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At K-State Research Focuses on Food Safety, Health for All

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Randall K. Phebus

Oh no, not more news about E. coli ...

Most people are aware of the efforts to reduce health risks from E. coli O157:H7 linked to undercooked ground beef and fresh produce, including spinach and lettuce.

While the focus on minimizing the risks of O157:H7 is ever present, recent concerns about an emerging, cousin-like group of microorganisms — dubbed non-O157 STECS (short for Shiga Toxin Producing

leadership role in identifying potential food contamination and developing successful interventions to curb growing concerns about STECS and other potentially life-threatening microorganisms.

The BRI is uniquely set up to allow scientists to replicate commercial systems for livestock processing, identify risk factors for specific pathogens and develop appropriate antimicrobial interventions and detection

that could jeopardize the nation's — and world's — food supply, health and economic stability.”

Much of his current research is underwritten by funding from U.S. Department of Defense grants evaluating the safety of military food supplies, but Phebus said the research also strongly supports a greater understanding of general food safety for all consumers.

At K-State research focuses on food safety, health for all

E. coli) — is the focus of comprehensive research at Kansas State University.

The name has changed slightly, but this broader group of E. coli strains can produce the same toxins and same threat of potentially life-changing illnesses (kidney failure is an example), said Randy Phebus, K-State Research and Extension professor of food safety and defense, who offered a sobering example of an active, healthy 25-year-old female confined to a wheelchair and requiring dialysis following illness due to the foodborne pathogen.

Food should nourish, not harm, said the food safety professor, who noted that K-State is internationally recognized as a center for food animal health and meat safety, and is now being looked to as a leader in new — and increasingly sophisticated — food safety research.

According to Phebus, the addition of the Biosecurity Research Institute, BRI, at K-State positions the university to fulfill a

methods, said Phebus, who explained that the research begins as an animal enters the facility and continues until beef trimmings are ground into hamburger like that which enters the market.

The new research facility is the only one of its kind, where farm to plate food safety can be replicated under one roof, said Phebus, who said that suiting up in protective gear to enter the facility takes about 30 minutes.

“It’s similar to preparing for a moon walk, but keeping researchers safe is the first step in food protection,” he said.

While Phebus has focused on food safety during his 19 years at K-State, the addition of “defense” to his job title speaks to the expanding focus: “Food safety specialists remain concerned about foodborne contaminants and naturally occurring microorganisms, but now must be increasingly watchful in detecting manmade contaminants and the possibility for intentional acts of bioterrorism or sabotage

To make it happen, Phebus and others at K-State, including researchers with the university’s Food Science Institute in the College of Agriculture and the Beef Cattle Institute in the College of Veterinary Medicine, are engaged in the research.

While the research is expected to benefit livestock production at all levels, Phebus said he and others at the university also are actively engaged in additional research and educational collaborations with other universities, governmental agencies and national laboratories.

“Research has to be ongoing,” said Phebus, who is optimistic about ensuring a safe food supply for all.

Phebus is a highly respected food safety scientist and has been selected to chair the International Association for Food Protection’s centennial conference program committee in 2011.

By Nancy Peterson,
K-State Research and Extension News Media Services