

**Canadian beef producer uses an RFID-based system to monitor the processing of cattle carcasses at its plant, as well as the location of each animal's meat throughout the supply chain.**

By Claire Swedberg

Nov. 23, 2006—Canadian beef producer [Atlantic Beef Products](#) (ABP), headquartered in Albany, Prince Edward Island, is using hooks embedded with RFID chips to track beef as it is processed throughout its facility. The goal is to be able to provide the [Canadian Food Inspection Agency](#) information on the location of any butchered cow in the plant, as well as maintain an electronic record of what animals are in any package that leaves the plant. This will enable Atlantic Beef to swiftly conduct recalls of all packaged meat specific to a contaminated animal or animals, should this become necessary.

[Merit-Trax Technologies](#) and [Psion Teklogix](#) designed and installed the system, which includes Psion Teklogix's 7035 handheld RFID interrogator and bar code scanner, [Syscan International](#) fixed readers and hooks with embedded 134.2 kHz RFID tags, and Merit-Trax software to integrate reader data into ABP's database. The Psion Teklogix readers have a frost-free feature. This includes an internal heater to eliminate moisture build-up inside the devices, enabling them to scan bar-coded labels and RFID tags in freezers (-35 degrees Celsius) and coolers (-8 Celsius).



ABP's Paul Arsenault

"We wanted a system that would track animals 100 percent throughout the plant," says ABP controller, Paul Arsenault. Live cattle arrive at the plant with bar-coded or 125-kHz RFID tags attached to their ears, and employees use the Psion Teklogix 7035 handheld readers to capture either the bar-code or RFID tag number. This data links to a [Canadian Cattle Identification Agency](#) database with all the animal's health record and life history, including where it was born, where it has traveled, and when.

The plant is equipped with about 500 RFID-enabled hooks on which a slaughtered cow is hung. When the cow is slaughtered, the employee takes a final scan of the cow's bar-code or RFID ear tag with the handheld reader. That number is then recorded in a database for the [Marel](#) meat-processing equipment that APB uses, and is linked to the RFID number on the next two hooks that come down the production line, on which the carcass is hung. This creates an electronic record linking a specific animal to specific hooks, so that it can be located in the plant at any time. The Merit-Trax Technologies' Trax-IT software suite integrates the reader data that will be used for invoicing, food labeling and shipping.

There are six fixed RFID readers at specific points in the processing line, including at the starting point where the animal is slaughtered and at the area where Canadian Food Inspection Agency employees inspect the carcass. The fixed reader at the inspection area captures the RFID number assigned to that

animal, and transmits it to the ABP database, which in turn routes data to the touch screen attached to the ABP Ethernet wired data collection terminal, provided by [Symcod](#).

If inspectors suspect a problem with a carcass, they can condemn it or remove it for further inspection. A Psion Teklogix reader with an 8-foot-long telescopic extension allows the inspector to read the RFID number of the hook on which the animal is hanging. At that point, the inspectors remove the animal from the production line to be further evaluated, and a record of that action is created electronically.

The company also uses the RFID system to record the animal's weight, so that ABP can pay the appropriate amount to farmers, who are paid by the pound. The hook's ID tag is read at the point of weighing and the weight is then linked in the database to the animal on that hook. ABP employees then print a ticket with the animal's hot weight (prior to refrigeration), and its ID number in bar-coded form. That ticket is attached to the carcass. An employee scans the bar code on the ticket and enters grading information, and at that point the office can build invoicing data to pay producers. Without the RFID-based system, says Paul Berry, VP of software development for Merit-Trax, the invoicing process for a plant ABP's size could take four hours or more. For ABP it takes about 15 minutes, he says. Additionally, the use of RFID with bar-coded tickets "shows you can have two technologies cohabitating in the same environment," says Bob Aubertin director of sales and marketing for Merit-Trax Technologies.

RFID readers are also used to record data at the point of cold weight. This is when the cooled meat is weighed again before being packaged, to see if shrinkage has taken place in refrigeration.

ABP also uses the Marel system to track the meat that is cut up and packaged for sale. When the RFID hook drops the meat on the cutting table, the RFID reader captures the hook's ID number, and sends the animal number to the Marel database. The pieces of meat, and even trimming from that meat, are then associated with that animal. When the meat is packaged and boxed, a bar-coded label is placed on the box, and that label's ID number is associated with all the animals that were the sources of that meat, Berry says.

Once a month ABP practices a recall drill, at which time the company keys in the numbers of several animals to determine if they can trace where all its parts are located, either in the plant or elsewhere in the supply chain. .

"RFID has been great for us," says Arsenault. "It makes the whole system more reliable." He says it has also reduced the need for an employee to be on the floor handwriting details specific to each animal on each hook as they move through the plant floor. Thus far, of 500 RFID chips used to identify the hooks, they have had to replace only about 12.

ABP is not the only beef producer to use a combination of RFID and bar-code technologies. California beef producer Brandt is using a 134.2 kHz RFID tags and bar-code labels to track cattle from birth all the way to the retail market (see [Brandt Tracks Its Beef](#)).