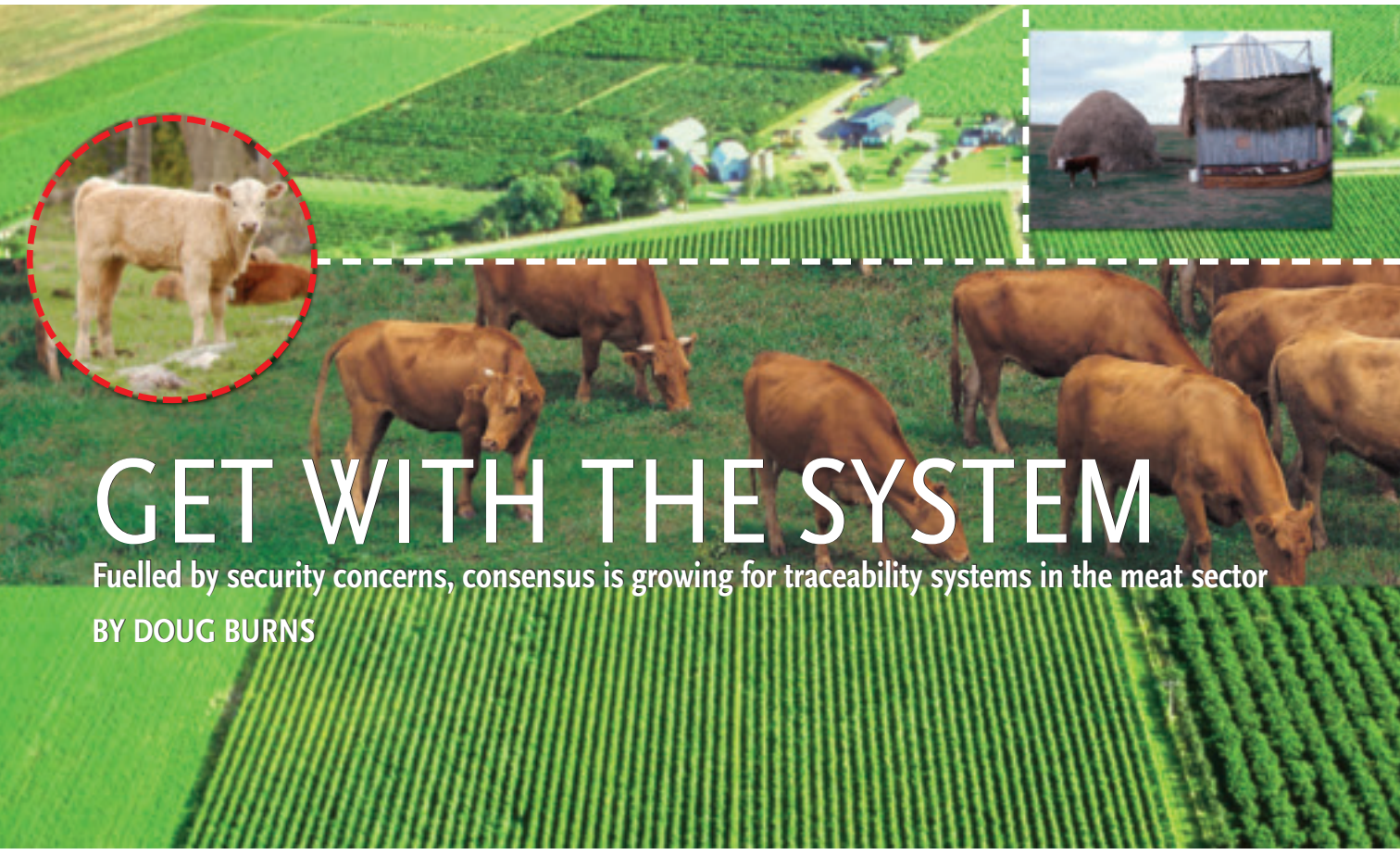

GET WITH THE SYSTEM

Fuelled by security concerns, consensus is growing for traceability systems in the meat sector

BY DOUG BURNS

It's hoped that one day radio frequency identification (RFID) tags will be as common on cases of bacon, wieners and pre-cooked roasts as tamper-evident closures are now on bottles of mayonnaise and cartons of milk. That's saying a lot, considering retailers have generally been slow to respond to the increasingly pervasive technology. But whether the transition from novelty to necessity takes 20 years as it did with bar codes, or two years as it did with tamper-proof packaging, depends largely on how realistic the industry takes security concerns. In the case of tamper-evident closures, the impetus came from the high-profile Tylenol tampering crisis of 1982.

The odds of such a crisis happening in the food industry were highlighted in mid-May by the release of a report prepared for the Canadian Food Inspection Agency (CFIA) by UK-based intelligence consulting firm Jane's. The report, released under the Access to Information Act, notes that there are a number of weak links in our food supply chain which would allow biological strikes on our livestock leading to massive culls. In particular, it notes, "Weaponizing biological pathogens into sprays to harm agricultural livestock is a relatively easy process," and "there are many more agents that are lethal and highly contagious to animals than to humans, many of which are not vaccinated against."

Livestock traceability would allow investigators to quickly identify, isolate and eliminate the infection, thereby limiting the necessary cull and reassuring domestic consumers and foreign markets as to the safety of the food supply. Although traceability has been on the agenda of Canada's livestock producers since 2001, it seems that 2003's BSE crisis and the latest bioterrorism risk assessments have heightened interest. In March, Chuck Strahl, our new minister of Agriculture and Agri-Food Canada, and his provincial and territorial counterparts unanimously supported moving quickly on a National Agriculture and Agri-Food Traceability System, beginning with livestock. The ministers of agriculture, following consultations with industry, intend to bring forward concrete recommendations on the new system at their next meeting this month in St. John's, Nfld.

STICKS, CARROTS AND CONSENSUS

The unanimity of these government leaders reflects widespread but limited consensus among producer groups and processors in favour of livestock identification. The Canadian Cattle Identification Program (CCIA), for example, was established by a coalition of provincial bison, beef and dairy producers and related groups in 2001 as a trace back system to contain and eradicate contagious animal diseases such as foot and mouth. However, the program is largely voluntary and there is no central database for the information collected by producers and processors.

There are certain contradictions with the program as well. For example, cattle must have the tags if they are to be accepted for slaughter by the packing plants, so tagging is

nearly universal but nonetheless voluntary. Producers and processors are obliged to record and retain certain information for each tagged animal, but none are obliged to share the information except in the event of a health (animal or human) emergency. Now producers are being encouraged to record and report the ages of their cattle. At the end of April, the CCIA reported that its Age Verification website had logged its two millionth age verification. That was a notable achievement considering that age verification is still voluntary outside of Quebec, but becomes mandatory in Alberta for the 2006 calf crop (effective April 2007).

By comparison, widespread participation in the age verification program across Canada reflects the effectiveness of incentives. There was a surge in age verifications in December, for example, when Japan opened its borders to age-verified cattle under 21 months of age. Voluntary participation also benefits from the premium some packers pay for age verified cattle. Cargill, for example, pays a $10-per-head premium.

It's important to note that Quebec is the exception to the voluntary and limited nature of livestock identification across Canada. Agri-Traçabilité Québec (ATQ) – the counterpart to the CCIA – is able to demand more of producers thanks in part to a four-year $21.5-million subsidy from the provincial government. Producers must record and report to ATQ on the movement of their cattle, hogs and sheep to community pastures, fairs, auctions and slaughterhouses.

EASIER, CHEAPER

It's obvious then that neither non-profit industry groups promoting traceability nor the suppliers of traceability tags, readers and software can offer financial carrots or threaten with regulatory sticks. Instead they must rely on making animal identification easier and cheaper for livestock producers and processors. In the last two years the prices of RFID tags have fallen 70 per cent to less than a dime, while reader capabilities have improved to read tags at greater distances, under more adverse conditions, more frequently and at less cost. Unlike the Generation one tags that prevailed until late last year, the Gen 2 tags (accepted by Wal-Mart since January) meet global standards and so are suitable for exports of products such as boxed beef and pork. In May the Canadian RFID Reader Program, designed to financially assist producers and processors in purchasing readers and other equipment, was also extended until December 2007.

Earlier this year Can-Trace released Version 2 of the Canadian Food Traceability Data Standard. Can-Trace, representing industry, government, standards organizations and consumers, seeks to define and develop voluntary minimum requirements for national whole-chain tracking and tracing standards utilizing global standards where applicable in the food supply chain. The latest version contains enhancements and modifications, including the accommodation of multi-ingredient foods.

The ability of Can-Trace to obtain consensus from the 25 stakeholders generally and the primary producers in particular owes a great deal to its adherence to five guiding principles, namely: the standard is voluntary; the standard is "whole chain" in its applicability; the standard references data requirements, not technology or system specifications; the data standard is based on global standards (GS1 and ISO); and the standard is not meant to replace existing systems but to complement them.

Consensus also benefits from the confidentiality provided by the one-up/one-down traceability model. Each participant in the food chain is responsible for maintaining records about the products they receive and where they were shipped or sold. And their trading partners cannot access the information without the originator's express permission. "There is no desire, no need, and no possibility of a huge central database," says Brian Sterling, director of Business Development – RFID and Product Traceability for IBM Canada Ltd. Sterling explains that obtaining information from an ID number is akin to a Google search, you enter the number and can only access whatever information the producer or processor chooses to make available to you individually or to everyone.

DEFINITE COSTS, POTENTIAL BENEFITS

Japan and Wal-Mart are currently driving implementation of traceability systems, the former demanding livestock identification and age verification of beef exporters, and the latter requiring RFID tagging of pallets and cases. This year Wal-Mart Canada will be expanding its three-year-old RFID ini-

tiative in the U.S. north of the border. "We will initiate a Canadian RFID program this year and have started the process of identifying how it will work, who will be involved, and the realistic targets to achieve," says Kevin Groh, a spokesman for Wal-Mart Canada.

A new study from the University of Arkansas demonstrates the appeal of RFID for major retailers. Bill Hardgrave, founder and director of the university's RFID Research Center, reports in this May's *New Findings on RFID Capability* that there were 30-per-cent reductions in-out-of-stocks where RIFD was implemented in Wal-Mart stores. "Wal-Mart obtains a double benefit. It sells more products while reducing its inventory costs," adds Dr. Peter Harrop, chairman of IDTechEx, a global RFID consulting company based in Cambridge, England. Harrop goes on to say that for many suppliers, RFID is just another expense as, "You must buy the tags and fit them at your own expense and swallow the costs."

But there's more to consider than just the cost/savings balance. The difference between a negative or positive return on investment in traceability depends on how producers and processors implement it, according to Jack Brooks, vice-president of Business & Sector Development for EPCglobal Canada, Inc., the Canadian affiliate of EPCglobal Inc., the non-profit standards organization driving the global adoption and implementation of the Electronic Product Code (EPC) Network. "Some suppliers simply comply with the mandate and do nothing more," says Brooks, "but the smart suppliers will review and change their business processes at the same time, and they are the ones that realize the greatest benefits." He adds, "If you don't look to improve processes – to take costs out of the system – RFID is simply another expensive form of data collection."

"With the data we can take the cuts of meat and recreate the cow. We think of this as forensic traceability."

Brooks cites the meat and poultry sectors as major beneficiaries of RFID. As suppliers of high-turnover products and limited shelf life, they will realize higher sales through reduced out of stocks. As well, says Brooks, "Meat and poultry suppliers will see significant savings from product recalls. With RFID codes you can narrow the search within the supply chain." The benefits would be even greater if the livestock identifiers could be matched to the cases of meat produced from their carcasses. Feedback from consumers, retailers, wholesalers and meat packers could help producers to breed and raise higher-quality and/or higher-yielding pigs, cows, lambs and chickens, and thereby command higher prices and/or lower costs.

Atlantic Beef Products Inc. may be the first North American meat packer to have accomplished this feat. Its Albany, P.E.I. plant, opened in December 2004, does this with the help of Merit-Trax Technologies of St-Laurent, Que. The ID number of the cattle is transferred to the two leg hooks for the carcass. Customized software captures the animal ID and transfers it to every cut of meat and, in turn, to the cases and pallets exiting the plant. "With the data we can take the cuts of meat and recreate the cow. We think of this as forensic traceability," says Merit-Trax president Michael Miskin. Miskin notes that the technology will allow Atlantic Beef to continually improve the quality and consistency of its products, thereby developing a brand that can command a premium price. "The premium provides the incentive producers need to provide more than just the minimum information required," he says.

Ultimately, livestock traceability and RFID tagging of packaged foods will become mandatory, either in the long term as all the major producers and processors gradually become compliant, or in the short term as a result of a major recall triggered by a natural or deliberate food crisis. However, it's up to processors to choose whether they take advantage of these new tools to improve business processes, reduce costs and improve quality, or simply swallow the costs of buying and applying tags. FC