

The Canadian Cattle Identification Agency hopes to determine whether RFID technology would provide more benefits than hindrances for Canadian cattle auctions.

By Claire Swedberg

Nov. 5, 2009—The [Canadian Cattle Identification Agency](#) (CCIA), a nonprofit industry-led group established to protect the safety and health of cattle and beef, is testing whether current RFID technology can provide reliable read rates without slowing the operations at cattle auction markets. CCIA's membership consists of trade organizations representing livestock producers and meat processors, as well as related organizations, including the [Livestock Marketing Association of Canada](#) (LMAC), which represents the interests of auction markets, and the [Canadian Veterinary Medical Association](#).

The [Canadian Food Inspection Agency](#) and the CCIA recommend that the Canadian cattle industry install RFID interrogators at all 250 of the nation's auction marketplaces by the end of 2011, according to Rick Wright, the chairman of the CCIA steering committee for the Auction Market Applied Research Project. Such a deployment, he says, would automate the tracking of each animal's arrival and departure. Before that can happen, however, the industry must be convinced the technology is ready.



CCIA's Rick Wright

The results of the Auction Market Applied Research Project testing will be made available to the public after February 2010.

CCIA will test RFID interrogators that can read 134.2 kHz passive RFID tags complying with the ISO 11784 and 11785 standards. Three vendors have provided readers for the study: [Destron Fearing](#), [Aleis International](#) and [Allflex USA](#). While several other vendors offer readers that could have been tested, Wright explains, the group chose only those three because they were able to provide support services, such as consulting assistance with the installations.

The study started in mid-September, when CCIA began equipping eight cattle auction markets across Canada this fall. The organization also brought in three auction markets to the project that already had interrogators in place, in order to test a variety of reader installations at small, midsize and large cattle auctions. Once the study is completed, in mid-December, CCIA hopes to be able to judge whether existing RFID technology offers adequate read rates, yields a reasonable cost-benefit ratio (that is, it offers users a return on investment within several years) and does not hamper operations by slowing down the movement of cattle. CCIA's staff will measure read rates, as well as determine which conditions read rates may increase or decrease. The staff will also measure the rate at which cattle travel through chutes, with and without the technology, thereby determining how much RFID readers may slow down the process.

To launch the program, the Livestock Marketing Association of Canada sent a request for participant

volunteers to its members. The 11 selected represent multiple geographic areas (exposed to varying weather conditions) and multiple sizes of operation, as well as different kinds of cattle. The auction sites are located in British Columbia, Saskatchewan, Manitoba and Ontario. The size ranges from sites that can accommodate 20,000 cattle to those with the capacity for more than 100,000.

The three participants already RFID-enabled are [Ontario Livestock Exchange](#) and [Ottawa Livestock Exchange](#) (also known as Leo's Livestock), in Ontario; and [B.C. Co-op Livestock Sales](#), in British Columbia. The eight new participants are [Ontario Stockyards](#), in Ontario; [Ste. Rose Auction Mart](#), Gladstone Auction Mart, Killarney Auction Mart, and [Winnipeg Livestock Sales](#), in Manitoba; and [Whitewood Livestock Sales](#), [Spiritwood Livestock Sales](#) and [Saskatoon Livestock Sales](#), in Saskatchewan.

RFID tagging of cattle is mandatory in Canada, so all animals coming to the auction have a passive low-frequency (LF) tag already attached to their ears.

Each tag's unique ID number is registered with the federal government, and is linked with the farm at which that animal originated. CCIA's staff has now set up RFID reader portals in various locations at the eight auction sites in which the technology had not yet been installed. The project is using existing reader technology in the other two cases. In all cases, CCIA's employees read the RFID tags that the animals had attached to their ears as calves by workers at the farm where they were born, rather than attaching new tags.

CCIA's staff members on site are charged with noting the RFID read rate of cattle tags as the animals arrive at the auction site and are moved through chutes into the facility. The tags are interrogated once more as the cattle are sold and moved out of the facility to be transported by truck. Using a cabled Internet connection, the readers then transmit the tag ID numbers to a back-end server, where CCIA software stores the read data.

In addition to overseeing the tag reads and ensuring tags are being captured by the interrogators as cattle pass through the chute, CCIA's employees look for any conditions that may cause the read rate to drop, such as cold weather, wet or muddy cattle, or the speed at which the animals traveled through the chute. They are also studying when and why RFID technology may slow down the process of moving cattle through a chute in a timely fashion. Readers have been installed at portals where cattle enter or leave the auction facility. In some cases, the animals will pass through narrow chutes one at a time—such as in the smaller markets—and in other cases, the readers will be installed at five-foot-wide chutes through which multiple cattle may pass at a time.

As the weather gets colder, the technology can be tested in varying temperature conditions, as well as in rain and snow. "It's 5 degrees [Celsius] today and snowing," Wright says. "The cattle are pretty wet." These are the kinds of conditions the participants hope to see more of as winter approaches, he says, so that they can properly test the hardware. According to Wright, the rate at which cattle move could also affect how well the interrogators capture tag reads, as well as whether the technology slows the

animals' movement. Although the fall cattle season (with low beef prices) got off to a slow start, he says he expects a surge of cattle in the coming months to create a greater challenge for the technology.