In last summer's listeriosis outbreak that resulted in 22 deaths, the issue of food safety was pushed to the forefront in both the minds of industry and consumers. Leading the charge was Maple Leaf Foods, the company that was in the eye of the storm.

At May's 2009 National Grocery Conference in Quebec City, presented by the Canadian Council of Grocery Distributors (CCGD) and Food & Consumer Products of Canada (FPCC), Michael McCain, president and CEO, Maple Leaf Foods, said: "As a result of all these events in 2008, we felt it was imperative that the Maple Leaf organization assume a leadership role in food safety. We've sought out, since then, the opportunity to build what we believe are global best practices in food safety in our organization. We've learned a lot; we've retained a chief food safety officer, one of best in his field in the world, and we've put in place a food safety advisory council across the organization and we're committed to sharing what we know."

One of the things they've learned is that listeria can't be eliminated based on the technology that exists today, but it can be controlled. As McCain stated in his Quebec City address, "the more you test, the more you find, the more you find, the more you can eliminate. Our job is to find more so we can eliminate more and that's the basis for the new policies going forward," he said.

**Tougher Rules**

Early in the year, the Canadian Food Inspection Agency (CFIA) released tougher listeria testing rules for ready-to-eat meats from federally registered meat plants. As of April, operators producing deli meats and hot dogs had to begin testing food-contact surfaces, looking for trends in the results to catch potential problems. Agency inspectors also now be notified of all positive tests immediately.

"Last year's tragedy in the listeria outbreak resulted in us taking a very comprehensive look at where additional improvements in the system might contribute to mitigating against a similar event," says Paul Mayes, associate vice-president, programs, CFIA. The CFIA has introduced new requirements around aggressive, thorough deep cleaning of slicing equipment, and new requirements for controlling listeria in ready-to-eat meats processing plants, which involve mandatory environmental and end product testing. Mayes says the CFIA has "significantly enhanced the verification testing that we conduct as the regulator in those facilities as well."

At the grocery conference, McCain addressed the new listeria policy saying it "incorporates the best-
“The estimated annual listeria deaths in the United States is five times as much in retail sliced deli meats than it is in prepackaged meats.” —Michael McCain

in-class learning from other countries. From the experience we had in 2008, it includes enhancements for sanitation inside plants, better control processes, testing protocols and a significant increase in the amount of testing. The protocols and regulations that were in place prior to the outbreak in 2008 was a standard of zero; there was no requirement for environmental testing or monitoring program in the Canadian food processing industry. That’s a travesty; had we had one, we believe we could have saved 22 lives.”

Major Changes

The CFIA’s Mayers notes the major changes that have occurred to food safety since last summer have been focused on improvements at the point of production to reduce the potential of listeria.

Moreover, the verification sampling that CFIA does as part of its overall oversight used to happen three times per year; this has now doubled to six, and environmental testing is also done six times per year.

“Our verification testing, which, of course, is separate from ongoing environmental and finished product testing that the industry is required to carry out, and serves to verify that the hazard analysis critical control point (HACCP) approach and sanitation protocols etc., are effective, is the role that the verification testing does as opposed to the routine controls that the industry provides,” says Mayers. To accommodate the enhanced testing protocols, CFIA’s resources are focused on inspection activities, which have been increasing steadily and there has been additional inspection staff over the last year.

Listeria concerns in packaged meats aren’t the only area to focus on, according to McCain. He pointed out in his Quebec City address that data in the United States showed there has been a steady decline over the last 10 years in packaged meats in the prevalence of listeria.

“The number of cases of illnesses, however, did come down in the early part of the turn of the century but has largely flattened out and hasn’t matched the decline that has taken place in packaged meats,” he said.

“The message is there are other factors contributing to listeriosis illness beyond packaged foods that we need to be fully aware of.”

More surprising, said McCain to industry delegates, was the prevalence of listeria in the United States in retail sliced deli meats, which is nine times higher than what it is for prepackaged meats.

“The estimated annual listeria deaths in the U.S. is five times as much in retail sliced deli meats than it is in prepackaged meats,” said McCain. “We own that issue as much as the retail industry. The processing industry needs to come to the table with concrete ideas on how to address that.”

Recalls in Canada

While most in the industry believe Canada does an overall good job in the food recall process associated with food safety, there’s still room for improvement. There are industry-wide initiatives led by GSI Canada, a non-profit supply chain standards organization, to improve the efficiency of information transfer and recalls. The organization has been collaborating with a number of food and grocery associations on a standardized recall communications tool. GSI Canada’s product recall portal uses web portal technology to enable a community of interest to interact and exchange relevant information using a secure and auditable process. It’s already a fully functioning system in the United States and is composed of recall initiators (generally manufacturers) and recall receivers (generally retailers). So far, the Canadian Federation of Independent Grocers, FCPC and the Retail Council of Canada have agreed to the project and GSI Canada is working on securing other partners. The pilots for the bilingual recall system will occur in July and August, says Tim White, GSI Canada, director of product development.

“In the fourth quarter of this year, we’ll introduce a version of this that is two-way messaging. Retailer-to-
manufacturer messaging to help with retail closeout (and knowing how much product is in distribution),” says White.

This will allow manufacturers to always have a real time understanding of how much product is off the shelf.

**Troubleshooting**

Despite all the changes that have occurred since last year’s outbreak, some experts feel there’s still more that needs to be done.

Rick Holley, professor of microbiology and food safety, University of Manitoba, says (the issue of) listeria is symptomatic of a whole array of issues with the food safety system that haven’t been addressed. “My concern is the emphasis that has been placed on environmental non-food contact surface sampling and what effects this may have on industry ability to use resources wisely,” he says. “Also, if the CFIA comes back in the fall with enhanced regulations regarding non-food contact environmental surface sampling in food plant operations that are refrigerated, it may demonstrate to industry that the CFIA isn’t firmly committed to going along with the premise that HACCP programs are proactive and do work. If we see greater emphasis on end product sampling as a consequence of positive non-food contact surface samples for listeria [this] would mean to me that the HACCP system is being disenfranchised in Canada the same way it is may be happening in the U.S., and end product testing would be used as a demonstration that listeria isn’t in these products yet would offer no further level of safety.”

Susan Wilkinson, solutions executive, agri-food traceability team, IBM Canada Ltd., says, “Within a food processing plant, food safety is assured by having a strong HACCP plan in place.” She feels that while there is progress and improvement in all the areas of food safety issues, we are still moving very slowly and other countries are ahead of us. “We will become less and less competitive on the international market if we don’t move forward more quickly,” says Wilkinson. She says that governments at all levels have agreed that we need a national agri-food traceability system in Canada, which would provide visibility to the information needed to manage food safety issues more effectively including the management of animal and human health issues. “There is an industry government advisory committee working on defining how this may be done, but the work, so far, is almost exclusively in the area of live animal tracking.”

Holley adds that we need a dedicated food-borne illness surveillance system in place and better co-ordination of food inspection is needed among three government levels. “We have two tiers of inspection regulation and three levels of government that try to enforce them—it’s all over the place. About slightly under 50% of the food dollar spent in Canada is spent on food that isn’t inspected at all, but we need to know from the food-borne illness surveillance data, which foods cause illness most frequently and go in and inspect the ones that are involved more than the others (such as poultry).” He says investment is needed in food inspection and food-borne illness outbreak response co-ordination. Thirdly, we need to do something about contamination of produce. “The front door is wide open to the next big food-borne illness outbreak caused by contaminated produce that is either salmonella or E. coli.” The problem of food-borne illnesses could be resolved by not feeding these organisms to animals from which we use manure as fertilizer. “We have examples to show that each year [that] goes by more and more animals are being contaminated by these organisms and more vegetables that we don’t cook are put into general distribution that are contaminated with these organisms and cause, by and large, widespread outbreaks of serious illness.”

In fact, Holley says campylobacter (bacteria that are a major cause of diarrheal illness in humans and are generally regarded as the most common bacterial cause of gastroenteritis worldwide), not listeria, is the biggest problem in the food safety area. “It causes far more cases of food-borne illness than any of the other organisms and 100% of chickens are contaminated. This tells you something about where we need to address issues associated with food-borne illness—at home and food service,” says Holley.

“The front door is wide open to the next big food-borne illness outbreak caused by contaminated produce that is either salmonella or E. coli.”—Rick Holley
**New Technologies**

In the fight against listeria, there are new tools against the battle, such as lactate/glutarate-type products. At the national conference, however, McCain warned that these ingredients are not "silver bullets." He said: "Lactate/glutarate is a growth inhibitor; it doesn't eliminate listeria from your product, but it inhibits growth of listeria to the degree it would cause illness based on the public health studies." The company is also looking for other technologies that will apply in different circumstances, such as ultrahigh-pressure radiation or emerging packaging technologies.

Moving forward, CFIAs Mayers says it's important to continually improve communication among the partners in an outbreak response (federal, provincial, and municipal governments). As well, he says the CFI will focus on looking at information being generated through testing to identify trends. By looking at trend data, we have the opportunity to flag any potential problems early and take corrective actions in response to those," he says.

The CFI and industry is currently working to develop best practices around environmental testing in the plant environment beyond food contact surfaces. "We know that this organism (listeria), as a fairly ubiquitous organism, can be an issue, and what we are encouraging and working with the industry around is ensuring that where best practices are available, they're available industry-wide in terms of how you track this organism in the overall plant environment."

With there being no such thing as zero risk, industry needs to ensure that when food safety issues do occur, there's a system in place that identifies and removes affected product from the food supply chain as quickly as possible, says Jackie Crichton, vice-president, food safety and labelling, CCGD. "From a CCGD perspective, food safety continues to be the top priority for our members. Even though there is nothing that could be done at retail to prevent last year's listeria situation, CCGD members have undertaken a review of the HACCP-based retail food safety program and initiated an updating of the supply chain food product recall manual expected to be ready by fall."

As McCain pointed out in his speech at the national conference, food safety is of rising importance to consumers. "There is a confidence issue from a consumer perspective and that's incumbent on the industry to make sure we put this on top of lists," he said.

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**Investing in Food Safety**

It's expected that before year's end, the findings of the listeria investigation from the independent investigator, Sheila Weatherilt, and the federal Subcommittee on Food Safety, will be released. Health Canada is also in the process of reviewing its listeria policy. Gary Sands, vice-president, Canadian Federation of Independent Grocers (CFIG), says the government has announced a new food safety program that may allow us to look at a continuation of our food safety initiatives aimed at enhancing the practices and procedures that our members follow. (However, CFIG is still in the very preliminary point of looking at what those kind of future activities would entail. This remains a very high priority for the association," says Sands. CFIG developed a manual for retailer and training program, with the support of Agriculture and Agri-Food Canada.

As Crichton points out, as the face of food for many consumers, the main challenge facing retailers is ensuring that consumers maintain confidence in the food supply chain. "This can only be achieved when all partners—government, producers, processors, distributors and retailers—work together to provide Canadians with the safest food possible."

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**Canadians Place Food Safety Trust in Government: Poll**

A recent poll commissioned by the agriculture union representing federal meat inspectors, asked 1,001 Canadians to gauge their faith in the country's meat inspection system following last year's listeria outbreak.

- **73%**—Think the government should take the lead role in ensuring food safety standards are met.
- **64%**—Blame the government for turning over critical inspection duties to industry or business for cutting food safety corners to save money.
- **27%**—Believe that the outbreak was simply an unfortunate and unavoidable accident.
- **18%**—Think the business can ensure food safety standards are met for the foods they produce.
- **18%**—Canadians have a high level of trust in food companies to assess themselves when it comes to compliance with safety rules.

Source: Nero Research

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Recently there has been much media coverage of food recalls, which has caused many Canadians to feel heightened concern about food safety. So far this year, the Canadian Food Inspection Agency (CFIA) has triggered 19 listeria-related food recalls, several more involving salmonella in peanut-containing products and others involving E. coli in ground beef products. The intense media coverage of last year's listeriosis outbreak, in addition to these more recent events, has contributed to keeping food safety in the news and top of mind for consumers. And that's just the tip of the iceberg. "Health Canada estimates that 11 million people every year contract foodborne illness in Canada," says Paul Medeiros, Manager of Consulting Services, Guelph Food Technology Centre. "The vast majority of that goes unreported."