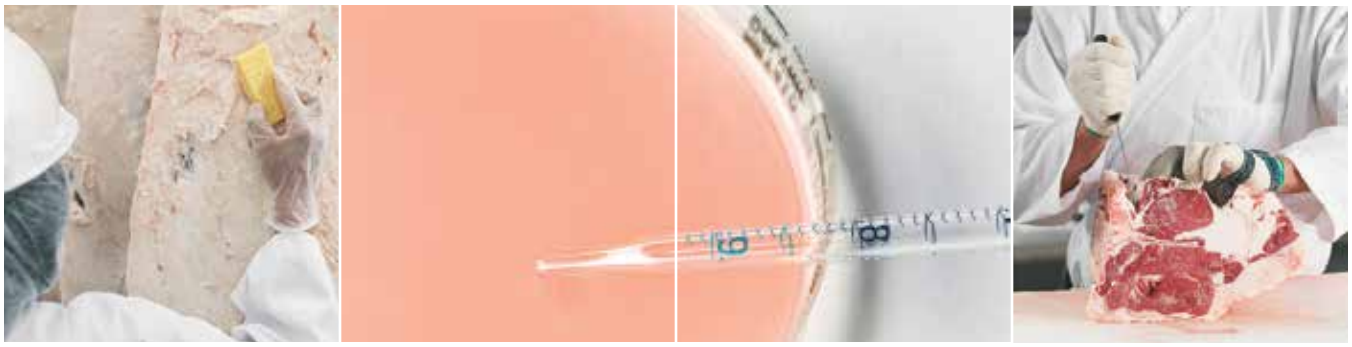
E. coli O157
Research and Education Strategy Fact Sheet



Cooking Minute Steaks

About Beef Minute (Cubed) Steaks

One of the popular ways of mechanically tenderizing meat is cubing in which a machine with two sets of pointed discs cut muscle fibers from boneless cuts without tearing them (Figure 1). Cubing can also be done manually using a meat mallet. In the cubing process, irregular pieces of meat can also be "knitted" together to form a more attractive cut. Cubed steak is also called a minute steak because it can be cooked quickly.

How Canadians Cook Minute Steaks

A survey of Canadian consumers showed that the majority prefer to cook their minute steaks by pan frying (63%) and to a degree of doneness of medium (71°C) or higher (68%). The vast majority of consumers (96%) flip their minute steaks once or more during cooking.[1]

1. *National survey of 1,000 Canadian consumers commissioned by the Canadian Cattlemen's Association and conducted by an independent market research firm.*

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ALMA Alberta Livestock and Meat Agency Ltd.

CANADIAN BEEF CATTLE CHECK-OFF

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CCA CANADIAN CATTLEMEN'S ASSOCIATION
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Research on Minute Steaks

Laboratory research was performed at the AAFC Lacombe Research and Development Centre. Approximately 10 million *E. coli* O157:H7 bacteria were injected at multiple locations into minute steaks of approximately 125 grams in weight. Such high levels of *E. coli* bacteria would not be found in reality, however they are utilized to test cooking methods of minute steaks in the laboratory.

The inoculated minute steaks were cooked on a hot plate operated at 200°C, to simulate medium to high heat pan frying. Various cooking times and flipping frequencies were examined along several end-point internal temperatures.

When minute steaks were turned over twice during cooking to a final temperature of 71°C at the thickest point of the meat, it was possible to destroy one million or more *E. coli* O157. This type of reduction is considered by Health Canada to ensure food safety. When minute steaks were cooked to 63°C and flipped twice there was not always an adequate reduction of *E. coli* O157. When minutes steaks were turned three times and cooked for a total of eight minutes or were turned four times and cooked for six minutes, *E. coli* O157:H7 throughout the steaks was eliminated. The average final temperatures reached under these conditions was 72 and 67°C, respectively.

Conclusions

One cooking method to ensure the safety of minute steaks is to turn them over twice during cooking to 71°C. The majority of Canadians already prepare minute steaks in this manner.

A

B

Fig. 1 Mechanical tenderizer (A) and its mechanisms (B) used for making minute steaks.

The CCA is a non-profit federation comprised of eight provincial member cattle associations that provide representation to a national, producer-led board of directors. The CCA's vision is to have a dynamic, profitable Canadian beef industry with high-quality beef products recognized as the most outstanding by customers at home and around the world.

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