



What lies beneath?

If safety doesn't come first with fresh fruit and vegetables,
you may be giving your customers more than they bargained for

BY MARK CARDWELL

Like tap water before the Walkerton, Ont. disaster, Ben Chapman says Canadians never used to give a second thought about the safety of the fresh fruits and vegetables they ate. “If you told somebody 10 or 15 years ago that they could become seriously ill from eating raspberries, tomatoes or lettuce, they would have told you you were crazy,” says Chapman, a doctoral student with the Plant Agriculture Department at Ontario’s University of Guelph and the resident on-farm food safety expert with the Canadian Food Safety Network. “Fruits and vegetables were never considered in relation to food safety. It was simply not an issue of public discussion.”

How times have changed. Over the past decade, the consumption of contaminated fresh fruits and vegetables has led to as many as 500 outbreaks of food-borne diseases across North America, leaving thousands of sick, and some dead, Americans and Canadians in their wake. While poisonous produce represents only a fraction of the annual fruit and vegetable production around the world – and is almost non-

existent among Canadian-grown product – recent outbreaks have heightened consumer awareness of potential microbial contamination and increased pressure on both food producers and processors to ensure the safety of their products. For producers, it also means protecting the health of what is now a multi-billion dollar industry.

The threat of contaminated food and food-borne illnesses is as old as humanity itself. For countless millennia, however, the vast majority of outbreaks – both individual and group – have been caused by the consumption of spoiled, raw, undercooked or poorly prepared meat, poultry, eggs, milk and shellfish. But fruits and vegetables, particularly those fresh varieties that are consumed raw and whose skins are not peeled, are also a concern when they are produced, packaged and/or prepared for eating under less than sanitary conditions. And those conditions, Canadian food safety experts warn, represent both an omnipresent danger and an increasingly tricky food-safety challenge in



today's fast-paced world.

According to Chapman, upswings in recent years of global agricultural trade, industrial pollution and human waste, together with soaring demand from consumers in developed countries for convenient, pre-packaged, fresh-cut salads, vegetables and fruits, have combined to create a ripe environment for the growth and spread of fruit- and vegetable-borne illnesses. The big wake-up call came in 1996, he says, when raspberries from Guatemala that carried cyclospora – a parasitic bug that causes *E. coli*-like symptoms such as diarrhea and fever – made 1,400 people sick in Canada and the U.S. “It really put the issue on the radar,” says Chapman, who recently looked for but couldn't find a single article in any major North American newspaper that dealt with fruit and vegetable safety before 1995.

Since then, however, a host of large and serious outbreaks involving a variety of pathogens and produce – from salmonella in cantaloupes and Mung bean sprouts, to hepatitis A

in green onions and *E. coli* in strawberries – have earned the issue front-page coverage on a regular basis. For the most part, those outbreaks have been traced to, and blamed on, poor farming practices in hot and humid developing countries. In some cases, the problem is found to be the improper use of fertilizers. More often, however, the culprit is the use of contaminated water to irrigate crops or to clean and/or cool produce before packaging. “The danger is particularly acute for tomatoes and lettuce because they absorb water,” says Chapman. Other farm-rooted problems, he adds, include the use of dirty equipment, animal feces and human hygiene.

In Canada, myriad federal, provincial and municipal laws and regulations, together with various industry-approved programs and measures, have helped keep most of these food production problems at bay. Among other things, HACCP-based (Hazard Analysis Critical Control Point) control systems have played an important role. Developed jointly by

NASA and Pillsbury in the 1960s as a way to ensure pathogen-free foods for space travel through a systematic analysis of biological, chemical and physical hazards – in food production that means everything from manure application and water management to the detection of foreign objects from farm to fork – HACCP is the international gold standard for food safety. It is also now the most widely recognized food-safety program in the Canadian food industry.

In addition to offering base programs in pest control, employee training and examination of equipment and premises, the Canadian Horticultural Council (CHC), in partnership with the Canadian Produce Marketing Association, the Canadian Food Inspection Agency, and Agriculture and Agri-Food Canada, is now developing a record-keeping system for primary production and packing levels in the fruit and vegetable sector. “What we find is that a lot of producers are doing a lot of things they need to, like hygiene training and pest control, but are not keeping records that show buyers that they did what they say they did,” says Heather Gale, food safety coordinator with the CHC. Gale adds that these collective efforts have resulted in “very, very low numbers of incidences relative to the corruption of fruits and vegetables” being reported to Canada’s national outbreak monitoring and incident reporting programs.

Farms, of course, aren’t the only links in the food-production chain that can be the source of contamination. In fact, many of the same risks facing the primary level – employee hygiene, dirty equipment, tainted water – can also lead to the introduction of pathogens at the packing, processing and retail levels. And that can be true regardless of company size, prestige and concern for consumer safety and product quality. Consider, for example, the deadly outbreak in Minnesota last November of *E. coli* bacteria from pre-packaged, mixed salads from California by multinational giant Dole Food Company Inc. After surviving

the triple washings, including two rinses with chlorine, that all of Dole’s pre-packaged produce is given, the bacteria managed to make it into the mouths of two dozen people who became seriously ill. They included an 11-year-old girl who reportedly required four blood transfusions and 18 days of kidney dialysis after suffering renal failure. The

outbreak was the latest in 19 confirmed outbreaks in the U.S. that have sickened 400 people and caused two deaths since 1995.

The onus for such outbreaks lies squarely on the shoulders of food processors, believes Carol Zweep, a research scientist and the manager of Packaging Services at Ontario’s Guelph

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A collage of various Urschel industrial food processing machines, including slicers, dicers, and shredders, alongside images of sliced fruits and vegetables like apples, grapes, carrots, and tomatoes.

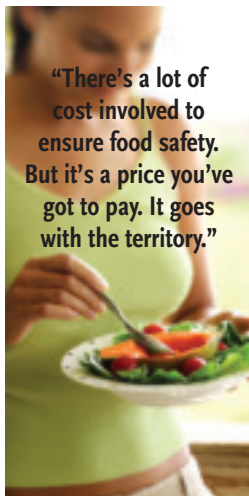
Food Technology Centre, which evaluates and offers packaging and development solutions to food companies. "Consumers put a lot of faith in what they buy in stores," she says. "If a package says pre-washed, most people, including me, don't rewash them. So if producers want to sell ready-to-eat salads and things like that, they have a social responsibility to provide a safe product."

Zweep points to the precautions major grocery store chains take in preparing and providing ready-to-eat, fresh-cut foods as an ideal role model. According to Geoff Wilson, vice-president of Marketing for Loblaw's, grocers have great experience in handling perishable goods and to-go food like chicken, deli, and increasingly, seafood and sushi. "It's a common sense thing," says Wilson. "Fresh cut and pre-packaged products are really popular now, and will continue to be so because most consumers are time strapped. So you have to provide regular training for employees to avoid any lapses in food safety. The last thing you want is to have problems in that regard."

That fear isn't lost on Canadian food producers and processors. "We've been lucky, we've never had a recall or a problem with product generated in-house," says Noel

Brigido, vice-president of Production for Freshline Foods, a Toronto-based, full-line food processing company that supplies restaurant chains, wholesale distributors, institutions and major packaged food producers such as Campbell Company of Canada and Nestlé Canada Inc. with raw and prepared vegetables and salads. The company also makes and distributes its own retail brands of pre-packaged produce.

According to Brigido, safety is as big a concern for the company as food quality. "In fact it's more important," he says, "because quality begins with safety." In addition to dealing with only reputable growers at home and abroad, Brigido says the company spends "a lot of time and money" on full HACCP-guided staff training, as well as the monitoring and cleaning of equipment. That includes soaps, sanitizers and washbasins in which some produce, such as spinach, is triple-washed. One of three companies belonging to Bamford Produce Company Ltd., a fourth-generation, family owned food producer, Freshline also carries out visual inspections and micro testing on raw ingredients, many of which are imported through pack buys. "We check everything, but particularly produce that's grown in the open and sits on the ground," says Brigido. "There's a lot of cost involved to ensure food safety. But it's a price you've got to pay. It goes with the territory." FC



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