with zoospore suspensions. Disease severity was assessed by measuring the root growth and discoloration of treated and control seedlings. The incremental root length of all plants decreased and root discoloration increased as inoculum concentration of the pathogen increased. Changes were more intensive among low levels of zoospore concentrations and no significant differences in disease severity were found for inoculum densities higher than 10^4 zoospores ml^{-1}. Disease severity was negatively related to plant age. Disease development on sugarbeet seedlings infected with *Pythium* and *Phytophthora* species was affected by temperature, but the pattern of response was determined by the pathogen's temperature preferences. The incremental root length decreased as temperature increased up to 25°C. The effect of *Pythium dissimile* and *Phytophthora cactorum* on root length was significantly lower at 35°C than at 25°C, whereas *Pythium aphanidermatum* and *Phytophthora nicotianae* caused significant damage to roots even at 35°C.

KEY WORDS: Alfalfa; maize; sorghum; sugarbeet; root growth; root discoloration; *Phytophthora*; *Pythium*.

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