

Title Fate of *Escherichia coli* O157:H7, *Salmonella* and *Listeria innocua* on minimally-processed peaches under different storage conditions

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Abstract

Consumption of fresh-cut produce has sharply increased recently causing an increase of foodborne illnesses associated with these products. As generally, acidic fruits are considered 'safe' from a microbiological point of view, the aim of this work was to study the growth and survival of *Escherichia coli* O157:H7, *Salmonella* and *Listeria innocua* on minimally-processed peaches. The three foodborne pathogens population increased more than 2 log₁₀ units on fresh-cut peach when stored at 20 and 25 °C after 48 h. At 10 °C only *L. innocua* grew more than 1 log₁₀ unit and it was the only pathogen able to grow at 5 °C. Differences in growth occurred between different peach varieties tested, with higher population increases in those varieties with higher pH ('Royal Glory' 4.73 ± 0.25 and 'Diana' 4.12 ± 0.18). The use of common strategies on extending shelf life of fresh-cut produce, as modified atmosphere packaging and the use of the antioxidant substance, ascorbic acid (2% w/v), did not affect pathogens' growth at any of the temperatures tested (5 and 25 °C). Minimally-processed peaches have shown to be a good substrate for foodborne pathogens' growth regardless use of modified atmosphere and ascorbic acid. Therefore, maintaining cold chain and avoiding contamination is highly necessary.