Title Control of *Penicillium expansum* with potassium phosphite and heat treatment

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Abstract

Potassium phosphite (Phi) was evaluated for its in vitro activity against *Penicillium expansum* and for its potential long-term efficacy against postharvest blue mold infections on apple fruit. Phi amended to malt extract agar medium at 2 and 4 mg/ml completely inhibited mycelial growth and conidial germination, respectively. Conidia of *P. expansum* suspended for 3 min in a solution of 2 mg/ml Phi at 20 °C or heated to 50 °C germinated at 53 and 0%, respectively. Disease incidence of *P. expansum* on Elstar apples wounded and inoculated with a thiabendazole-resistant isolate was reduced significantly ($P = 0.01$) following a curative treatment with Phi at 2 mg/ml. When applied on freshly harvested unwounded Elstar apples, Phi (2 mg/ml) reduced blue mold incidence about three-fold compared to the control and was found to be as effective as thiabendazole against natural blue mold infections after six months of storage at 2 °C. Our results suggest that potassium phosphite has a potential to be part of the general management program implemented for the control of postharvest blue mold infections on pome fruits.