Title Biological control of gray mold on apple fruits by *Bacillus licheniformis* (EN74-1)

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Abstract

Bacillus licheniformis (EN74-1) was evaluated for the control of gray mold of apple caused by*Botrytis mali*. Dual culture, cell-free metabolite and volatile tests showed that *B. licheniformis* (EN74-1) inhibited growth of the pathogen. Inhibition varied from 46.2% to 65.4% in the dual culture tests; 58.6% to 58.8% in the cell-free metabolite tests; and 28.4% to 33.8% in the volatile tests.*B. licheniformis* (EN74-1) appeared to be a good antagonist of gray mold on apples at 20° and 4°C. It reduced *B. mali* lesion diameter to 9–11 mm compared with to 32–41 mm in the control at 4°C. At 20°C the lesion diameter was reduced to 3.6–8.4 mm for the antagonistic treatment and to 25.8–38.2 mm for the control treatment after 14 days.