

Abstract

Biocontrol capability of the yeasts *Trichosporon* sp. and *Cryptococcus albidus* against *Botrytis cinerea* and *Penicillium expansum* was evaluated in apple (cv. Golden Delicious) and pear (cv. Jingbai) fruits at 1°C in air and under controlled atmospheres (CA) with 3% O₂ + 3% CO₂ or 3% O₂ + 8% CO₂. *Trichosporon* sp. controlled gray mold and blue mold of apple fruits more effectively than *C. albidus* ($P < 0.05$). Apple fruits treated with *Trichosporon* sp. and *C. albidus* had a lower incidence of gray mold rot than blue mold rot in the same storage conditions. Biocontrol efficacy of the yeasts for controlling gray mold and blue mold was better in apples than in pears. Populations of the yeasts in drop-inoculated wounds in fruits increased rapidly after 20 days at 1°C both in air and in CA conditions. There was no significant difference in colony diameters of the two pathogens cultured in 0 to 15% CO₂ concentrations after 7 days at 20°C, but the colony diameter of both *B. cinerea* and *P. expansum* at 20% CO₂ was significantly less than in other treatments ($P < 0.05$). CA with 3% O₂ + 8% CO₂ inhibited the pathogenic fungi more than CA with 3% O₂ + 3% CO₂.