UK College of Agriculture project to boost US milk supply security

By Aimee Nielson and Mark Eclov

LEXINGTON, Ky., (March 26, 2008) – With the reality of 9/11 still deep in the hearts and memories of most Americans, along with recent food recalls, it’s not so far-fetched to believe that someone would try to tamper with the safety of the United States’ food supply.

Because of past threats and future potential security breaches, the federal government is making bulk food defense a priority issue. As part of that effort, the University of Kentucky College Of Agriculture is partnering with the U.S. Department of Homeland Security and the National Institute for Hometown Security in Somerset to make the nation’s milk transportation as safe as possible.

UK Regulatory Services Milk Coordinator Chris Thompson and UK Food Engineer Fred Payne began working on the project in 2006. They created and currently are testing a prototype milk security monitoring system they believe will provide assurance that milk, milk samples and the essential milk load and security data are safely transported between dairy farms and milk plants.

Not only has this UK research team developed a good security system for milk trucks, but with input from eight industry collaborators and government agencies, they also have created a whole new data collection system that streamlines the entire record keeping process.

“What we are trying to provide first and foremost is a better security system for our dairy industry and for bulk milk transportation,” Thompson said. “Also, we are providing the added benefits of enabling our dairy partners to gather milk transportation information more quickly and cleanly. We are using our system to electronically collect the information for a normal farm milk pickup that is currently being recorded on handwritten documents. We then transmit the information to the appropriate people throughout the dairy transportation system. We’re capturing and transmitting all this information in near-real time.”

Thompson added that anytime information about bulk milk transportation is available cleaner and faster, it provides efficiencies all across the dairy industry.

Payne partnered with graduate student Brian Luck to develop an electronic monitoring system that not only provides security, but also collects milk data that will be useful to multiple sectors of the dairy industry.

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“The milk transport security system includes a security monitoring system mounted on the tanker itself, which includes a global positioning sensor, electronic locks, a keypad and temperature sensors,” Payne said. “It also includes a handheld computer that the milk hauler uses to enter milk data, such as milk weight and temperature.”

Another piece of the system is a data server that stores the milk data and transportation activities and makes it available to users over the Internet.

Luck believes those three major components will add a new level of protection and efficiency to the milk transportation business.

“Essentially what the industry uses now is a manual seal system that requires extensive handwritten records. If seals accidentally break due to severe road conditions, haulers are required to account for these occurrences and provide explanations for them,” Luck revealed. “Essentially there is a security system in place, but the one we have developed will be an enhancement and make things so much easier as far as keeping up with and tracking security records. I think it’s going to be a big improvement.”

Thompson said that since the industry is so diverse, the UK team has taken a lot of time to plan the project with a national scope in mind. Payne said the system already is proving successful, and they have demonstrated the ability to secure milk during transportation and to automatically collect data.

“We hope to secure additional funding later this year that will allow us to test the system with a small milk transportation company and allow us to optimize the electronics,” Payne said. “If we continue at this pace, there is no reason the system could not be commercialized by 2010.”

Ultimately, the results of the project will be enhanced food safety, limiting potential recalls, verification for desired animal or farm characteristics and improved milk transportation efficiencies.


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