Milk transport security project demos prototype to international audience; receives additional $1.2 million for future

By Aimee Nielson

LEXINGTON, Ky., (Oct. 9, 2008) – For more than two years, University of Kentucky College of Agriculture researchers have been heading up a project aimed at improving food safety and defense measures associated with bulk milk transport. As an added bonus, their efforts are streamlining the information gathering process associated with farm milk pickups and deliveries. On Oct. 9, researchers demonstrated the Milk Transport and Traceability Security System in Lexington to show the prototype’s potential to meet the needs of dairy processors, milk marketing agencies and milk transportation companies. U.S. Rep. Hal Rogers was on hand to celebrate the project’s success and talk about its importance.

“As we’ve all seen recently overseas, the security of our milk supply is vital to ensuring the health and safety of our citizens,” Rogers stated. “Solutions are needed to shore up the food supply chain from natural or man-made disasters, and providing calculated technology investments are critical to solving the challenges we face in defending America from the next attack. Through the fine leadership of the National Institute For Hometown Security, as well as our valued university and private-sector partners, the Milk Transport Security System is blazing new trails in this arena. This collaborative project will lead to enhanced security and safety for all our citizens, and I am proud to have provided the funding which makes this research possible.”

UK President Lee T. Todd Jr. spoke to the crowd about Kentucky’s and UK’s national leadership in the project.

“I have often spoken about the need for Kentucky to establish itself as a national leader in areas where we can use our natural expertise to develop solutions to complex problems,” he said. “This milk safety project, funded through our National Institute For Hometown Security,
is a perfect example of how we are leveraging the skills, talent and ingenuity of Kentucky’s colleges and universities to develop a real-life solution to a pressing national concern.”

Key components of the system include a small, user-friendly, handheld computer device a hauler will use to enter typical milk ticket information. The handheld device will provide the hauler with the most up-to-date information regarding pickup scheduling and logistics, among other data. The tanker itself will be outfitted with a computer processor to store the milk data. Other key components on the tanker include a Global Position System unit, locks on the dome lid and rear door, a key pad to enter security codes when the handheld device is not available and temperature sensors for the sample cooler and cargo.

“The system is designed to incorporate security and accountability with the electronic locks, which will interact with other parts of the system to only allow legitimate users, such as a milk hauler, inspector, etc., access to the tanker,” said Chris Thompson, UK Regulatory Services milk coordinator.

“Access to the tanker is thoroughly documented, and inappropriate access will be ‘red flagged’ for the system users,” said Fred Payne, UK biosystems and agricultural engineering professor.

Information typically recorded on the milk ticket, tanker wash tag and other documentation will be entered into the handheld device. This information will be accumulated, tracked and provided to appropriate individuals who are using the system, Thompson added.

Payne and Thompson have been guiding a team of researchers from UK, Western Kentucky University and the University of Louisville in the project. The U.S. Department of Homeland Security through the National Institute For Hometown Security in Somerset funded the initial $1.5 million project and announced additional funds of nearly $1.2 million for future development.

“The Department of Homeland Security's Kentucky Critical Infrastructure Protection Program focuses on new technology to underpin the nation’s capacity to safeguard against terrorist threats,” said Ewell Balltrip, president and chief executive officer of The National Institute For Hometown Security. “The University of Kentucky College of Agriculture’s Milk Transport Security System exemplifies the program’s mission to discover, develop and deploy these assets for the benefit of hometowns across the country.

“This system has attributes that address not only security concerns, but business concerns. While designed as a system to safeguard milk as it is transported from the dairy farm to the processing plant, it also delivers business benefits related to information gathering and processing. We think this combination will be attractive to end-users.”
Agriculture Associate Dean for Research and Director of the Kentucky Agricultural Experiment Station Nancy Cox said the new funding will allow researchers to fine tune the system in the next year.

“The College of Agriculture is grateful for support from the National Institute For Hometown Security, and in turn for the confidence and support of Congressman Rogers,” she said. “We take seriously the Congressman’s vision for Kentucky’s leadership in agriculture and food security, and this milk security team has achieved national attention. We are especially appreciative of the partnership with the milk processing and hauling industry. To be relevant and useful to them is our major goal.”

The specific objectives for the continuation project include:

• Optimization of the hardware and electronics for the security monitoring system
• Development of an enterprise quality data server system
• Development of commercial quality web-based software
• Demonstration of the system for a one month period

“This project demonstrates the capacity of Kentucky’s university research community to respond to national homeland security requirements,” Balltrip said. “The University of Kentucky partnered with Western Kentucky University and the University of Louisville to develop this system. The Kentucky Critical Infrastructure Protection Program encourages collaborative research efforts to create solutions for the U. S. Department of Homeland Security.”

Writer: Aimee Nielson, 859-257-7707

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