

## Abstract

In vitro experiments showed that sodium bicarbonate (SBC) was effective in inhibiting the growth of *Botrytis cinerea* and *Penicillium expansum*. Radial growth of *B. cinerea* and *P. expansum* was completely inhibited at 0.12 M (1%) SBC. Spore germination of *B. cinerea* and *P. expansum* was completely inhibited in PDA containing 0.03 M (0.25%) SBC. Three storage experiments were conducted to investigate the effect of two yeast antagonists alone or in combination with SBC to control postharvest diseases of sweet cherry. In all experiments, treatments were applied to fruit within a hydrocooler prototype. Treatments with *Kloeckera apiculata*, *Metschnikowia fructicola*, SBC or their combinations significantly reduced the total decay incidence and the decay incidence caused by *B. cinerea* and *P. expansum*. The efficacy of SBC treatments at 0.12 and 0.24 M (2%) was equal. The total decay incidence of fruit treated with *K. apiculata*, *M. fructicola*, at 0.12 M and 0.24 M SBC, and control was 56.6, 49.5, 56.8, 47.2 and 87.3%, respectively. *M. fructicola* and *K. apiculata* populations changed little during 60 days of storage at 0 °C. The population of *K. apiculata* on fruit treated with the combination of yeast and 0.12 and 0.24 M SBC was significantly lower than a stand-alone treatment of *K. apiculata*. Similar results were recorded on fruit treated with the combination of *M. fructicola* and 0.24 M SBC. Yeast antagonists did not harm the appearance of fruit while 0.24 M SBC caused a slight injury on stems of fruit.