

Ridding meat of E. coli

July 3 2008

You may be able to enjoy a rare hamburger soon, thanks to a discovery made by a team of University of Alberta researchers.

The team, led by Lynn McMullen and Michael Gänzle of the Department of Agricultural, Food and Nutritional Sciences, has found a way to introduce bacteria into meat while it's being processed that will eliminate the threat of E.coli bacteria.

Current food handling and sanitation procedures eliminate virtually all harmful bacteria found on meat but, despite meat processors' best attempts to reduce risk of disease and spoilage, a form of the threatening bacteria still manages to survive in some cases.

While illness due to strains of the E. coli bacteria are rare, they can cause very serious infections, and in some cases, be fatal.

The harmful strain of the bacteria lives on the outside of meat and can only be killed through high heat. As hamburgers are made of ground beef, which mixes the outer and inner meat, they must be cooked thoroughly to kill the E. coli. However, you can enjoy a steak grilled to rare perfection as long as the outside of the piece of meat is cooked.

"The trouble is that right now, the way meat is processed, all bacteria are eliminated," explained McMullen. "There's the loss of good bacteria with the bad ... kind of like throwing the baby out with the bathwater."

The team studied current meat sanitization process that includes three

primary steps: first, the carcasses are exposed to steam, which kills much of the bacteria hosted by the carcass with heat; next, the carcass undergoes a lactic acid wash and, lastly, is quickly chilled in 'blast chillers' to stress or eliminate the E. coli organism.

The bacteria that McMullen and Gänzle seek to introduce, just before or immediately after the chilling process, are not unlike the probiotics used in yogurt and dairy products.

"The idea to introduce organisms to meat, to treat the carcasses with same bacteria that are used in dairy has been tried before but not successfully," said McMullen. "The bacteria we introduce not only thrive on the outside of the meat but may actually burrow into the muscle tissue to live, which would provide an extra level of protection."

The result of this introduction is that if E. coli were transferred from the outside of the carcass during the cutting and preparation of the meat found on the shelves of stores, it would be met by the "good" live cultures which, in theory, would help control the harmful E. coli bacteria.

And that may allow consumers the luxury of enjoying ground beef that isn't necessarily well done.

Source: University of Alberta

Citation: Ridding meat of E. coli (2008, July 3) retrieved 26 April 2024 from <https://phys.org/news/2008-07-meat-coli.html>

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