

Title Biological control of postharvest diseases of peach with *Cryptococcus laurentii*
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Abstract

Cryptococcus laurentii was evaluated for its activity in reducing postharvest gray mold decay, blue mold decay and *Rhizopus* decay of peach caused by *Botrytis cinerea*, *Penicillium expansum* and *Rhizopus stolonifer* respectively, and in reducing natural decay development of peach fruits. The concentrations of antagonist had significant effects on biocontrol effectiveness: the higher the concentrations of the antagonist, the lower the disease incidence. At concentrations of *C. laurentii* at 1×10^9 CFU ml⁻¹, the gray mold decay was completely inhibited after 4 days incubation at 25 °C, while the control fruit had 50% decay, when inoculated with *B. cinerea* spores suspension of 1×10^5 spores ml⁻¹; no complete control of the blue mold or *Rhizopus* mold was observed, when peach fruits were stored at 25 °C for 4 days (challenged with *P. expansum*) or 5 days (challenged with *R. stolonifer*) respectively, but the decay was distinctly prevented, the incidence of blue mold or *Rhizopus* mold was reduced by 78.6% or 80% respectively, compared with control, at challenged with *P. expansum* or *R. stolonifer* spores suspension of 5×10^4 spores ml⁻¹, respectively. *C. laurentii* significantly reduced the natural development of decay and did not impair quality parameters of fruit following storage at 2 °C for 30 days followed by 20 °C for 7 days.