Title	Evaluation of Steam Blanching for *Salmonella enteritidis* Reduction on Almond Surfaces
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Abstract

This study was conduced to investigate the effectiveness of steam blanching (204 F) for reducing *Salmonella enteritidis* on almond surfaces. Batches of 25 g "Nonpareil" almonds were inoculated with 10^{7-8} CFU/ml of either *S. enteritidis* cocktail (*S. enteritidis* 43353, ME-13, ME-14) or *S. enteritidis* PT-30 and allowed to dry overnight. Inoculated almonds were then subjected o steam treatment through a pilot-sized blanching machine for time intervals of 5, 15, 25, 35, 45, 55, and 65 s. Survival of *S. enteritidis* was evaluated with tryptic soy agar (TSA) and xylose lysine desoxycholate (XLD) for injured and healthy cells, respectively. Results indicate no significant differences ($P > 0.05$) between the two *S. enteritidis* inoculums. Reduction of *S. enteritidis* increased as a function of treatment time, with 25 s being sufficient to achieve a 5-log reduction. Though steam blanching resulted in more reduction as treatment time increased, it also resulted in degradation of almond qualities. Discoloration and visible formation of wrinkles were observed after seam blanching of 35 s, agreeing with other almond investigations stating that steam treatments of longer than 30 to 40 s would negatively affect almond qualities. We thus conclude that steam blanching of 25 s is effective to achieve a 5-log reduction of *S. enteritidis* without compromising almond quality.