

E. coli O157

Research and Education Strategy Fact Sheet



Cooking Mechanically Tenderized Steak

Beef Quality and Mechanical Tenderization

Beef tenderness has been shown to be a major contributor to consumer satisfaction. Tenderness in beef is determined by the amount and type of connective tissue and muscle fibres. Tenderness can be improved by aging as well as by cooking methods, such as the use of moist heat over extended periods, which can soften connective tissue. The overall tenderness of meat can also be improved by cutting through muscle fibres and connective tissue using blades or needles. Mechanical tenderization can enhance eating quality, especially beef made from parts of the animal used in locomotion which are naturally tougher. Tenderness is enhanced without changes to the nutritional value of beef.

About Mechanically Tenderized Beef

Mechanical tenderization has been used by the Canadian beef industry for many years at retail stores, meat processors and in the restaurant sector. Mechanical tenderization can also occur at home, as tenderizing tools intended for consumer use are available. Regardless of where it is used, mechanical tenderization is typically performed by passing blades or needles through meat products. Often this tenderizing treatment does not produce visible changes to the product.



Financial support for this research was provided by the Alberta Livestock and Meat Agency, the Beef Cattle Research Council and the Canadian Beef Cattle Check-off.

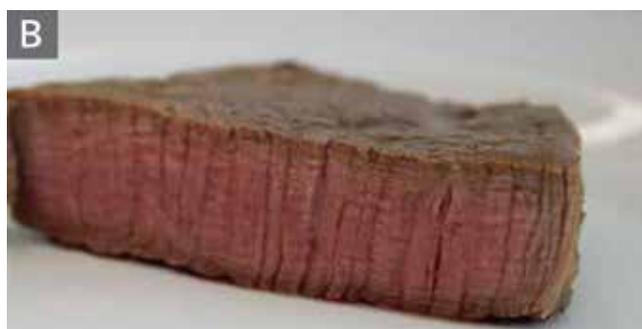
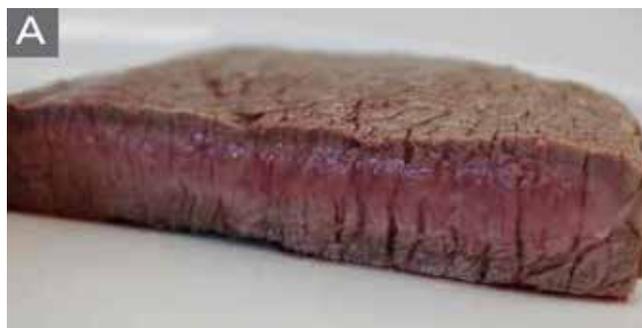


Research on Tenderized Steaks

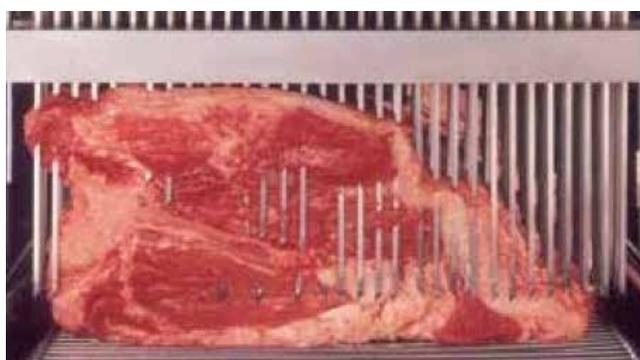
Due to the potential for bacteria on the exterior of beef to be transferred to the centre of the product it is important that mechanically tenderized beef products are not cooked to less than medium-rare (63°C or 145°F). In the case of steaks, research performed at the AAFC Lacombe Research and Development Centre indicated that the edges of a steak may at times be cooler than the centre. If a steak is turned over only once the temperature reached throughout the steak can be inconsistent. By turning over the steak at least twice when cooking to 63°C, the temperature will be more even which is helpful from both a food safety and an eating quality perspective.

Conclusions

Mechanically tenderized beef steaks and roasts are now required by Health Canada to be labelled so they can be recognized by consumers. These labels also include cooking instructions which indicate that tenderized beef should be cooked to a minimum internal temperature of 63°C for both steaks and roasts. This temperature corresponds to a medium-rare doneness level. An additional instruction is provided for steaks that recommends to turn the steak over at least twice during cooking. These procedures are easy to follow and already utilized by the majority of Canadians for cooking untenderized beef products.



Steak A was turned over every four minutes while cooking to a 63°C internal temperature. Steak B was turned every 60 seconds while cooking to the same 63°C internal temperature. Doneness level in steak B is more even throughout the steak.



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.