# USDA Releases RFID Animal-Tracking Project Report

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By Claire Swedberg

May 11, 2007—The U.S. Department of Agriculture (USDA) has released a final report on 16 RFID pilot projects related to the National Animal Identification System (NAIS), which predominantly uses RFID technology. Overall, the report concludes, the projects demonstrated "that animal identification and tracing can be implemented successfully in a production environment."

Funded with $6.6 million from the USDA-run Commodity Credit Corporation (CCC), the pilots took place at sites throughout the United States and tested the NAIS system in real-world applications involving beef and pork producers, as well as dairy farmers and slaughterhouses. NAIS, a voluntary state-federal-industry program, is an information system designed to help animal producers and health officials respond quickly and effectively to animal disease outbreaks and other health events in the United States.

The 16 projects' participants employed a variety of RFID systems and methods to tag animals and track their movement. All used low-frequency RFID tags, initially seeing a read rate of only about 60 percent but later making changes that improved performance. "This demonstrates that NAIS will work well," says USDA public affairs specialist Wayne Maloney. The pilots, he explains, "provide concrete examples of the system's capabilities."

The report highlights a number of favorable results. For instance, it notes that the retention rate of an RFID tag (the rate at which it stayed in an animal's ear for the duration of use) was nearly 100 percent—higher than the 96 to 98 percent rate for visual tags.

The pilots proved to be a learning opportunity for the users. "The pilot projects themselves," Maloney says, "allowed people to move forward and make [their RFID technology] work better." Read rates were improved by means of hardware modifications made throughout the pilots. In Kentucky's Southeastern Network Pilot Project (SENPP), for example, slaughterhouse managers found that the width of the alleys, in which 2,700 cattle are herded daily, caused a low read rate because the read range was not long enough to reach every tag. Reader providers Boontech and Allflex USA developed a reader system to accommodate the wide alleyways, resulting in a read rate of about 90 percent.

The pilots also found that some identification programs already underway could integrate with NAIS, making the implementation of RFID a simpler process. For example, at least 50 percent of dairy farmers in Pennsylvania were already participating in the national Dairy Herd Improvement (DHI) program, in which data about each animal is collected and shared electronically. In this case, farmers were able to maintain the same data management system while installing RFID readers to collect that information.

Pilot participants did not always need to invest in RFID interrogators or other expensive equipment. In many cases, they were able to use visual tags to manage animals until the moment they left the premises, at which time they could tag the animals with RFID transponders pre-encoded with ID numbers, sparing the participants the need to buy interrogators. According to the report, most found that RFID led to more accurate records, more efficient recordkeeping and a reduction in errors and labor costs. And at auction markets, it indicates, the use of RFID tags eliminated the potential hazard resulting from physically restraining animals to read the ID numbers of visual tags.

The pilots also determined that not every environment is favorable to RFID technology use. In the Southwest Pilot Project (SWPP), for instance, several facilities had to be modified to keep RF interference from affecting the read rates. This required both retrofitting some existing facilities and actually building some new ones. In addition, producers learned that the correct tag application was important, not only for tag retention but also to prevent infection. About 25 percent of the cattle in one group of the Southwest pilot, for example, suffered infections resulting from misplaced ear tags.

RELATED_ARTICLES The Florida Pilot Program (FPP) focused on finding value-added benefit from the use of RFID technology. By tagging cattle, producers qualified them as source-verified beef, making them eligible for industry-sponsored cash incentives at the time the animals were sold.

Several additional field-trial projects, Maloney says, funded with fiscal year 2005 monies remaining from the amount set aside for the pilots, are now underway. These projects are intended to provide more comparisons of technologies and to more clearly define implementation costs for NAIS. The final report is available here.