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P2-80 Treatment with Warm Water Containing Ethanol for Controlling *Salmonella* spp. on Post-harvest Mangos

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Exhibit Hall (Rhode Island Convention Center)

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Introduction : An outbreak of salmonellosis in the United States associated with consumption of Brazilian mangos has been documented. A hot water immersion treatment to kill fly larvae is thought to be responsible for contamination. Alternative treatments such as a mixture of warm water and ethanol have not been evaluated for effectiveness in killing *Salmonella* on mangos.

Purpose: To evaluate the combined effects of warm water and ethanol to control *Salmonella* on mangos.

Methods: Mangos were spot-inoculated with *Salmonella*, dried, and immersed in water containing ethanol (0, 1, 3, 7, and 9%) at 46°C for 70 min, then cooled in water at 21°C for 30 min. Populations of *Salmonella* on mangos were evaluated before and after treatments. Physical-chemical analysis of treated and control mangos stored for up to 7 days at 25°C and 75% RH were also performed.

Results: An initial population of *Salmonella* on inoculated mangos (5.7 log CFU/g) was reduced to an undetectable level (less than 1.0 log CFU/g) on mangoes treated with warm water containing 3 – 9% ethanol. Reduction on mangos treated with warm water containing no ethanol or 1% ethanol were 3.0 and 3.8 log CFU/g, respectively. Treatment did not affect storage quality.

Significance: Treatment of mangos with warm (46°C) water containing ethanol (3%) for 70 min is effective in reducing *Salmonella* by at least 4.7 log CFU/g without compromising quality.

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