New Way To Protect Meat

WASHINGTON, D.C.–A new way to protect consumers from harmful bacteria that may be found in meat has been discovered by scientists from California State Polytechnic University, Pomona. The results of their research were presented at a USDA-sponsored conference on foodborne bacteria that was held recently.

The breakthrough involves applying a small amount of lactoferrin from cow's milk to the surface of meat during processing. Lactoferrin is a naturally-occurring protein in mammalian milk that is credited with protecting infants from harmful bacteria while their immune systems are developing. By discovering how to activate the lactoferrin molecule, scientists were able to mimic its function on meat.

Laboratory tests showed the activated form of lactoferrin to be effective against more than 30 different kinds of harmful bacteria, including E. coli O157:H7, Salmonella and Campylobacter. Lactoferrin does not change the taste, flavor, color, or appearance of meat.

"We have borrowed a page from mother nature," said A.S. "Narain" Naidu, Ph.D., a medical microbiologist who heads the Center for Antimicrobial Research at Cal Poly Pomona. "We have taken a natural compound with antimicrobial properties and discovered a way to make it work on meat surfaces to provide a protective barrier against harmful bacteria."

The University's research involved applying an activated form of lactoferrin to meat tissue surfaces that had been purposefully contaminated with extremely high concentrations of bacteria. The lactoferrin formulation proved effective in removing E. coli O157:H7 which has been linked to recent meat-related illnesses.

"The research objective was to use lactoferrin to prevent bacteria from attaching and multiplying on meat surfaces using the same natural compound that has functioned this way in mammals for thousands of years," said Dr. Naidu, who has studied lactoferrin and other natural antimicrobial agents for nearly 20 years.

According to Dr. Naidu, the amount of activated lactoferrin required to protect a serving of meat is thousands of times less than the amount of lactoferrin found in a single glass of milk. Lactoferrin currently is produced from whey, a by-product in the manufacture of cheese from cow's milk.

Dr. Naidu said activated lactoferrin can be applied easily to meat products at the processing plant as an added step to the meat industry's existing multiple-hurdle bacterial control process. Because lactoferrin remains on the meat surface, he said the compound may provide lasting protection from bacterial exposure after processing.

Research funding and support were provided to Cal Poly Pomona by Farmland National Beef, the only farmer-rancher owned beef processor in the country and the fourth-largest beef processor overall. Based in Kansas City, Mo., Farmland National Beef Company is jointly owned by Farmland Industries, Inc., and U.S. Premium Beef.

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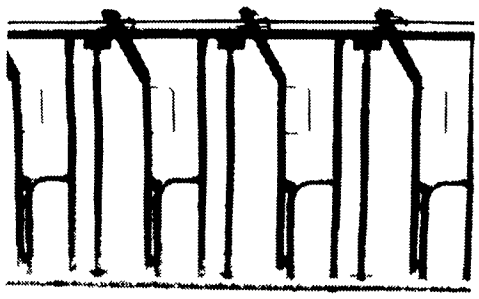

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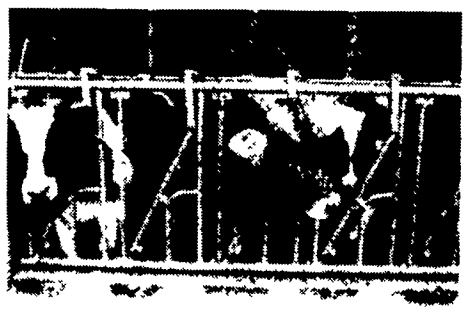

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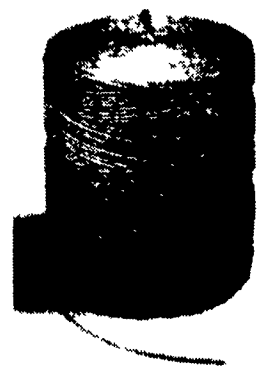

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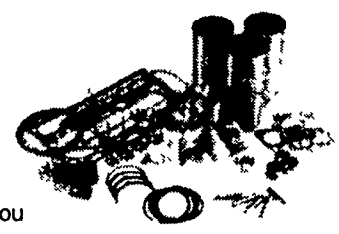

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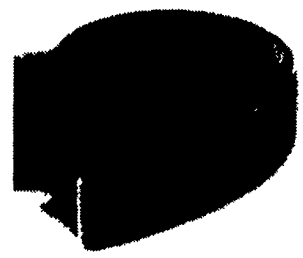

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