

## **Abstract**

Efficacy of the biocontrol agent *Bacillus licheniformis* was evaluated under semi-commercial conditions on a mango packing line to control anthracnose and stem-end rot on the mango cultivar 'Keitt'. Mango fruit were treated with either the biocontrol agent applied in hot water (45 °C) followed by a quarter strength prochloraz dip or with the biocontrol agent applied on its own in hot water. These treatments were compared to the untreated control and commercially used prochloraz hot water dip. Treated fruit were dried and waxed on the commercial packing line. Fruit subjected to the prochloraz-biocontrol hot water combination showed reduced anthracnose and stem-end rot incidence after market simulated conditions of low temperature storage at 10 °C with 90% RH and at room temperature (20 °C at 75% RH for 7 days). This integrated treatment retained the fruit colour and firmness with high marketability most effectively, compared to the other treatments. The biocontrol agent was effectively recovered from treated fruit after 21 days storage at 10 °C, 90% RH (6 log units) and declined to 3 log units after an additional 7 days storage at 20 °C, 75% RH. Total recovered bacterial and yeast populations on the fruit surface were higher in fruit subjected to the integrated treatment and held under both storage conditions. In contrast, the total recovered fungal population was higher on untreated control fruit.