Abstract

Visible quiescent infections were detected as small (<1 mm) necrotic flecks on green cv. Bing cherry fruit and as reddish halos surrounding tannish spots (1 to 2 mm) on immature, yellow-pink cv. Rainier cherry fruit in commercial orchards in California. *Monilinia fructicola* or *Botrytis cinerea*, the fungal pathogens causing brown rot and gray mold of cherry fruit, respectively, were isolated from most of the viable infections. *M. fructicola* was isolated more frequently from quiescent infections than *B. cinerea* in two years of the study, whereas similar isolation frequencies for both fungi were obtained in the other two years of sampling from one commercial Rainier cherry orchard. Using immature-pink Bing fruit that were inoculated in the laboratory, significantly more visible quiescent infections than active decay were reproduced in 6-, 9-, or 12-h wetness-period treatments after inoculation as compared to 18- or 24-h wetness periods where more active decay developed. Non-visible quiescent infections of *M. fructicola* or *B. cinerea* of immature Bing and Rainier fruit collected 2 weeks before harvest were identified on surface-sterilized, paraquat-treated fruit. In both years of the study, significantly more brown rot and gray mold occurred on the surface-sterilized, paraquat-treated fruit than on the non-treated or surface-sterilized fruit, indicating the presence of non-visible quiescent infections by these fungi in cherry fruit. Thus, for the first time, we demonstrated the presence of visible quiescent infections caused by *M. fructicola* and *B. cinerea* and we confirmed the occurrence of non-visible quiescent infections in sweet cherry fruit in California.