

Getting the Gluten Out

The gluten-free market offers enormous opportunities for enterprising producers • BY CLIONA REEVES

Chances are, if you have not yourself been diagnosed with celiac disease, you know someone who has. It's a condition that is much more common than you might expect, something the food industry has yet to realize, judging by the dearth of appetizing gluten-free products on the market. While this fact is a problem for celiacs, it also represents a huge market opportunity for those food and beverage manufacturers that are able to rise to the challenge of developing tasty, affordable, gluten-free products.

THE DIET DILEMMA

Celiac disease is an autoimmune condition that damages the inner lining of the small intestine in the person consuming foods containing gluten. The damage becomes worse over time, reducing the ability of the intestine to absorb nutrients from foods. Patients can then develop a host of secondary symptoms, appearing singly or in groups, including constipation and diarrhea, excessive tiredness, dermatitis, swollen hands and feet, migraine, iron or folate deficiency, deficiencies of the fat-soluble vitamins (A, E, D and K), osteoporosis, arthritis, lactose intolerance and other conditions. The wide range of symptoms and secondary conditions is a key reason the condition sometimes takes a long time to diagnose. Celiac disease can manifest itself in children and adults, and is genetic. The treatment is simple: eat a gluten-free diet.

The problem is that eating a gluten-free diet is not a simple proposition as gluten is everywhere. "Gluten is a protein in wheat, rye, barley, triticale and related grains," explains Quentin Johnson, Quality Assurance and Product Development specialist with the Guelph Food Technology Centre (GFTC) in Guelph, Ont. "It's what provides bread and other bakery products with their structure. That's one reason why so many gluten-free loaves are so crumbly. They lack the structure gluten provides."

Simply switching to gluten-free grains is not an easy answer either. Some can be cross-contaminated with gluten, such as commercial oats, which are often con-

taminated with wheat, rye or barley. "Separating wheat and oats is not easy, as cross-contamination can begin right in the field, and the grains are of similar size, so they're not easy to separate after the fact," says Johnson. "This can make many seeming possibilities off-limits for persons with celiac disease."

As if this were not enough of a problem, a gluten-free diet may also be nutritionally poorer than a standard diet because substitute grains tend to be lower in fibre, B vitamins and iron. This increases the difficulty of finding something without gluten, with additional nutrients, and which can be prepared quickly.

For those with celiac disease, taste sometimes has to take a back seat to longer-term health. "For most people, food is not just fuel, but something you enjoy and savour," says Janet Dalziel, vice-president of the Canadian Celiac Association (CCA). "For us, food is a problem, but not eating is not an option. Instead, we become hyper-vigilant about food, reading labels religiously during long, slow grocery shopping trips. We travel to different stores to find the products we rely on. We learn about the ingredients we can tolerate and those we can't, and how to distinguish them in those increasingly lengthy ingredient lists," she says. "And yet, the good news is that this is a condition for which there is neither a drug nor surgery, and the treatment is gluten-free food. Many cancer patients would change places with me in a heartbeat."

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London, Ont.-based Funster Natural Foods Inc. is one company catering to the gluten-free market. Its mashed potato letters are free of preservatives, additives, GMOs, trans fat and gluten.

HIDDEN HEALTH RISKS

Before you assume that just shopping the perimeter of the grocery store for vegetables, fruit, meat, milk and eggs is a simple solution, consider how extensive gluten's reach is. "Even communion wafers made of wheat can be a problem," says Marion Zarkadas, a dietitian with the CCA. "Other unexpected sources of wheat include imitation seafood and bacon, soy sauce and beer. Even children's play-dough is often wheat-based."

Ingredients within ingredients can also be suspect. "There might be the problem of an undeclared carrier,"

explains Jennifer McCreary, manager of Customized Training Services at the GFTC. "Active ingredients could be added to a carrier such as wheat flour starch, which was not declared on the label, and this would be an undeclared source of gluten. This underlines the importance of knowing your process, your facility and your ingredients inside out."

While celiac disease presents a daily challenge, the number of those with the disease is astonishing. "Statistics vary widely, depending on how extensive routine testing is," explains Zarkadas. "In the U.S., it's estimated that one person in 133 has the disease. Similar numbers are estimated in Europe, but tend to be higher in countries where more testing is done. In Italy in particular, children are routinely screened for the disease," she says.

A DEVELOPMENT CHALLENGE

Gluten-free food has acquired a trendy cachet among diet-seekers, though some misunderstand the principles of it and, for example, may order the gluten-free club sandwich with fries coated in wheat-based coating. "On the one hand, the growing appeal of gluten-free food is good news, because it means that the market has just increased for gluten-free products," says Zarkadas. "On the other hand, if food companies view it as just another short-lived trend, like low-carb, they may not take it seriously for the major opportunity it really

is. It's not just those with celiac disease who consume gluten-free products," she says, noting that family members often eat gluten-free as well.

People with celiac disease can be adversely affected by very low levels of gluten, and thus scrupulous food safety and quality systems are essential to prevent contamination. "First, you must have verifiable, documented Good Manufacturing Practices, or GMPs, and an effective HACCP program," explains McCreary. "As with preventing allergen cross-contamination, you must be able to track ingredients and show what is in the product, on the line, or in the plant. In the case of products made from flour, it may be necessary to have a dedicated plant for gluten-free production, since flour's fine particle size makes it fly everywhere, despite one's best efforts."

Despite the extra steps needed to protect products from cross-contamination, the simple fact is those with celiac disease, like everyone else, often have fast-paced lives and little time for "from-scratch" cooking, suggesting there is a huge opportunity for forward-thinking product developers. "We go to great lengths and distances, including online ordering, to get what we need," says Dalziel. "While there are many gluten-free products I would love to be able to buy, if someone could just develop a really good gluten-free bread, a lot of people with celiac disease would be in heaven." [FC]

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