

Title Modelling of *Escherichia coli* O157:H7 growth at various storage temperatures on beef treated with electrolyzed oxidizing water

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Abstract

The influence of storage temperature (4, 10, 15, 20, 25, and 30 °C) on the growth of *Escherichia coli* O157:H7 in beef untreated (control) and treated by acidic electrolyzed oxidizing water (AcEOW) or slightly acidic electrolyzed oxidizing water (SAcEOW) was examined. A Baranyi model was employed to describe growth parameters such as specific growth rate (SGR) and lag time (LT) as a function of storage temperature. SGR increased and LT declined with rising temperatures in all samples. There were no significant differences between the SGR and LT values obtained from beef treated with AcEOW or SAcEOW. Secondary models were established for SGR and LT to evaluate the effects of storage temperature on the growth kinetics of *E. coli* O157:H7 in treated and untreated beef. Mathematical evaluation was carried out to validate the performance of the developed models.