

GUIDANCE ON THE APPROPRIATE COOKING FOR MECHANICALLY TENDERIZED BEEF (MTB)

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Beef steaks, 2 cm thick were each inoculated at 3 sites in the central plane with *Escherichia coli* O157:H7 at numbers of 5.9 ± 0.3 log CFU/site. Temperatures at steaks centers were monitored during cooking on a hot plate or the grill of a gas barbeque. Steaks were cooked in groups of five using the same procedures during cooking each steak to the same temperature, then the surviving *E. coli* O157:H7 at each site were enumerated. When steaks cooked on the hot plate were turned over every 2 or 4 minutes during cooking to temperatures between 56 and 62°C, no *E. coli* O157:H7 were recovered from steaks cooked to ≥ 58 °C or 62 °C, respectively. When steaks were cooked to ≤ 71 °C and turned over once during cooking, *E. coli* O157:H7 were recovered from steaks in groups turned over after ≤ 8 min, but not from steaks turned over after 10 or 12 min. *E. coli* O157:H7 were recovered in similar numbers from steaks that were not held or held for 3 min after cooking when steaks were turned over once after 4 or 6 min during cooking. When steaks were cooked on the grill with the barbeque lid open and turned over every 2 or 4 min during cooking to 63 or 56 °C, *E. coli* O157:H7 were recovered from only steaks turned over at 4 min intervals and cooked to 56 °C. *E. coli* O157:H7 were recovered from some steaks in groups turned over once during cooking on the grill, and held or not held after cooking to 63 °C. *E. coli* O157:H7 were not recovered from steaks turned over after 4 min during cooking to 60 °C on the grill with the barbeque lid closed or closed after 6 min. Apparently, the microbiological safety of mechanically tenderized steaks can be assured by turning steaks over at intervals of about 2 min during cooking to ≥ 60 °C in an open skillet or on a barbecue grill. If steaks are turned over only once during cooking to ≥ 60 °C, microbiological safety may be assured by covering the skillet or grill with a lid during at least the final minutes of cooking.

CONCLUSIONS: Irrespective of the degree of doneness, MTB steaks may not be microbiologically safe if they are turned over only once during grilling. MTB steaks will be microbiologically safe if they are turned over more than once during cooking to at least a medium rare condition (63 °C).

