Plant aids quest for safer beef

Tech researchers find seaweed fights E.coli

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Researchers believe the answer to guarding the nation's beef supply against *E.coli* may lie in the sea.

Texas Tech agricultural researchers announced Tuesday that a brown marine plant product called Tasco has been found to help reduce the pathogen *E.coli* in beef cattle by 300 percent.

♦E.coli

■What is E.coli? - A harmless bacteria commonly found in the intestines of healthy animals and humans, as well as in water, milk and soil. But the 0157:H7 strain of E.coli found in cattle and deer can be harmful to humans, especially older adults and the young.

Source: American Meat Institute

"We have documented that in the research feedlot, in the laboratory and in the commercial feedlot," said Vivien Gore Allen, Thornton professor of plant and soil science at Texas Tech. Tuesday's announcement stemmed from 10 years of research.

"If the results of our research prevent the untimely death of even one person, it is all worthwhile," Allen said.

The study has been a joint collaboration between Texas Tech and the Excel Corp., Acadian Agritech, the Texas Beef Council, National Cattleman's Beef Association, San Antonio Livestock Exposition, C-Bar Feed Yard, Ranchers Renaissance and Caprock Feeders.

Allen said Tasco, already available commercially, is one of the first natural compounds shown to reduce *E.coli* when fed to beef cattle 14 days before they are slaughtered and processed, a method not used previously in the cattle industry.

A byproduct of the research, Allen said, is that Tasco has been found to increase the shelf life of beef a day longer, as the beef is able to retain a more desirable color. It also has been shown to increase the marbling of beef, which improves the quality grade.

"In order to reduce the threat of *E.coli,* we're getting these other effects as well," Allen said. "It's icing on the cake."

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E.COLI: *Seaweed helps combat bacteria*

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Acadian Agritech, a privately owned company based in Nova Scotia, Canada, developed and holds the patent to Tasco. The brown seaweed used for the product is harvested from an intertidal zone around northeastern Canada.

Harmless Escherichia coli (*E.coli*) bacteria are a common component of the digestive tract of healthy animals and people, but the 0157:H7 strain of *E.coli* found in cattle and deer can be harmful to humans, and sometimes deadly. *E.coli* pathogens can be inadvertently transmitted to humans through fecal matter during meat processing and through improper food handling.

Those most susceptible to sever illness from *E.coli* 1057:H7 are the elderly, the young and those with compromised immune systems, such as people with AIDS and those who are undergoing chemotherapy.

Since 1994, the beef industry has invested more than $12 million in applied research on E.coli 0157:H7 food safety, according to the Texas Beef Council.

"In the U.S., we have one of the safest beef supplies in the nation," said Mike De La Zerda, beef quality manager for the Texas Beef Council. "To be able to eliminate food safety concerns is a plus to the industry.

"This is definitely something producers are going to be able to use to combat food-borne pathogens. When producers and feed yards start hearing about this, I'm confident that they'll welcome this new technology, given the results that we've seen so far."

In April, Texas Tech researchers Mindy Brashears and Michael Galyean announced that a study they conducted in conjunction with the American Meat Institute Foundation indicates that bacteria introduced into the diet of cattle can reduce instances of the *E.coli* 0157:H7 strain by 50 to 75 percent.

The probiotic normally fed to cattle to enhance performance with regard to feed intake and weight gain reduces food-borne pathogens in meat.

"Testing in the laboratory followed by field testing has allowed us to improve the quality of been for consumers," said Bob Sweazy, vice president for research, graduate studies and technology transfer at Texas Tech.

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♦E.coli facts

■ **Illness from Exposure** - Illnesses related to *E.coli* 0157:H7 exposure occur because the 0157:H7 emits a toxin that can cause hemorraghic colitis, a disease with symptoms such as bloddy diarrhea and severe abdominal pain.

■ **Incidence** - The Food and Safety Inspection Service of the USDA has conducted more than 43,000 tests of ground beed for *E.coli* 0157:H7 since 1994. Through May 2001, 121 or.028 percent were positive for the pathogen.

Source: American Meat Institute