

Let's Stay Connected

Radio-frequency identification tags allow processors to track food products through the supply chain

Networking isn't just for people anymore. Food products and other items on store shelves are getting in on the act, from beer kegs in the U.K., to cattle in the field. "This is about as far up the food chain as you can get," says Carol Zweep, senior research scientist at the Guelph Food Technology Centre. "The Canadian Cattle Identification Agency has approved the use of radio-frequency identification (RFID) dangle tags in tracking individual cattle."

More products than ever before now carry RFID tags. These tags contain tiny embedded chips that can carry any kind of information. "This technology has existed for decades," explains Nigel Wood, director of Industry Relations at GS1 Canada, formerly the Electronic Commerce Council of Canada. "At a simple level, tags store information and emit radio signals that a stationary or handheld 'reader' can read from or write to. Readers then send the information over the company's network to the back-end system for processing or display to the end users who manage inventory and make decisions about current and future products."

The advantages of RFID are substantial, especially combined with unique Electronic Product Codes (EPC). In addition to accurate tracking and tracing of products in the supply chain, the system can also be used to combat counterfeiting, streamline recalls, deter theft, ensure order accuracy and reduce out-of-stock incidents. "If a customer wants an item and it just isn't there, you've lost a sale," says Wood. "Retailers can lose up to four per cent of sales due to out-of-stocks, and about a third of those items are routinely available at retailers' distribution centres. Restocking more quickly because you're aware that a hot item is about to run out can really add to your bottom line and customer satisfaction."

RFID/EPC tags are also being used to help reduce "shrink." "Shrink is loss due to theft from various sources," says Wood. "It's made up mostly of internal theft or external



"The system can also be used to combat counterfeiting, streamline recalls, deter theft, ensure order accuracy and reduce out-of-stock incidents."

theft – such as shoplifting and burglary – but also by supplier fraud and simple recording issues, such as pricing and scanning errors, unrecorded returns and incorrect inventory. By preventing these problems we can increase efficiency while adding to the bottom line."

So who is using RFID/EPC tags? The list is extensive and includes Wal-Mart, Albertson's, Tesco, Procter and Gamble Inc., Johnson & Johnson, Gillette, Hewlett-Packard, Target and the U.S. Department of Defence, to name just a few. Each has been running pilot projects in RFID, and full implementation is just around the corner. Wal-Mart, for instance, ran

its RFID pilot project in 2003 and 2004, and began implementation in 2005. It is now using RFID in 150 stores, and aims to achieve full implementation in North America and the U.K. by 2007.

As with any new technology, RFID is not without its challenges. There are hurdles to implementation, ranging from the cost of the system, to integration with existing systems, data ownership and security, and understanding the real costs and benefits involved. Consumers may also be concerned about issues of privacy surrounding their purchases and buying habits.

The sheer speed of implementation is raising issues as well. As large suppliers such as Wal-Mart and the U.S. Department of Defence start mandating that their suppliers implement RFID, some are wondering if it will be a case of too much too soon. But, says Wood, "With the development of the UHF Gen 2 standard for EPC tags, many early technical issues are now being resolved." Adds Zweep: "There's much that RFID can do to increase efficiency, but we're not quite there yet."

Cliona Reeves is the communications manager at the Guelph Food Technology Centre. E-mail: cmreeves@gftec.ca