

Abstract

Postharvest applications of calcium chloride (CC) and sodium bicarbonate (SB) were the most effective of 17 salts to control rots caused by *Botrytis cinerea* on wounded sweet cherries. The combination of CC and SB with a known antagonist (*Aureobasidium pullulans*, strain L47) reduced *Botrytis* rot by 98 and 94%, respectively. Tests with pre- and postharvest treatments were conducted in 2000 and 2001 using CC, SB, and L47, alone or in combination. In both years, postharvest treatments significantly reduced rot incidence compared to the controls. The combinations of L47 + CC and L47 + SB reduced total rots ranging from 62 to 75% and were the most effective. The application of Limpel's formula indicated a significant synergistic improvement in effectiveness when postharvest treatments with the biocontrol agent and either salt were combined. Compared to the untreated control, preharvest applications of the antagonist and salts alone resulted in a significant reduction of rots ranging from 24 to 58%; however, their combined application did not improve the level of control. CC and SB did not inhibit *A. pullulans* in vitro and had no influence on natural epiphytic populations of yeasts, yeast-like fungi, and filamentous fungi on fruit surfaces. In postharvest application, the population of the antagonist was not reduced by the presence of salts, whereas on fruit treated before harvest, its population was lower than that observed on fruit treated with L47 alone.