The Fate of *Salmonella* Typhimurium and *Escherichia coli* O157 on Hot Boned versus Conventionally Chilled Beef

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Abstract

This study investigated the fate of *Salmonella* Typhimurium and *Escherichia coli* O157 on hot boned versus conventionally chilled beef. Beef samples were individually inoculated with *S.* Typhimurium ATCC 14028, *S.* Typhimurium 844, *E.* coli O157 EDL 933 or *E.* coli T13. Half the samples were subject to the same time-temperature chilling profile used for conventionally chilling beef carcasses while the other half was subject to hot boned conditions. The surface pH (5.5) and aw (0.95 to 0.97) were stable. *S.* Typhimurium and *E.* coli O157 counts, which decreased by up to 1.0 and 1.5log₁₀cfu cm⁻², respectively, were statistically similar (P>0.05), regardless of the chilling regime applied, with the exception of *E.* coli O157 EDL 933, where the counts on hot boned beef were significantly (P<0.05) higher. It was concluded that any decrease in pathogenic bacteria during beef chilling may be significantly (P<0.05) less for hot boned beef depending on the bacterial strain. Hot boning may therefore result in an increased risk to the consumer.


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