Facilities, methods and technologies to determine real-time biohazards in foods to validate technology readiness – Large scale grinding project

Partners / Sponsors: University of Nebraska, Auburn University, USDA and U.S. Department of Defense.
The researchers have set up a representative commercial grinding system in the BRI. They contaminate a small portion of boneless beef trim before grinding to determine how the contamination becomes distributed throughout several thousands of pounds of finished ground beef.

**it matters**

The researchers are studying *E. coli* O157:H7 and a similar group of microorganisms called non-O157 STEC, which is short for Shiga toxin-producing *Escherichia coli*. While both organisms can contaminate meat naturally, they potentially could be used in acts of bioterrorism. The research is helping to address both possible scenarios.

"These are very important and relevant questions because when industry members are doing tests and they find contamination, the entire lot has to go to cooking operations, which constitutes a major loss. This research will help beef processors make decisions to reduce STEC-associated risks in beef, and will provide procurement guidance to ensure security of the military’s food supply."

**Principal investigator:**
**Randy Phebus, Kansas State University**
professor of animal sciences and industry

**Co-principal investigators:**
Richard Oberst, Kansas State University
professor of microbiology
Reddi Thippareddi, Kansas State University
professor of food science
David Marx, University of Nebraska
professor of statistics
Manpreet Singh, Auburn University
professor of food safety
John Luchansky, research scientist,
USDA Agricultural Research Service
Anna Porto-Fett, research scientist,
USDA Agricultural Research Service
Six students and research assistants

**Pathogen:**
Shiga toxin-producing *E. coli*