ABSTRACT

Evaluation of Peroxyacetic Acid as a Potential Pre-Grinding Treatment for Control of Enteric Pathogens on Fresh Beef Trim. (August 2004)

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Peroxyacetic acid was evaluated in four separate trials for ability to reduce populations of *Escherichia coli* O157:H7 and *Salmonella* serotype Typhimurium (ATCC 13311) on fresh beef trim. Trial 1 examined the effectiveness of peroxyacetic acid on individual pieces of fresh beef trim. Trial 2 was performed to evaluate the effectiveness of peroxyacetic acid at low levels of contamination on batches of trim. Trial 3 studied the washing effect of the dip due to water. Lastly, Trial 4 compared the effectiveness of peroxyacetic acid to lactic acid. At various inoculation levels, peroxyacetic acid reduced populations of rifampicin-resistant *E. coli* O157:H7 and *S. Typhimurium* by approximately 1.0 log CFU/cm$^2$. Much of the reductions recorded in Trials 1 and 2 may have been due to the washing effect of the dip. Trial 3 showed that approximately half of the reduction was due to the water dip. In addition, as shown in Trial 1, increases in concentrations (> 200 ppm) did not significantly increase log reductions of rifampicin-resistant *E. coli* O157:H7 and *S. Typhimurium*. Following a water dip in Trial 4, peroxyacetic acid caused a reduction of 0.7 log CFU/cm$^2$ in *E. coli* O157:H7 and 1.0 log CFU/cm$^2$ in *S. Typhimurium*, whereas lactic acid caused reduction of 1.3 log CFU/cm$^2$. 
in *E. coli* O157:H7 and 2.1 log CFU/cm² in *S. Typhimurium* following the water dip.

Peroxyacetic acid was not more effective than 2% L-lactic acid in reducing pathogens on fresh beef trim.