

Title Survival and Growth of *Enterobacter sakazakii* on Fresh-cut Fruits and Vegetables
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Citation Program and Abstract Book, IAFP 2005 (International Association for Food Protection) - 92nd Annual Meeting, 14-17 August 2005, Baltimore, Maryland, USA. 256 pages.
Keyword fresh-cut produce; *Enterobacter sakazakii*

Abstract

Enterobacter sakazakii is known to cause infections in infants and elderly immunocompromised individuals. Its documented presence in food processing plants, homes, and other environments raises concern about its ability to survive and grow in a wide range of foods. We conducted a study to determine the survival and growth characteristics of *E. sakazakii* on fresh-cut lettuce, cabbage, carrot, cucumber, tomato, apple, strawberry, watermelon, and cantaloupe and in juice prepared from these fruits and vegetables. Inoculated produce (2.6 log CFU/g) and juice (1.5 log CFU/ml) were stored at 4, 12, and 25°C and monitored for populations of *E. sakazakii* for up to 7 days. Populations steadily declined on produce and in juice but were detected throughout storage at 4°C. *E. sakazakii* grew on fresh-cut watermelon, cantaloupe, apple, cucumber, and tomato and in watermelon, carrot, cucumber, and lettuce juice at 12°C. Growth occurred at 25°C on all produce except strawberries and in all juices except, strawberry and cabbage. Fresh-cut watermelon, cantaloupe, cucumber, apple, and tomato supported population increases of 1 to 3 log CFU/g within 3 days at 12°C and 4 to 6 log CFU/g within 2 days at 25°C. Growth of *E. sakazakii* in juices at 25°C was followed by reductions to undetectable populations (< 1 CFU/ml) within 2 to 4 days post inoculation. Death was concurrent with decreases in pH, which were attributed in part to growth of lactic acid bacteria. Results show that *E. sakazakii* can grow on a wide range of temperature-abused fresh-cut produce and produce juice.