

Title Infection of 'd'Anjou' pear fruit by *Potebniomyces pyri* in the orchard in relation to Phacidiopycnis rot during storage

Authors Q. Liu and C. L. Xiao

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Abstract

Phacidiopycnis rot, caused by *Potebniomyces pyri*, is a recently recognized postharvest fruit rot disease of 'd'Anjou' pear (*Pyrus communis*) in the United States. To determine the timing of fruit infection in the orchard in relation to incidence of Phacidiopycnis rot during storage, fruit were inoculated in the orchard at different times during the growing season, harvested, and monitored for decay development during storage at 0°C. Fruit inoculated in the field and laboratory were also used to determine the infection courts and the importance of necrotic tissues to infection of sepals that may lead to calyx-end Phacidiopycnis rot. Phacidiopycnis rot was observed during cold storage on the fruit inoculated any time after bloom till near harvest but not on the fruit inoculated during bloom. Phacidiopycnis rot symptoms only developed at the stem and calyx end of the fruit during storage. Relatively more calyx-end rot was observed than stem-end rot on the fruit inoculated before August. Incidence of stem-end rot increased significantly on the fruit inoculated near harvest. Incidence of total Phacidiopycnis rot increased as the timing of fruit infection in the orchard approached harvest. *Potebniomyces pyri* was recovered more frequently from sepals than from styles and stamens of the fruit. Most infections on sepals were associated with the necrotic tissues. Naturally occurring necrotic tissues occurred on more than 85% and all sepals in the early fruit-growing and late growing seasons, respectively. Such necrotic tissues on sepals could serve as potential infection sites for *P. pyri*. The results may suggest that chemical control of Phacidiopycnis rot should focus on protecting the pedicel (stem) and floral parts of fruit and that fungicides applied near harvest are likely most important in controlling latent infections of pear fruit by *P. pyri* leading to Phacidiopycnis rot during storage.