

# FOOD *in* CANADA

Canada's food & beverage processing magazine

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**80**

**YEARS**



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**PG. 20**

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Canada's food & beverage processing magazine

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# Looking back, looking forward

We've been thinking a lot about the evolution of food and beverage processing in Canada as we worked with our contributors and columnists to publish this issue.

*Food in Canada* first went to print in 1938, just as the sun was setting on the Great Depression and much of the world remained blissfully ignorant that it would soon be engulfed in the Second World War.

It's impossible to capture every milestone towards the vibrant food and beverage sector we have in Canada today. The commercialization of refrigeration, the discovery of plastic in various configurations for food preservation and the implications of better packaging for convenience were all significant.

But there are some changes dating back to that era that deserve special mention.

Columnist Ronald Doering (see page 15) captures one of those turning points in his account of the positive public health outcomes that came from the development and subsequent regulatory enforcement of pasteurization in 1938 to destroy disease-causing organisms in milk products.

Developing the technology was one accomplishment. The political leadership shown to make it mandatory was another. Hand in hand the two initiatives saved lives by making milk safer to drink.

The distance from gate to plate was much shorter back in the days when one-in-three Canadians still lived on a farm. And the effects of a food safety incident

were largely local, not the national scares and recalls of today.

Today, Canada is among the most urbanized countries in the world and the vast majority of its citizens have little knowledge of their food's origins beyond what they see at their grocer's. Many no longer have skills in cooking, safe handling and preparation.

That decline in the public's hands-on knowledge about food has placed tremendous pressure on the food processing industry and governments to fill the void with technology, risk management and regulatory oversight.

For the most part, it's working. Canada is recognized as having one of the safest food systems in the world, a designation that stands it in good stead as it tries to extend its reach in global markets.

As well, this all took place against the backdrop of massive advancements in processing and packaging as the industry responded to the consumers' pursuit of convenience, variety, affordable prices and, of course, changing tastes.

New to the scene is the use of social media to rapidly amplify shifts in consumer sentiments, which makes it exceedingly difficult to discern between trends and fads.

Our new associate editor Andrew Joseph tracks some of these changes in his story on page 20.

All in all, it is a testament to commitment by processors to ongoing innovation. Job well done.

However, there are some challenges



ahead, as outlined in an interim report submitted to the recent meeting of federal, provincial and territorial agricultural ministers.

The report by the federal Agri-Food Economic Strategy Table says this sector's investment in machinery and buildings as a percentage of sales is trending downward at the very time it needs to increase to position this country for growth as a global food exporter.

It cautions against too much regulation, calling for a "synchronized regulatory system" that fosters innovation.

It says the sector must also invest in its people as the skill set required in food processing is changing. The report warns, "In a very short time, players who do not embrace automation, digitization and other technological advances will simply become non-competitive."

Frankly, from our vantage point here at *Food in Canada*, we don't see that happening. 🍎

Laura Rance-Unger  
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## Andrew Joseph joins FIC staff

*Food in Canada* is pleased to introduce Andrew Joseph, who has joined our editorial team as associate editor. His role is preparing features and assisting with content management.

Prior to joining *Food in Canada*, Joseph served as features editor with *Canadian Packaging Magazine* and five years previously with Holman Design.

After graduating from York University with a degree in political science, he studied journalism at Humber College. Joseph interned at the Toronto Star before travelling to Japan to teach English for three years through the Japan Exchange & Teaching Programme.

Joseph was born in London, England. He currently lives in Toronto with his wife and son.



## News > file

### NEW PRODUCTS

#### SSP Group International expands line of biodegradable plastics

Toronto-based SSP Group International Inc., is expanding its line of oxo-biodegradable polystyrene disposable products to include items made for the bakery, confectionary and retail sectors.

Oxo-BioDegradable single use versions incorporate TDPA (Totally Degradable Plastic Additives) that convert conventional plastics, such as (PS) polystyrene, (PE) polyethylene and (PP) polypropylene to degrade at a controlled rate.

Plastics incorporating TDPA will start to degrade after their programmed shelf life when disposed in landfill, soil or compost.

#### DuPont Nutrition & Health recognized for infant formula improvement

DuPont Nutrition & Health has been awarded the NutraIngredients-USA “Ingredient of the Year Award 2018” for its innovation to promote infant nutrition by supplementing infant and toddler formula with Human Milk Oligosaccharides (HMO) to make it closer to the gold standard of human milk, as well as supporting digestive, immune and cognitive development in infants.

The award, presented at a ceremony in

#### Plant proteins from hemp

Manitoba Harvest, the world’s largest manufacturer of hemp food products, is going after a share of the rapidly growing market for plant-based proteins with the launch of Hemp Yeah! in major retailers across Canada this summer.

With a global market already worth more than US\$8 billion, demand for proteins developed from plant sources is expected to continue to surge. A recent report by the Canada West Foundation says the market is expected to reach US\$14.8 billion by 2023 with a compound annual growth rate of nearly six per cent.

By 2054, plant -based protein is expected to be one-third of the global protein market. Human consumption is expected to double by 2023.

That’s good news for Prairie farmers, who already lead the world in exports of pulse crops and canola. It’s also a great opportunity for processors such as Manitoba Harvest crushing and processing seed purchased from producers.

Manitoba Harvest says Hemp Yeah! has several advantages:

- It contains hemp and pea protein. The two combined produce a complete amino acid profile while offering a smooth taste and texture.
- It is Certified Organic, kosher, vegan, stevia- and dairy-free, and Non-GMO Project Verified.
- It offers 20 grams of protein per serving, 3.4 grams of Omega 3 and Omega 6 Fatty Acids and is a rare source of gamma linolenic acid.

Plant-based proteins offer the added advantage of containing fibre, which isn’t a component of animal-proteins.



Chicago following the Institute for Food Technologists Annual Meeting and Expo, is given for true innovation and cutting-edge research in the nutrition and dietary supplements industries.

CARE4U is suitable for dietary supplements as well, given that it is the highest-purity and density HMO on the market,

allowing for smaller dose size and ability to combine with other ingredients.

Also shortlisted from DuPont in the Weight Management Ingredient of the Year category was HOWARU Shape, a unique combination of probiotic (B420) and prebiotic (Litesse Ultra) clinically proven to naturally trim the waistline.

## INDUSTRY NEWS



THE CANADIAN CENTRE FOR  
FOOD INTEGRITY

2018 Public Trust Summit

### November conference explores public trust in the food system

#### Guelph, Ont.

Canada's agri-food sector leaders are invited to gather for the third annual Canadian Centre for Food Integrity (CCFI) Public Trust Summit in Gatineau, Quebec Nov. 13 to 14.

Earning public trust in food and farming has been identified as a key priority and foundation for future success, growth, and innovation. Thought leaders from all aspects of the food system from the farm through to retail will gather to learn, engage and plan how to earn trust in food.

"Our forum for dialogue is unlike any other – with the whole food system from coast-to-coast coming together to engage and discuss ideas on how to move the bar on public trust together," stated Kim McConnell, CCFI Chair. "Attendees will get energized to take what they learn and discuss and put it to work when they get home."

This year's event will kick off with the release of the new 2018 CCFI public trust research on Canadian consumers. Daniel Lemin, a former Google executive and food company start-up entrepreneur from California, will share his views on "The Consumer Expectation Gap" and where food trends are quickly shifting.

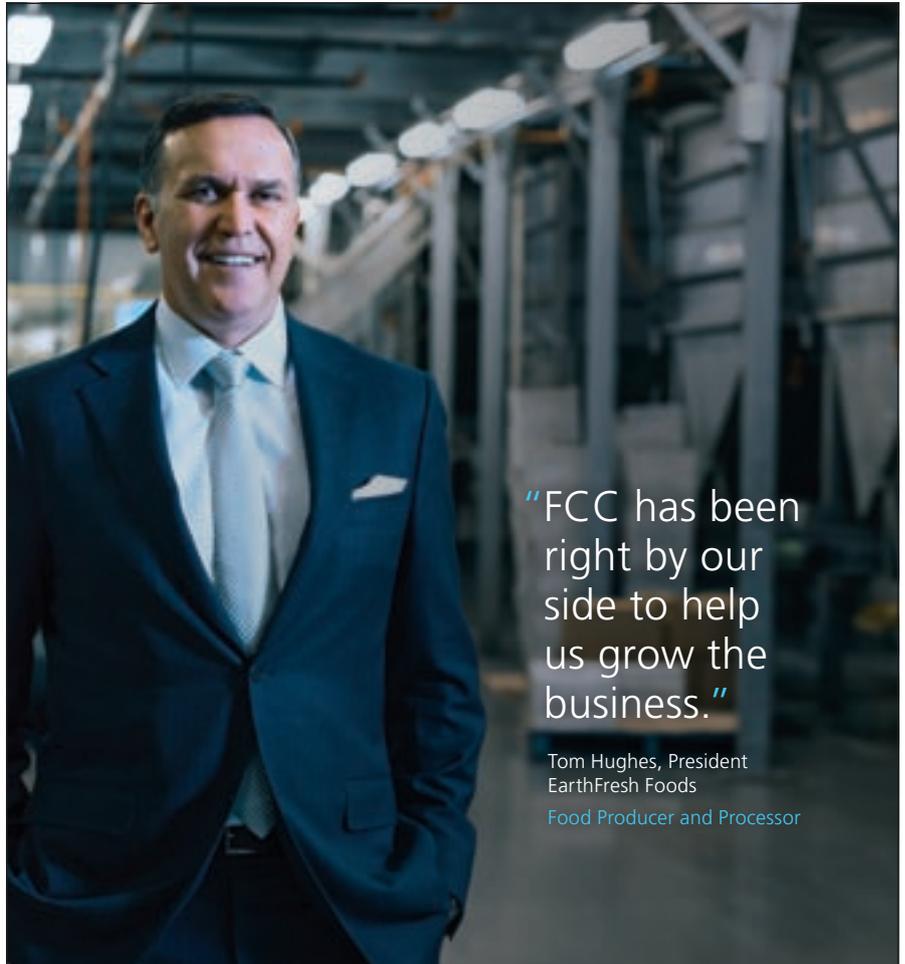
Day one will conclude with a Celebration of Canadian food and the people who produce it.

Day two shifts to actions, with an

interactive breakfast dialogue session that inspires participants to stretch beyond their comfort zone to change the conversation about food. Additional highlights include a workshop on how to

work through a transparency check for your own initiatives.

Register for early bird rates and book hotels well in advance at [www.foodintegrity.ca](http://www.foodintegrity.ca) →



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Tom Hughes, President  
EarthFresh Foods

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## Liftomatic releases a new below-hook drum handling system

Buffalo Grove, IL.

Liftomatic Material Handling, Inc., an industry leading material handling equipment manufacturer, recently expanded its line of innovative drum handling equipment to include the new model 3A-HD-BHDL, a below-hook drum handling system.

The 3A-HD-BHDL is a fully automatic and mechanical below hook attachment that can be used to lift 55 gallon drums from an overhead position for placement to or from many containment devices, scales, pallets or similar handling requirements. Drums remain in a vertical position while lifted and/or transported with the 3A-HD-BHDL unit.

The 3A-HD-BHDL works with three radial arms that conform to the drum body and engage at the underside of the drum chime on nearly any 55-gallon steel or plastic drum. The unit has a working capacity of up to 3,000 pounds/drum. The three-point connection assists to maintain the drum's integrity during the lifting process.

A cutting-edge "intuitive-lock" engagement system ensures the radial arms remain in the locked position until the load is placed in its final resting location. Drums with a range of 21"-23" in outside chime diameter can be handled.

The 3A-HD-BHDL can be attached to any overhead lifting hoist, or can be affixed to Liftomatic's model FTB-3 forklift adapter, allowing the unit to be used from the underside of a set of forklift forks.

The 3A-HD-BHDL is ideal for energy industries, environmental operations as well as general use where overhead lifting of drums is required. The unit was designed as a result of customer requests for a positive locking system assurance that eliminates the need for a manual locking and unlocking of the armature to a drum.

Liftomatic Material Handling, Inc. is



headquartered in Buffalo Grove, Illinois, Liftomatic maintains manufacturing, engineering and sales facilities around the globe. Liftomatic currently sells products in over 40 countries and sells to more than 400 of the Fortune 500 companies.

For more information, please contact:

Liftomatic Material Handling, Inc.,  
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Buffalo Grove, IL 60089,  
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Email: [info@liftomatic.com](mailto:info@liftomatic.com).

[www.liftomatic.com](http://www.liftomatic.com)

## Global demand for refrigerators could quadruple by 2050

Soaring global need for cooling by 2050 could see world energy consumption for cooling increase five times as the number of cooling appliances quadruples to 14 billion — say researchers with the University of Birmingham, UK.

The report is the first to indicate how much energy would be required to provide "cooling for all."

Effective cooling is not only essential to preserve food and medicine, it is fundamental to industry and economic growth. It is seen as key to sustainable urbanization and key to reducing rural poverty.

With significant areas of the world projected to experience temperature rises that place them beyond those which humans can survive, cooling will increasingly be needed to make much of the world bearable — or even safe — to live in. With populations increasing, expanding urbanization and climate change impacts leading to more frequent heatwaves and temperature rises, the demand for more cooling will increase in the decades ahead.

There are currently 3.6 billion cooling appliances around the world today. The University of Birmingham report authors forecast that the 14 billion devices needed by 2050 will consume five times the amount of energy currently predicted for cooling usage.

The report — A Cool World — Defining the Energy Conundrum of 'Cooling for All' — states that, by 2050, if we are to meet our Paris Climate targets to hold temperature increases to 2C, total energy consumption for cooling must be limited to 6,300 TWh.

Without action beyond current technology capabilities and efficiency gains, cooling could account for 19,600 TWh of energy consumption per year, against a current annual usage of 3,600 TWh. Even with new technologies coming on board, the annual energy requirement will be 15,500 TWh.



The report states that, along with aiming to reduce overall demand, if we are to meet our climate goals a whole new system approach to cooling is needed, recognizing available free and waste cold and heat resources and incorporating new technologies, data connectivity, thermal energy storage to meet demand in the most efficient way.

“Current projections do not consider a ‘Cooling for All’ scenario and it will be impossible to meet the UN’s sustainable development goals as well as the Paris climate change targets. If we are to meet either of these, relying on technology efficiency and greening electricity won’t be sufficient,” said Professor Toby Peters, ‘A Cool World’ report author from the University of Birmingham’s Energy Institute.

“The challenge now is how to start with a system-led approach, better harnessing a portfolio of energy resources and adopting novel technologies. In order to achieve this, we need to start by asking ourselves a new question - no longer ‘how much electricity do we need to generate?’ but rather ‘what is the service we require, and how can we provide it in the least damaging way?’”

Given the urgency and need to combine engineering and social sciences for an integrated approach that includes the behaviour of individuals, technical solutions, and the business models to make those solutions viable, they also urge the creation of an international centre for excellence: its aim to deliver global collaboration on cooling — enhance awareness and understanding of the challenge of cooling; to build a roadmap and deliver the innovation pipeline; provide skills and education, and lead on trialling new technologies at scale.

The report builds on the University’s research partnerships in India and Birmingham recently signed an agreement with the State Government of Haryana to advance the use of ‘clean cold’ technology in India and help meet rising demand for cooling sustainably.

## New Caldic, Ingredion alliance

Caldic Canada Inc. and Ingredion Canada Corporation have announced a new distribution alliance.

Caldic will become Ingredion’s exclusive distributor for core sweeteners in the food industry across Canada, including glucose, high fructose and high maltose corn syrups, polyols, dextrose (monohydrate and anhydrous), glucose solids, and maltodextrins. ➔



## Fibersol included on FDA list of approved dietary fibres

After a review of available research, the U.S. Food and Drug Administration (FDA) has included Fibersol on its list of approved dietary fibres.

The widely used line of products are corn-based soluble dietary fibre ingredients produced under a joint venture between Archer Daniels Midland, and Matsutani Chemical Industry Co. Ltd..

It came under review after the FDA redefined dietary fibre and initiated a scientific review to identify dietary fibres that have a physiological effect beneficial to human health.

“ADM supports the FDA’s efforts to provide consumers with nutritional labelling information that is honest, clear and relevant,” said Greg Dodson, vice president Fiber, ADM, in a release. “We remained confident in the totality of scientific evidence that shows Fibersol’s physiological benefit to human health and its classification as a dietary fibre.

“With the FDA’s decision, food and drink companies can be reassured that their products using Fibersol can continue to be labelled as containing dietary fibre,” he said.

More recent studies have also shown it to be a prebiotic fibre that provides an increased feeling of satiety. It is also well tolerated at consumption rates as high as 68 grams per day.

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### Robotics for quality enhancement

Fromagerie La Station of Compton, Quebec will receive \$910,355 from the federal Dairy Investment Fund to install robotic equipment to improve the quality of its organic cheese products and enhance production capacity.

“This project will allow us to extend the ripening time for our certified organic farmhouse cheeses and to continue growing our company,” said Simon-Pierre Bolduc, director general for the company.

“Acquiring the automation system and expanding our ripening rooms will help us meet the growing demand for locally-produced ripened cheeses and respond to European competition in this niche market. With this project, we will be better equipped to deliver high-quality products.”

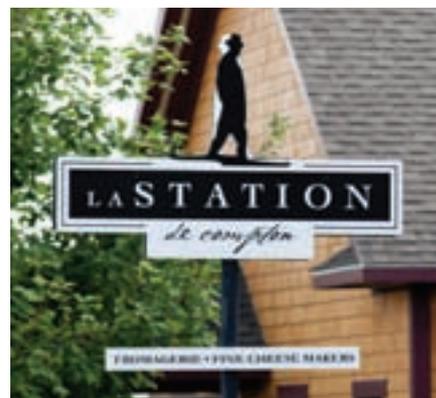


photo: fromagerielastation.com

The company specializes in four types of cheese: Alfred le Fermier, Comtomme, Chemin Hatley and a raciette cheese. All of its production is certified organic.

## AQUISITIONS

### Maple Leaf Foods expands into antibiotic-free and organic chicken

Maple Leaf Foods is purchasing two poultry plants and associated supply from privately-owned Cericola Farms.

The plants located in Bradford, Ontario and Drummondville, Quebec, collectively process approximately 32 million kg of chicken annually.



Maple Leaf has also entered into an agreement to secure 100 per cent of the processed chicken volume from Cericola's primary processing plant located in Schomberg, Ontario, and holds an option to acquire this asset and associated plant supply in three years.

“Cericola is a leader in raised without antibiotics and organic chicken. This acquisition will build Maple Leaf’s market leadership in these value-added categories and enable us to meet growing consumer demand,” said Michael McCain, President and CEO in a release posted on the company’s website.

Maple Leaf says in a release that the acquisition provides the company with additional supply and value-added processing capability to advance its leadership in higher-value categories.

Chicken is the most consumed and fastest growing meat protein segment in North America. Cericola specializes in air-chilled processing of antibiotic free and animal by-product free (“AABF”) and organic poultry products.



### Quebec meat processor Olymel acquires Triomphe Foods Saint-Hyacinthe, QC

Olymel L.P.’s executives have announced the acquisition of all assets of Triomphe Foods, an agri-food company with a strong presence in the Quebec market and mass distribution network that is particularly known for its production of a wide



range of deli meats and specialty hams.

The transaction includes three production facilities, located in Laval, Blainville and Québec City respectively, as well as two distribution centres in Blainville and St-Léonard. The price of this transaction will not be disclosed.



Through this acquisition Olymel also becomes the owner of the brands Tour Eiffel, Chef Georges and La Belle Bretagne (hams and pâtés), Nostrano (Italian deli meats), Alpina (Eastern European deli meats), Bilopage (cretons and head cheese) and finally Mother Hen, a well-known brand specializing in baby food production including organic fruit and vegetable purées and meat purées. The production and marketing of all Triomphe Foods products and brands will continue, and the acquired company will have autonomous management.

Since 2015, Olymel has invested more than \$800 million in its growth, resulting in the creation of more than 2,000 new jobs.

photos: getty images / fcaftodigital & LauriPatterson



## Food processing growth faces hurdles

An interim report by the federal Agri-Food Economic Strategy Table highlights three hurdles Canada's food processing sector must overcome if it is to capitalize on growing global demand.

Food processing sector investment in machinery and buildings as a percentage of sales is trending downward from three per cent in 2002 to two per cent in 2016, labour markets are tight and the skill set for the sector is evolving, and maintaining market access, the panel says.

The strategy table headed by Murad Al-Katib, president and CEO, AGT Food and Ingredients, delivered its report to the recent federal, provincial and territorial ministerial meetings.

"Canada needs to seize value-added opportunities, including more domestic processing, innovative end-uses for our agri-food products, co-product manufacturing and turning waste products into revenue streams," Al-Katib says in the report.

Balancing those challenges however, is this country's abundant land and water resources, its relatively well-positioned to access global markets, and its strong research and development capacity, the report says.

The federal government wants to grow Canada's agr-food exports to \$75 billion by 2025.

Canadian food producers and food processors can no longer afford to compete on the basis of price alone. Growing middle classes around the world are demanding higher-quality products, while socially-conscious consumers want foods with specific qualities, such as being locally sourced and sustainable, the report says.

It says the sector in Canada has lower rates of technology adoption compared to other countries, which is a liability.

"In a very short time, players who do not embrace automation, digitization and other technological advances will simply become non-competitive."

The report also called for investments

infrastructure required to get products to market and a "synchronized regulatory system" that supports the development and commercialization of innovative products. ●

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## MARKET TRENDS

Larry Martin

### TRUMP'S STRATEGY UNORTHODOX

All evidence suggests that the discontinuities in prices will continue. Trump clearly has goals and the way he goes about achieving them is radically unorthodox, ham-fisted and, therefore, without regard for investor expectations. Imposing very large tariffs is not the normal instrument for getting trading partners to reduce tariffs(!). But that's clearly the strategy.

The strategy comes from the fact that some trading partners, especially the EU, have long maintained protectionist policies while declaring they are friends. So, the unorthodox approach is to up the ante until it hurts enough to get the partner to speed up the progress toward freer trade. Current evidence is that both the EU and China want to talk.

With this approach, we could see tariffs come off as quickly as they came on. And it appears that capital markets are trading what they see, not what they expect: e.g. stock prices rose with low unemployment rates, even though 25

per cent steel tariffs could kill jobs later. "Now is good, we'll let later take care of itself – maybe with huge volatility."

Ah, but will it work? There is a tendency to count victories when they are not — witness new missiles being built in North Korea. Also, even some Republicans are turning against the policies, as is the powerful Koch network. Polls are finding reduced support. On the other hand, China doesn't have midterm elections and has a history of patience. Who will blink first? And what further lurches will we see before and after the blinking?

Seems like a pretty risky social experiment to foist on the world. ●

Market Trends is prepared by Dr. Larry Martin, who offers a course on managing risk with futures and options in Guelph, Ont. in January through [agrifoodtraining.com](http://agrifoodtraining.com). Contact him at [DLM@explornet.com](mailto:DLM@explornet.com) or (519) 841-1698.

### MARKET HIGHLIGHTS

Grain market charts resemble winter in the north Atlantic; the stronger the winds of political and weather uncertainty, the larger the waves.

**> Grains:** Trump's tariffs, China's responses and a projected large U.S. crop sent soybeans, corn and wheat into \$2.30, \$.80 and \$.90 tailspins from mid-June to mid-July. Then poor weather in Europe and Australia began to threaten crop supply. Chicago wheat gained back all of its loss, corn 50 per cent and soys 38 per cent.

**> Corn:** December futures dropped from \$4.30 to \$3.50 before rallying to \$3.86 currently. The rally is partly from the wheat situation, but drought in Europe and Brazil also reduced their summer crops. Now there's rumour of U.S. and China resuming trade negotiations, and concern about dryness in parts of the U.S. Corn Belt.

In our last column, we suggested buying December at \$3.77 or \$3.57. If you did either on a forward contract, you are well priced. If with futures, there is lots of technical resistance at \$4. Topping action there would suggest taking profit but, as always, protect on a move above it.

**> Wheat:** Wheat fundamentals converted bear to bull with December dropping from \$5.80 to \$4.90 before rallying back to \$5.72 currently. The big factor is drought in Russia, Australia and northern Europe. The

International Grain Commission forecast the lowest production in five years, and a decline in international stocks. Many traders do still expect U.S. stocks to put a lid on prices.

In the last issue, we suggested you remain covered with Calls above \$5.30 and wait for bottoming action before pricing. If you did that or caught the double bottom around \$4.95, we would stay covered.

**> Soy oil:** Soy oil continued its slide, dipping below \$.28 on the September, before a small rally back to \$.2875 currently. It continues to trail palm oil, which is being pummeled by rising palm supplies and India's tariffs, and the expected large soybean crop in the U.S. There is resistance around \$.30, and some technical evidence that this market has bottomed out. We suggest protection above \$.30 or locking in on bottoming action at \$.28.

**> Sugar:** The rally sputtered at \$.13 on the October contract, and has moved to three-year lows at \$.105 caused by weak demand and increased Thai and Indian supplies, and despite mild production issues in Brazil. Long-term support is \$.10, which should be a good place to do some pricing on bottoming action there.

**> Natural gas:** October NG prices have been relatively flat, ranging from \$3.30 to \$2.56, since May 2017. Abundant supplies of gas limits prices with small ripples from changes in weather that affect demand. October is currently at \$2.795. Resistance remains at

\$3. We continue to suggest protecting above \$3 or on a dip back down toward \$2.56.

**> Crude Oil:** October Brent made a double top at \$80.45 in May. Since then it essentially traded between \$80.45 and the old contract high of \$70.78. Upward pressure comes from reduced Iranian oil exports, since Trump's move, and strong demand from China and India. Downward pressure is increased output from other OPEC members and Russia. Technically, \$80.50 remains close to the 62 per cent retracement of the decline in oil prices from 2014 to 2016, making the \$80.50 – \$82 area extremely significant resistance. A break through could signal much higher energy prices. We suggest that oil buyers who covered above \$60 stay covered until there is clear topping action, risking a move back below \$70.

**> Canadian dollar:** The loonie broke out of its channel only to drop to \$.75, before rallying back to the channel: currently at \$.769 on the September. The rally seems to be fuelled by reasonably good domestic growth, continued strong oil prices, expectations that NAFTA talks might get on track, and expectations of another rise in interest rates soon. If you risk a lower loonie, we suggest buying Puts with premiums less than three per cent of the strike price, preferably on the September contract. We would look at the \$75.5s now and hold any you bought when the loonie was higher.





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# Baby, look how far we've come!

Ron Wasik

So many food safety developments have occurred in the past 80 years.

### Traditional processing technologies

Food processing technologies that have been with us for centuries have become safer and more efficient by adopting new technology and ingredients. They include curing, drying, freezing, continuous oven cooking, continuous retort canning, fermentation and pasteurization. Little fermentation occurs today without the benefit of genetically engineered micro-organisms. Pasteurization technology now includes high-temperature, short-time (HTST), ultra-filtration and nano-filtration.

### New Technologies

Technologies that have made our food safe include:

**Packaging:** Vacuum packaging, modified atmosphere packaging, controlled atmosphere packaging, intelligent packaging, the addition of anti-microbial agents to packaging materials and aseptic packaging (Tetra Pak).

**Processing:** Irradiation with gamma rays and electron beams (E-beam), infra-red light, UV light, pulsed electric field, high-pressure processing, non-thermal plasma and microwaves.

Ingredient technologies such as nano materials, biopreservatives incorporating viruses, non-pathogenic bacteria, natural preservatives such as nisin, lactic acid and sodium lactate. Processes such as sous-vide, reverse osmosis, whole-carcass washes with lactic acid and

peracetic acid and whole-carcass steam pasteurization.

**Facilities and equipment:** There have been numerous advances in food processing facility building materials and building design which have contributed to food safety. Modern facilities separate raw ingredients from ready-to-eat foods. Advances in metallurgy and equipment design have made equipment more durable, easier to clean and more resistant to bacterial colonization. Mechanization has improved sanitation.

**Sanitation and pest control:** Solutions of laundry soap and household bleach have been replaced by arsenals of unique soaps and sanitizers administered on a rotational cycle to maximize their effectiveness against pathogens, but also to minimize corrosion and impact on the environment.

**Analytical methods:** Traditional microbial plating methods are rapidly being replaced by faster and more precise methods. For example: 3M test strips, rapid-method test kits based on enzymes (ELISA — enzyme-linked immunosorbent assays) and DNA (PCR — polymerase chain reaction), whole genome sequencing and pulsed-field gel electrophoresis (PFGE). Data bases of genetic sequences permit more rapid identification of pathogens and are linked into networks that monitor outbreaks.

### Food safety agencies, concepts and legislation

**Agencies:** Over the past 80 years food safety has evolved to become a global priority with a host of agencies and organizations such as the WTO/SPS/

GATT, CODEX, ISO, and the Global Public Health Intelligence Network to mention a few. On a national basis, besides Health Canada, we now have the Canadian Food Inspection Agency (CFIA), the Public Health Agency of Canada (PHAC) and provincial equivalents of the CFIA and PHAC.

**Concepts:** Concepts such as HACCP, Global Food Safety Initiative (GFSI) schemes and Canada GAP have resulted in paradigm improvements in the safety of our foods. Food safety risk assessment through computer modeling is an emerging field.

**Legislation:** Food safety legislation has not kept pace with food safety technology and constantly evolving food safety risks, but steps are now under way to modernize our food safety legislation by way of the Safe Foods for Canadians Act as well as Inspection and Labelling Modernization.

### The internet of things and digital technology

**Social media:** A food processor's worst nightmare is losing his company's goodwill overnight through the spread of a story on social media. Consumers now rely more on Google and Wikipedia than on government and corporate sources for food safety information.

**Digital technology:** Digital technology in the form of personal computers, robotics, cell phones, satellite communications and tracking, equipment controls, RFID and bar coding have individually and collectively contributed to improving food safety in Canada.

### Acknowledgments

I must thank Richard Arseneault of the CFIA and Jeffrey Farber of the University of Guelph for their contributions to this article. 🍎

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## Dirty Milk

Ron Doering



While this year celebrates the 80th anniversary of the founding of this magazine, 2018 also marks a milestone in Canadian public health: it was 80 years ago this month that Ontario passed legislation to require the mandatory pasteurization of milk.

In the early 20th century, an estimated 25 per cent of the burden of food-borne illness was attributed to the consumption of contaminated milk and because milk consumption was identified as the source of multiple infectious disease epidemics, many municipalities in Canada and the U.S. required that milk be pasteurized. Ontario was the first large jurisdiction in the world to make pasteurization of milk mandatory.

The man who played the leading role in Ontario's decision to take this historic step was the premier at the time, the Honourable Mitchell Hepburn. After the worst epidemic of poliomyelitis in the province's history in the autumn of 1937, Premier Hepburn toured The Hospital for Sick Children where hundreds of children were being treated, many by artificial respiration in iron lungs.

While at the hospital the Premier also visited the girl's surgical ward where he noticed several girls with bandages around their necks and inquired about the nature of their ailments. He was told that the girls had been operated on to remove tubercular glands.

When he asked about the cause of glandular tuberculosis, the surgeon replied: "Drinking dirty milk." The surgeon went on to explain that since Toronto had

passed a bylaw requiring all milk to be pasteurized two decades before, no child born and raised in the city had ever been admitted to the hospital for tuberculosis caused by contaminated milk. All the girls he saw were from outside Toronto.

The premier thought it dreadful that children should have to suffer from something that could so easily be prevented and decided on the spot to legislate mandatory pasteurization for the whole province. During discussion of the bill, a member, hunchbacked and crippled by tuberculosis of the spine, rose from his chair to declare: "Gentlemen, if you have any doubt about the wisdom of this bill, look at me. I am the victim of dirty milk". The bill passed without a dissenting vote.

The wisdom of the bill is no less important today. Other provinces ultimately followed Ontario's lead and, of course, it is now also a crime to sell unpasteurized milk in all of Canada under B. 08.002.2(1) of the Food and Drug Regulations.

While many jurisdictions still allow the sale of raw milk, there is a broad scientific consensus that any supposed benefit of consuming raw milk is far outweighed by the clear and serious risk of its consumption.

In the U.S., the FDA strongly endorses pasteurization, citing 39 known outbreaks associated with unpasteurized milk over a seven-year period. Health Canada has been consistent: "Any possible benefits are far outweighed by the serious risk of illness from drinking raw milk."

Ontario is equally clear: "Raw milk is unsafe to drink because it could contain bacteria that cause illness." A major Ontario on-farm bulk tank study of raw milk produced under the best of quality controls still found the presence of *L. monocytogenes*, *Salmonella*, *Campylobacter* and verotoxigenic *E. Coli*.

The causal agent of Q Fever, *C. burnetii*, was found in 62 per cent of raw cow milk bulk tank samples. While most healthy people will recover in a week or so from small exposure to the pathogens that can be present in raw milk, for people with weakened immune systems, such as elderly, children and people with cancer, organ transplants or HIV/AIDS, exposure is dangerous, even fatal.

While a small group of libertarians still advocate for the legalization of the sale of raw milk rejecting the "industrialization" of food production and insisting that choosing what to consume is a basic civil liberty, fortunately all Canadian legislatures have opted to protect public health and safety through science-based policy making. If he were alive today Premier Hepburn would be proud to know that the Canadian Public Health Association ranks milk pasteurization as one of the greatest public health achievements of the 20th century.

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Ronald L. Doering, BA, LL.B., MA, LL.D., is a past president of the Canadian Food Inspection Agency. He is counsel in the Ottawa offices of Gowling WLG. Contact him at [Ronald.doering@gowlings.com](mailto:Ronald.doering@gowlings.com)



## Happy 80th Birthday Food in Canada

Gary Gnirss

This is the second part of a column on regulatory highlights over the past 80 years of *Food in Canada*.

The following are regulatory highlights from the 1960s onwards.

### The 1960s

The Guide for Food Manufacturers and Advertisers was introduced in 1961. It served an essential role for decades broadening the understanding of food regulations. It was born in an era of increasing complexity in food law, which just needed a bit more explaining in plain language. In 2014, the “Guide” was retired. A large part of it however made its way to the Canadian Food Inspections Agency’s web-based Food Labelling for Industry — Industry Labelling Tool.

### The 1970s

Consumerism of the 1960s and 1970s resulted in the creation, during the tenure of Pierre Trudeau as Prime Minister of Canada, of the Consumer Packaging and Labelling Act. It was given Royal Assent in June of 1971, and came into force in 1974. The act pulled together some 15 other statutes that dealt labelling such as net quantities, (previously under the Food and Drug Regulations, (FDR)), statement of identity, dealer name and address among other things. The regulations governing labelling of pre-packaged foods came into force in 1976. The CPLA provided uniformity in labelling of consumer products, provided required label information so consumers could make informed choices, had a big anti-fraud element, included standard container sizes for cer-

tain food products and included provisions for bilingual labelling. On January 15, 2019, foods will be withdrawn from the CPLA and its regulations, as the new Safe Food for Canadians Act and Regulations will then govern foods to the capacity that was under the CPLA&R.

### The 1980s

In 1987, the federal government was forced to amend the FDA, as a result of all things, a constitutional case they lost over lite beer. The case related to the federal government’s authority, and limit thereof, to enforce food standards in respect of intra provincial trade and commerce matters. This underpins much of the federal government’s reach within province on trade and commerce matters. It is also why the new Safe Food for Canadians Act and its regulations will only require food business to be licensed under CFIA in cases of food in interprovincial or international trade.

### The 1990s

The Canadian Food Inspection Agency (CFIA) was created when Bill C-60, was given Royal Assent on March 20, 1997. The inspection and enforcement activities of several federal departments, such as those from Health Canada, Fisheries and Oceans, Agriculture Agri-Food Canada. This represented a major consolidation of federal oversight in the food industry. It did not result however in the consolidation of the multitude of federal food laws. That has happened with the creation of the Safe Food for Canadians Act in 2012, and the promulgation of the Safe Food for Canadians Regulations in 2018,

which has set January 15, 2019 as the coming into force date of this new legislation that will usher in the next wave regulatory transformation in Canada.

### The New Millennium

In 2002, the FDR was amended to make nutrition labelling mandatory. The new regulations were phased in over the following three to five years. In 2016, the FDR was amended again to modernize nutrition labelling. These new regulations, which will emphasize calories and sugars, introduce new daily values and require a more standard approach to determining serving size, will be phased in by 2021, or perhaps 2022 if proposed extension is finalized.

In 2011, the FDR was amended to require foods to be labelled for priority food allergens, gluten sources and sulphites. The regulations came into effect in 2012. New enhanced labelling amendment in 2016 will also affect how such information is declared in the future. In 2012 as well, the FDA was amended to provide the creation of marketing authorities and use of incorporating by reference. We have this ripen into marketing authorization for food additives and numerous documents now incorporated by reference. This will permit Health Canada to be more responsive in an expeditious way.

### The Future

If we can learn anything from our history of food law, it is that our history is closely tied to our future. The safe Food for Canadian Act and Regulations as it evolves, will transform the future. To the next 80 years, cheers!

Gary Gnirss is a partner and president of Legal Suites Inc., specializing in regulatory software and services. Contact him at [president@legalsuites.com](mailto:president@legalsuites.com)

FOOD PROCESSORS OF CANADA

FPC

*A strong voice and ally in Ottawa for Canadian food processing companies*

Canada's food and beverage processing sector is entering an era of unprecedented global demand for the types of foods and ingredients this country produces.

Gearing up to meet those opportunities is challenging enough. But it's even more daunting when market access is threatened by escalating trade conflicts and growing fears that the world is on the cusp of an all-out trade war.

Canadian-based food processors have never been in greater need of a strong voice representing their interests. Food Processors of Canada (FPC) is the business association supporting executives who lead food-processing companies in Canada.

The member-driven organization has worked on behalf of Canadian processors for more than three decades and is actively engaged in helping them navigate these troubled trade waters.

"We're watching that situation very closely," says FPC President and CEO Denise Allen. "Uncertainty over tariffs and



Denise Allen



market access is a destabilizing force that discourages investment in growth and innovation at the very time Canada is trying to raise its profile as a reliable global supplier of food and ingredients."

The trade file may be front and centre, but it is just one of the issues on Allen's plate these days.

Based in Ottawa, Food Processors of Canada (FPC) has been the nationally recognized and respected voice for the food processing industry since 1989, offering one-on-one support for its members on regulatory issues, policy, business strategy, and government relations. At the same time, it promotes collaboration among industry stakeholders.

"Our association represents leaders and investors in Canadian food and beverage processing companies," Allen says.

Member companies, which include some of Canada's largest and long-established brands, recognize the value of a strong Canadian perspective at the policy table.

Three key areas of focus for FPC are helping Canada's processing sector become more cost effective, improving and harmonizing government regulations, and supporting the Canadian brand to realize its potential.

"FPC is unique in its ability to determine the impact and outcomes of government policy from the Canadian business perspective, and collaboratively present business-led recommendations," says Allen. "Members value, and appreciate, a progressive network which includes government officials, academic partners, thought leaders in agri-business, and collaborative relationships across all sectors."

Food processing is a highly competitive business, yet all participants in the sector face common issues when operating in a highly regulated environment.

"Collaboration and information sharing is key in examining the issues and partnering with government in a positive and progressive manner to reduce >

- Exports of processed food and beverage products to 192 countries and stood at \$33.5 billion in 2016.
- The industry's 6,900 businesses are the largest manufacturing employer providing direct jobs for over 257,000 Canadians, employing more Canadians than the auto and aerospace industries combined.

Source: Food and Beverage Canada (published February 28, 2018)

**THE INDUSTRY SUPPLIES 70% OF ALL PROCESSED FOOD AND BEVERAGE PRODUCTS IN CANADA**



*A word from Dare foods*

*Having an association that is willing to 'drop everything' to deal with your company-specific issue is like insurance providing peace of mind. You know that if you need them, they will be there to support you.*

*FPC is also a unifying force for the Canadian processing industry, providing broad advocacy for Canadian companies with production assets in Canada. The ability to understand and synthesize key issues into coherent, supportable positions is an essential capability for our industry. As Canada advances an important agri-food growth agenda, FPC provides key leadership and guidance to aid in both industry and individual member success.*

*Peter Luik  
President, Dare Foods*



regulatory burden and remove barriers to trade," Allen said.

"That enables FPC to remain true to our goals of growing the food and beverage industry and achieving our agri-food export goal of \$75 billion by 2025," she says.

Those targets, as laid out by the federal government's Advisory Council on Economic Growth would roughly double Canada's share of the global export market. While Canada is widely seen as an exporter of food commodities, only one-third of the projected growth will come from primary agriculture.

Growth in value-added food processing is expected to make up the remaining two-thirds, a huge opportunity, but also a major challenge for a sector that already exports \$33.5 billion in food and beverage products to 192 countries in addition to supplying 70 per cent of all processed food and beverage products in Canada.

Ramping up exports over the next decade will require investments in infrastructure, human capital and innovation. The latest Global Innovation Index published annually by Cornell University ranks Canada at 18th in its list of the world's most

innovative economies below China (17), the U.S. (6) and Switzerland (1).

"For companies to be able to attract and make investments to grow, they need a stable operating environment and a regulatory system that doesn't hold them back," Allen says.

"FPC's mandate and primary focus is the ability for Canadian food processing companies to effectively compete and grow," she says. "Government rules and regulations permeate all aspects of business activity and drives the level of regulatory burden Canadian businesses must shoulder."

The report "Death by 130,000 cuts: Improving Canada's Regulatory Competitiveness" prepared by the Canadian Chamber of Commerce, found administrative burden placed on business by government is both onerous and rising.

"While some government processes have improved, collectively, these gains have been outpaced by the increasing number and complexity of new regulations creating a costly and uncertain landscape for Canadian businesses to operate," she said.



A stable government and credible regulatory environment build and support Canada's reputation as a trusted supplier. It also makes it a safe place for investment.

However, Allen says that needs to be balanced against the need for businesses to function.

Regulations routinely overlap between jurisdictions. They are often conceived with an end goal in mind but with little understanding how they can affect processing efficiency.

"The cumulative effect decreases Canada's ability to establish, grow, innovate, and invest in business, thereby increasing the appeal of choosing to set up or expand in the United States as opposed to Canada," she said.

"Allowing this environment to continue will mean less opportunity for Canada's manufacturing job base and overall economic health."

The challenges are daunting, but Allen is excited by the possibilities. She took the helm at FPC in November 2017 after a long career specializing in strategy, finance, supply chain logistics and operations in the retail sector.

"FPC presents an opportunity to lever my executive experience and offer business led solutions to the issues facing the industry, and to make a contribution to the food and beverage processing industry and agri-food sector at a national level," she says.

"What excites and energizes me the most about leading FPC, is our shared commitment and passion for the future of Canada's food and beverage manufacturing sector," she says.

"Canada has all the ingredients to become a global leader in the agri-food industry."

## A word from Cavendish farms

*Cavendish Farms values its long-term relationship with Food Processors of Canada. FPC provides key insights and guidance on national matters potentially affecting our company and industry. As a private, Canadian-owned company, we appreciate that FPC provides a voice to legislators and regulators on behalf of Canadian food processors in a manner that would not be possible on our own.*

*In addition to advocacy work, FPC has a proven track record of successfully assisting executives when they are faced with company-specific problems especially when dealing with government enforcement.*

*Bill Meisner  
Vice President Operations,  
Cavendish Farms*



- With a GDP of \$28.5 billion, the food and beverage processing industry accounted for the largest share (16.4 per cent) of the GDP of total manufacturing sector.
- In 2016, the food and beverage processing industry's share of total manufacturing employment increased to 17.3 per cent from 17.1 per cent in 2015, providing 256,456 jobs.
- Canada's food and beverage processing shipments totalled \$112.4 billion in 2016. More than half were from the meat, dairy, and beverage sub-industries.
- Since 1992, the value of shipments of the food and beverage processing industry has consistently grown, except in 2005, reaching \$112.4 billion in 2016.

**DOMESTIC PROCESSORS BUY 38% OF CANADA'S AGRICULTURAL PRODUCTION**

*Source: Agriculture and Agri-food Canada*

## A word from Premium Brands Holdings

*Our choice, as a company is to either have our own representatives in Ottawa or to use the services offered by FPC. We believe that FPC provides us with a more efficient and effective way to navigate Ottawa.*

*As our voice in Ottawa, FPC is flexible enough to deal with our specific issues as they come up on an advocacy basis, while at the same time providing a forum for dealing with and discussing issues that affect the food processing industry as a whole.*

*FPC only accepts Canadian members and as such has a very unique perspective on the food-processing sector.*

*Its membership is very diverse across various sectors of the food processing industry. This gives FPC a more balanced vantage point on issues enabling it to seek consensus and solutions that are collaborative rather than confrontational.*

*George Paleologou  
President & CEO, Premium Brands Holdings*



# Food in Canada 80 YEARS

Established 1938

A look back at the foods, ingredients and processes that helped shape the Canadian menu

— By Andrew Joseph —

Canada as a country was founded on a mix of ingredients including healthy portions of many cultures, languages, ideologies, and most certainly food.

This publication has been witness to the evolution of food as defined by Canadians for just over half of its 151 years, but the origins of what defines this country's unique foods and flavours are much older.

Pemmican, a nutritious mix of dried pounded bison meat, fat and dried berries that sustained aboriginal hunters and gatherers in the cold winter months, was quite likely this country's first processed food. It was a portable, convenient and fast source of calories too.

Further waves of settlement brought new methods of food preparation and processing, harkening back to their country of origin, such as French Canada's Tourtiere Habitant meat pie that is even now available and enjoyed across the country.

Other examples include the Scottish bannock, a fried bread that is considered a part of East Coast heritage; and perogies that arrived with 170,000 Ukrainians emigrating to help settle the Canadian Prairies between 1891-1914.

Before refrigeration became common in the 1930s, folks were all about harvesting, shopping and purchasing their groceries on a daily basis whenever possible, or subsisting on dried protein meats, vegetable stores kept cool in underground cellars or iceboxes, jarred fruit preserves and pickled vegetables, making their own butter, cheese and breads, receiving home delivery of fresh milk bottled in glass jars, and brewing their own beer when possible.

Packaging evolved from butcher paper and twine during the Victorian era, to paper bags sewn shut with thread, paperboard packs and canned goods, which improved convenience as well as food safety. With packaging of course, came labelling as a means to describe products as well as promote them.

*“Greatest thing since ... sliced bread”*

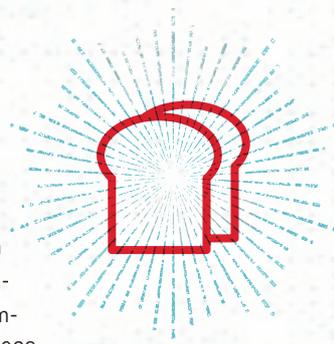
Even throughout the Great Depression, innovations in food processing continued, with perhaps the greatest invention ever — sliced bread — first used commercially by the Chillicothe Baking Company of Chillicothe, Missouri on July 7, 1928, thanks to a machine manufactured by Otto F. Rohwedder of Iowa.

The biggest problem for bread manufacturers at the time was trying to figure out how to keep the bread upright and together long enough after slicing to be effectively wrapped. Failures using rubber bands and metal pins were alleviated when the sliced bread was placed in a paperboard tray, which helped align the slices so the mechanized wrapping machines could do the packaging job.

The 1950s ushered in the era of frozen food innovations such as the TV dinners, followed by boil-in-the-bag options of the 1970s, only to have the introduction of the home microwave open the door to a new wave of convenience-based eating.

But from the Tang fruit-flavoured beverage made famous by astronaut John Glenn, to the iconic Canadian invention Kraft dinner to dining on microwavable processed meals, all that convenience came at a price. By the late 1960s, some consumers were beginning to question what's really in their food and how good for them it really was.

In the U.S., the 1969 White House Conference on Food, Nutrition, and Health recommended that the U.S. FDA (Food and Drug Administration) create a set of rules and regulations to correctly identify the real nutritional content of foods and beverages.



## Nutrition on labels

This led the way to the very first nutritional facts label laws in 1973, whereby food branding had to include a list of contained nutrients per serving or per serving size. The label needed to contain: calorie count; amounts of protein, carbohydrates, and fats, as well as if it contained Vitamin A, Vitamin B, thiamin, riboflavin, niacin, calcium, and iron, and sometimes sodium, and saturated or polyunsaturated fatty acids.

McCain's Superfries debuted in 1975; now anyone could create their own French fries by baking the frozen food in an oven. And, along with frozen pizzas, consumers could use pre-packaged ingredients in a box and simply mix in a few other ingredients found in the fridge to create their own tasty cakes and Jello desserts.

Nowadays, while convenience still reigns over the dual-income family, modern trends suggest that the focus on healthier eating is here to stay.

People have come to believe they truly are what they eat but they define healthy using a host of conflicting metrics such as low fat, low carb, organic, natural, plant versus animal-based protein, or vegetarian.

But it still has to be convenient, with Canadian consumers now spending upwards of 30 per cent of their food dollar on meals outside the home.

While debate rages over the greatest processing invention since sliced bread, innovations in food grade inks that don't leech through paperboard packaging into foods, plastic film wraps inside the outer packaging providing a longer shelf-life such as with cookies, modified atmosphere packaging (MAP), and methods that add gases to thermoformed sealed packs of deli meats to extend shelf-life, are all wonderful examples of ingenuity.

The jury is still out on whether plastic should have replaced glass bottles. One is infinitely recyclable, the other comes from a diminishing resource — oil, while a lighter weighted package means less of a carbon imprint affecting global greenhouse gases. A few years back, Coca-Cola debuted its lightweight PlantBottle, a recyclable PET plastic bottle partially manufactured from plants — sugar cane residue.

Recent packaging innovations such as the stand-up plastic film pouch with reclosable zipper, are now mainstays on the grocer shelves.

Industrial maintenance is huge in today's food processing indus-



| Nutritional Facts     |               |
|-----------------------|---------------|
| Serving size (300g)   |               |
| Amount per serving    |               |
| Calories 100          |               |
|                       | % Daily Value |
| Total Fat 1g          |               |
| Saturated Fat 0g      |               |
| Trans Fat 0g          |               |
| Cholesterol 0mg       |               |
| Sodium 0g             |               |
| Total Carbohydrate 1g |               |
| Dietary Fiber 5g      |               |
| Sugars 5g             |               |
| Protein 5g            |               |

try, what with food and beverage safety being a top concern for processors and brand owners.

Cleaning products and equipment are now equal concerns for processors, as is the design of processing equipment. Designers create machinery that can be easily cleaned and not possess recesses or sharp corners where cleaning agents or food can be caught and remain turning the machine into a breeding ground for harmful bacteria.

Handwashing stations, worker garb for their own safety as well as for product integrity are also much needed considerations for processors, looking to achieving international food safety certifications. Automated plastic pallet washers and tracking of pallets are also important features of an effective food and beverage processor.

While the UPC code — the enigmatic bar code — debuted on packages in the early 1980s, the QC code is now used by RFID (radio frequency identification) scanners to provide accurate tracking of packaged materials from farm to shelf.

QR codes scannable with a smartphone have allowed consumers to download refreshing songs from Coca-Cola, while labels with augmented reality capabilities have allowed global toymaker LEGO to provide its customers with an animated in-store experience of seeing an animated version of the building box in action when held in front of a special vision system. It's not food, but it is food for thought.

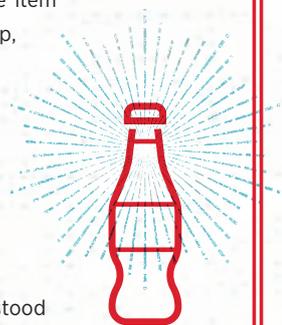
While robotics automation on the factory floor was once considered to be either too expensive or the death knell of the human worker, recent advances have made robots and robotic technology an affordable — and increasingly necessary proposition for food processors, given the rising cost and short availability of labour.

With an eye to the future, driverless cars and trucks are being tested on roadways, which could not only affect the way foods are delivered but just how the consumer pays for a pizza pie.

Worker-free shops are also being tested, with the shopper's smart phone scanned upon entrance. After removing the food or beverage product from the shelf, it adds it to a running bill. Replacing the product back on the shelf removes the item from the consumer's bill. Upon leaving the shop, a preset financial transaction is completed by either removing funds from a bank account or charging a credit card. No humans required.

Of course e-retailing allows one to perform their grocery store purchases from the convenience of their home via the Internet on the home computer or phone.

Much bandied about, but not well understood by the average consumer are the fairly new terms of



## 1950 THE ERA OF FROZEN FOOD INNOVATIONS SUCH AS THE TV DINNERS



Industry 4.0 and IoT (the Internet of Things) — essentially two differing methods of data storage within the Cloud.

While things are still in the early stage, digitalization and IoT, for example, provide a means for better production-line efficiency, which in turn can help brand owners achieve sustainability targets or reduce waste and energy usage.

Automated production lines within a food and beverage processor's facility can be linked to send individual or grouped equipment data to the Cloud where their own data scientist can harvest the data to present options, where applicable, to create a more efficient production line.

The cloud-related concepts involving the food and beverage industry are still in its infancy, as are driverless cars and trucks, automated grocery shops, and robotic restaurants, and it is still too early to determine how far-reaching their effects might be.

In answer to the backlash against "industrial" value chains, the craft beer market and spirits has flourished along with farmers' markets supported by aging Baby Boomers and Millennials, who see food as a reflection of their values as much as they do nutrition.

Does the future hold further promise for old tradition brought new again with the re-emergence of artisan foods alongside healthier food and beverage alternatives? Will new packaging initiatives such as upcoming new label regulations cause more clarity or grief for the consumer and processor? What about the impact of legalized cannabis as a new ingredient in both food and beverage recipes?

Time will tell those stories and *Food in Canada* will share them with you.

Here are three profiles of processing companies that are keeping up with the times.

## Thornloe Cheese Inc.

*This farmer-owned cheese company is keeping abreast of new opportunities*



**T**hornloe Cheese Inc., located in Guelph, Ont., is a farmer-owned genetics company producing cheese products under the Thornloe brand in Northern Ontario since 1940.

Established by Rene Laframboise with two employees in the village of Thornloe, Ont., its first cheese production run used 900 pounds of milk to create 90 pounds of Canadian cheddar.

Employee Fernand Jubinville purchased the growing business in 1944, selling it in 1956 before buying the successful business back in 1966 with partner Joe Laffin.

At this time, local dairy farmers would come by the facility with their eight-gallon milk cans — some with 20 cans, others with just two.

In June of 1969, the company built a new plant at its current location in Thornloe, adding three small vats, tables for packing, a refrigerated storage area and a small retail shop out, before constructing an attached warehouse in 1973.

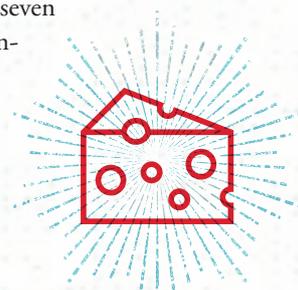
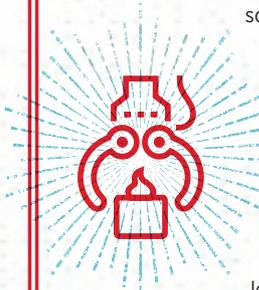
The company continued its strong growth in Northern Ontario, building upon its reputation for taste and quality within the Francophone community.

In 1978, Balderson Cheese purchased the company, but maintained the Thornloe brand and operations, growing the business and expanding the facility by almost doubling its size and adding a new production area and milk-receiving bay.

In June of 1982, Ault Foods — owned by beer giant Labatt — purchased the Thornloe entity from Balderson, and with its connections continued the company's growth taking in 40 million litres of milk annually to produce its cheese products.

With demand up, so to was its roster of workers, with around 40 employees helping keep the operation running seven days a week and over 22 hours a day — with remaining time provided for equipment clean-up and maintenance.

Fifteen years later in 1992, Thornloe Cheese was gobbled up by Parmalat, and continued to produce cheese for the Northern Ontario market.



When Parmalat announced in 2006 that the plant no longer fit within its business strategy and was planning on closing it, a group of local dairy farmers worked together with Gencor, a farmer-owned genetics company, to purchase the cheese and cheese curd business in 2007.

After a merger in 2011 with Eastern Breeders Inc. of Kemptville, the newly dubbed EastGen maintains ownership of Thornloe Cheese.

Nowadays, along with the cheese and curds products, the company has expanded into producing artisan and other fine cheeses. In fact, Thornloe Cheese has won awards at major cheese competitions across Canada for eight of its newly developed cheeses.

After nearly tripling its business outside of the Northern Ontario market, the company grew its sales in 2017 to \$5.2 million, as it continues to support 44 local dairy operations.

In 2017, the cheese maker processed three million litres of milk from local Timiskaming-area dairy farmers, converting it into over 290,000 kilograms of cheese.

And this year is shaping up to be even better, with over 150,000 kilograms of cheese and over 50,000 kilograms of butter produced at the half-year mark.

The company's moderate size allows Thornloe Cheese to remain flexible while its close alliance with local dairy farmers provides it the opportunity to discuss ways it can introduce new and innovative products to the Canadian market.

The company certainly has come a long way from its roots of offering five- and 10-pound blocks of cheese cut from a wheel, to where it is now offering professionally packaged retail-ready goods in 200- or 260-gram branded packs.

And yet, the trend towards larger cuts is beginning to be requested again as Thornloe Cheese is receiving requests from delis, artisan cheese shops and chain grocery stores, for bulk cheese formats so that they can custom-cut the product for their customers in-store.

The company is continuing its inventive streak by developing new cheeses for the Canadian ethnic market and Canada's emerging functional food market, as it plans to take things to a whole new level of productivity, quality and taste. 🍓

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# Crosby Molasses Co. Ltd.

Five generations strong

— BY TREENA HEIN —

**T**he sweet story of Crosby Molasses began almost 140 years ago in Yarmouth, Nova Scotia.

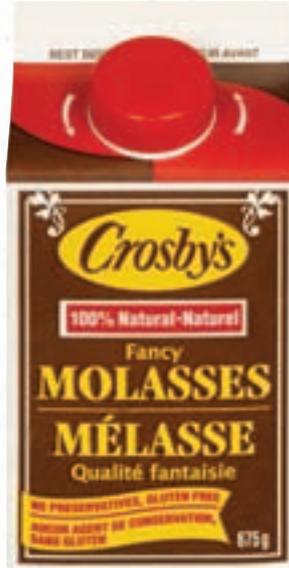
It was 1879 when company founder L. G. Crosby began exporting fish and lumber from the East Coast of Canada to the West Indies – and having those ships return with casks filled with fancy molasses.

“The company relocated to Saint John, New Brunswick in 1897 to take advantage of the bustling port there,” says President James Crosby, “and we continue to this day to import fancy and blackstrap molasses through the port of Saint John.”

Originally, Crosby imported molasses in large wooden barrels called puncheons, but by the 1950’s, it had made the move to import molasses in bulk, off-loading ocean tankers directly into large storage tanks by pipeline. The model of importing large amounts by ship and storing it under the right conditions throughout the year means that the quality and consistency of the final product is continually maintained. The entire operation – packaging plant and bulk storage facility – is still based in Saint John.

Each generation of the Crosby family along the way has made other changes as well, building a business that provides molasses and other products to consumers and food manufacturers across Canada and increasingly, around the world. Now a fifth-generation family operation, the firm has also acquired competitors over the years, most notably the Grandma brand (a fixture in the Quebec market) in the late 1990s. Crosby’s brand is available at major retailers from coast to coast and Grandma molasses is available in Quebec and some parts of Ontario.

Crosby markets both blackstrap and fancy molasses. Blackstrap is a by-product of sugar refining and is much more common and hence competitive. Fancy Molasses is only made in a few select sugar mills around the world, pro-



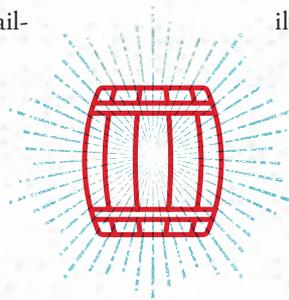
duced from evaporated sugarcane juice that’s inverted into syrup. “We import our molasses from a single mill in Guatemala,” Crosby says. “To ensure food safety, the raw molasses is filtered and heat-treated before being packaged for distribution.”

Crosby also makes custom blends of both fancy and blackstrap molasses to provide unique sweetness and flavour profiles for its retail, food service and industrial customers. The versatility of molasses makes it great for manufacturing a wide range of products from breakfast cereals, baked goods and snack bars, to granola, candy, dressings and sauces. Crosby also offers a growing line of dry and liquid sugar blend products for its customers, and co-manufactures and distributes hot chocolate, drink crystals, table syrups and jelly desserts for

some of the top retail brands in North America.

Of the many changes the business has seen, Crosby lists the most notable to be the rate of technological change and consolidation in the retail space. “Where once we dealt with dozens and dozens of retailers, the majority of our retail business is now clustered with the major retailers across the country,” he notes. “But no matter how many or how few customers we have, we focus on putting our customers first and helping them to grow their businesses. We have continued to be successful because we’re a collaborative team and we value long-term relationships.”

Crosby plans to double its throughput by 2023 by expanding its molasses business and co-manufacturing activities and enlarging its marine terminal. “Because we’re family-owned, we make decisions for the long-term benefit of our company,” says Crosby. “We look ahead to the next generation as much as we do the next quarter. And while we’ve seen a lot of change in our 139 years, one thing Crosby’s will never change is commitment to our customers’ success.” ●



Minister  
of Agriculture and  
Agri-Food



Ministre  
de l'Agriculture et de  
l'Agroalimentaire

Ottawa, Canada K1A 0C5

### Message from the Minister

On behalf of the Government of Canada, congratulations to *Food in Canada* magazine as you celebrate 80 years as the voice of the Canada's food and beverage processing industry. For eight decades, you have served as a trusted source of information on key issues, emerging trends, and equipment and ingredient supplies. In such a fast-paced and dynamic industry, the information you provide will continue to be critical to sound decision-making and the continued success of Canadian processors.

With over \$112 billion in sales, the food and beverage processing sector is a key driver of jobs and growth for communities across Canada. It is the largest manufacturing employer, and the most important customer for our farmers. Last year, Canadian processed food exports topped \$35 billion, just over half of Canada's total agriculture and food exports. Exports of processed food and beverage products have experienced significant growth in the last five years, with an average annual growth rate of 7%, accounting for about 30% of production value. Canadian processed food and beverage products are exported to some 192 countries. Thanks to new trade agreements we've concluded in key markets including Europe and Asia, we will help our food industry reach our goal of \$75 billion in exports by 2025.

To get there, we will need innovation – the lifeblood of the food processing sector. The food and beverage processing industry continues to invest about \$2 billion annually in capital expenditures, with about 80% of the total invested in machinery and equipment, including in innovation and leading edge technology. The Government of Canada is committed to helping processors get the tools they need to stay on the cutting edge. This includes the \$128-million AgriInnovate program, part of the \$3-billion, five-year Canadian Agricultural Partnership. The program will help Canadian agri-businesses, including food processors, adopt new technologies and practices to improve their competitiveness and sustainability.

Canada has the potential to be a food manufacturing superpower. Global demand is growing for high-quality food, and our world-class farmers and innovative food processors are ready to deliver. I would like to thank everyone at *Food in Canada* for your work providing them with the valuable insight they need to succeed. Best wishes for 80 more years of success!

Lawrence MacAulay, PC, MP,

Minister of Agriculture and Agri-Food

Canada



# Griffith Foods Canada

*Bringing science to the food industry*

— BY LAURA RANCE-UNGER —

**G**riffith Foods Canada first opened in 1929 in Toronto as the first international expansion of the U.S. – based Griffiths Laboratories, founded in Alsip, Illinois in 1919.

Griffith Laboratories was established by the father-and-son team of Enoch Luther (E.L.) Griffith Carroll Ladd (C.L.), after they were given the opportunity to take leadership of a small pharmaceutical company owned by a family friend.

Their vision was to “bring science to the food industry”, and although the company was renamed Griffith Foods in 2016, its reliance on the latest in science and technology, its commitment to building lasting customer relationships and developing customized solutions continue to be its core values.

The company, was initially dedicated to making better meat and bakery products — enhancing flavours, improving functionality, creating faster and more efficient processing, reducing costs and introducing safer alternatives.

Today, the company’s capabilities range from seasonings and breading, to marinades and sauces blended to exacting specification that are culturally authentic, taste great and improve food safety.

“Everything we do is tailored to our customer’s needs — whether the goal is to differentiate through distinct flavours, textures or appearance, achieve cost savings without altering critical attributes, increase your healthful offerings, or gain functional advantages such as shelf life and yield,” says Taylor McNerney, marketing manager, Griffith Foods Canada.

Now a global player with its Custom Culinary and Innova brands, Griffiths operates on four continents. In Canada, it operates three bakery lines, one flavour manufacturing line, four kettles, 10 blenders and 15 packaging lines.

“Innovation is an important part of our business,” McNerney says. “Griffith Foods holds over 300 patents globally, spanning some 90 years to date covering process, equipment and product. We are an innovation leader, with more than 30 scientists on the Canadian team



dedicated to bringing superior food science to the food sector.”

One of the biggest changes in product delivery has been the increased focus on recyclable packaging.

For example, old-style drums with steel rings around the top and bottom (called chimes) have been largely replaced by recyclable pails, and corrugate drums and totes.

Non-recyclable foil in packaging has been replaced with rigid poly/paper-type packaging wherever possible. Many packaging manufacturers are now using post-consumer recycled content as part of their construction which reduces the amount of new virgin materials to be used.

In addition, modern food safety protocols have led to changes in the requirements for documentation of its packaging. Specifications are now captured throughout system to identify all packaging. This also ensures that all packaging is food grade, FDA or CFIA approved.

“Consumer trends are having a major impact on our business resulting in changes in how we go to market,” McNerney says. “Some of the important ones we have identified as having the greatest impact on our business include: transparency, health and nutrition, sustainability, and authenticity.”

In response to consumer demands, the company has established its own Griffith Sustainably Sourced (GSS) business platform, which targets farm-level integration of the supply chain.

“The goal is to help agricultural producers improve the yields and production of their fields while enabling traceability,” she says. “This program also increases the amount of raw materials sourced from Rainforest Alliance Certified farms.”

Adapting to changing times while remaining true to its core values is how Griffith Foods plans to remain relevant for another 100 years.

“We will continue to live out our purpose, that we blend care and creativity to nourish the world, at every level of our organization,” McNerney says. ●



# Fresh takes on frozen

**Frozen fruit and vegetable makers are enticing health-conscious consumers with new, on-trend products**

— By Rebecca Harris —

**W**hile there's a big focus on "fresh" these days, the frozen fruit and vegetable market is heating up. In the latest 52-week period (ended May 26, 2018), frozen fruit sales in Canada reached \$327.67 million, a four per cent increase from the previous year, and unit growth increased eight per cent, according to Nielsen. Sales of frozen vegetables climbed to \$317.3 million, a four per cent jump from the previous 52-week period, while unit growth grew three per cent.

"Frozen fruits and vegetables continue to outperform total [grocery store] sales when it comes to both dollars and unit growth," says Isabel Morales, consumer insights manager at Nielsen. "With Canadians being more aware of health trends, and their intentions to consume more plant-based foods, frozen produce offers a convenient alternative to its fresh counterpart, leaving aside concerns of food going to waste."

With the current emphasis on fresh food, a return to growth and interest in the centre frozen aisles is notable, said Dewey Warner, research analyst at Euromonitor International, in a statement about ConAgra's recent purchase of frozen food company Pinnacle. ↪

“Most of this has to do with frozen food companies finally coming around to some self-reflection and altering the products they have relied on for so long in order to better meet consumers where they currently are (as opposed to consumer priorities suddenly shifting back toward processed frozen foods).” For example, Pinnacle’s Birds Eye frozen vegetable brand has added innovative products such as riced vegetables and cauliflower items with bold flavours — all items that are helping to fuel growth, said Warner.

B&G Foods’ Green Giant is another frozen vegetable brand that’s developing products aligned with consumers’ eating habits and culinary trends. “If you look to sources such as Pinterest or other social channels, you’ll see that consumers are looking for new ways to incorporate vegetables into their lives,” says Charlene Elliott, senior brand manager at Toronto-based B&G Foods Canada. “Green Giant is trying to respond to that with new and different ways to use vegetables.”

For example, Green Giant’s new Riced Veggies, made with 100 per cent vegetables, are positioned as a vegetable alternative to traditional rice. The line includes Cauliflower, Cauliflower & Broccoli, Cauliflower & Sweet Potato, and Cauliflower Medley. “We were seeing that consumers were ricing at home. It’s



a lot of prep time that we’ve been able to reduce for them by bringing this product into the frozen vegetable section,” says Elliott. “There’s less cleanup, it’s less messy and there’s not as much waste.”

This September, Green Giant is bringing Veggie Spirals — a line of “noodles” made from spiralized carrots, zucchini, beets and butternut squash — to the Canadian market. The products, which launched in the U.S. in 2016, are made from 100 per cent vegetables with no added sauce or seasoning.

“We know spiralizing is a huge trend in the market right now and we want to help consumers get more vegetables onto their plate,” says Elliott. “They can choose to either spiralize their own vegetables from fresh, or if they’re time-strapped or need an alternative, they have a more convenient frozen format that they can turn to.”

From a demographic perspective, Green Giant’s new products appeal to a wide range of consumers, according to Elliott. “We know that millennials are looking for cleaner ingredient decks and they’re more engaged in their food choices than previous generations may have been,” she says. “We also know that the older demographic is similarly interested in what they’re eating because their lifestyles are more active now... So, [the products] appeal to almost every Canadian consumer.”

The trend towards healthy living and convenience is also driving growth in the frozen fruit category. “There’s a greying population in Canada and they’re looking for healthy foods, so frozen fruit fits into that,” says Isabelle Chartrand, director of marketing at Saint-Laurent, Que.-based Nature’s Touch Frozen Foods Inc., a private label supplier that also markets its own Nature’s Touch brand.

“We also have smaller households in general, which can be because more people live alone, they wait longer to have kids, or they don’t have kids at home anymore. They’re looking for single-serve formats and they like frozen fruit because there’s no waste.”

People are also quite busy, adds Chartrand, and working parents in particular are looking for convenient formats, food that requires less preparation, and easier on-the-go options.

To meet those needs, Nature’s Touch recently developed two snackable varieties of frozen fruit: Grape-2-Go and Mango-2-Go. There are five 100-gram snack packs in each bag. “Fruit as a snack is really a big occasion, but frozen fruit hasn’t been very present in the snacking world, so we decided to launch



### WHAT’S HOT AND WHAT’S NOT

Crowned the “it” vegetable by foodies last year, cauliflower is now the hottest item in the frozen vegetable section. **SALES OF FROZEN CAULIFLOWER JUMPED TO \$8.6 MILLION**

**IN THE LATEST 52 WEEKS** (ended May 26, 2018), up from \$2.5 million in the previous period — a whopping 242 per cent increase, according to Nielsen. Meanwhile, frozen sweet potatoes are feeling a bit of a chill. Sales declined -18 per cent, from approximately \$511,000 to \$419,000.

Frozen mashed potatoes saw a decline of -15 per cent, from \$216,000 to \$182,000.



photo: iStock / Getty Images Plus / chengyuzheng

small sachets of ready-to-eat frozen fruit,” says Chartrand. “You can eat it straight from the snack pouch or take it with you and eat it later.”

Nature’s Touch is also readying the launch of pre-portioned green smoothie kits in two varieties: Mango-Kiwi Fusion and Tropical Avocado Bliss. Chartrand says smoothies are the number-one occasion for frozen fruit, and green smoothies are gaining in popularity.

“The challenge with making a green smoothie is having the correct blend of ingredients because if you have too much kale or spinach, it doesn’t taste very good,” she says. “With pre-portioned packs, you have the right blend and you just need to add liquid and you’re ready to go.” The packaging also suggests the product is great for making frozen treats and dressings. “We don’t want people to think that frozen fruit is only for smoothies,” says Chartrand.

And with the organic trend on the rise, Nature’s Touch recently launched a smaller format of organic fruit, including mango chunks, raspberries, sliced strawberries, wild blueberries and a berry blend called Very Berry Burst. “One of the barriers to buying organics is obviously the cost,” says Chartrand. “A 300-gram format seemed like a good way to be more accessible for people shopping for organics, who may be on a tighter budget. [Organic shoppers] are typically parents looking to offer the best for their kids, or millennials who are often more cash-strapped than older households.”



What’s ahead for frozen fruits and vegetables? According to a report by Market Research Future, the global fruit and vegetable market will grow at an annual rate of 5.34 per cent and reach 751 million tons by 2027. The report notes that demand has been increasing due to changing consumption patterns, growing demand for new ingredients and flavours, and the preference towards convenience foods. Any way you slice it, the future of the frozen fruit and vegetable category looks bright. 🍎

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# PICKLED *splendor*

New ingredients and flavour combinations help today's pickled and fermented products make a zesty splash

— By Treena Hein —



photo: iStock / Getty Images Plus / Detry26

**L**ike other foods and beverages made with traditional methods, pickles and ferments are making a huge comeback. And, as with food products in most other sectors, both old favourites and new gourmet innovations are in demand, with fresh ingredients and cleaner labels a priority.

Strub's is one of Canada's most historic and best-loved pickle products, and the brand has seen double-digit growth over the past three years. "Strub's flagship product, the Full Sour Original Brine, has been around for decades, and that's due to an amazing job done with positioning the brand and creating loyalty,

both before and after we bought the brand in 2012," says Claude Brière, vice president of sales and marketing at Quebec-based Whyte's Food.

The cucumbers in the Full Sour Original Brine ferment naturally and create the signature authentic cloudy-looking lactic acid at the bottom of the jar. "The fermentation gives a unique flavour, and that's one of the reasons people are so loyal to the product," adds Brière. "We use 100 per cent Canadian cucumbers when we make a Full Sour Original Brine Pickle and also make it a priority to use as many Canadian ingredients as we can in all our other products."

Those products include pickled eggs, hot peppers and new line of non-pasteurized refrigerated cucumber pickles released in 2015 called 'Pickles in a Tub.' Brière describes them as fresh, healthy and very crispy. Whyte's other well-known lines are Coronation and Mrs. Whyte's that both include various varieties and kosher products.

The firm's overall sales have been increasing slightly every year, including both the retail and food service product lines. "We do a lot of kosher in food service," says Brière. "We actually sell over 300 food service products, and

originally when Whyte's Food started, it was all food service. We moved into retail later. We're proud to still be a family-owned, Canadian food maker and we also import a few products that would be impossible or very difficult to make here such as Strub's Banderilla Skewers (mixed pickles on skewers)." While Whyte's is working on some delicious new products, the company isn't ready to share information on them at this point.

## Gourmet delights

Among smaller Canadian firms riding the pickle popularity wave is Sunshine Farms in Thamesville, Ontario. It makes over 20 types of pickled products from its own farm harvest, many of them certified organic, from Fiery Baby Dills to pickled asparagus, garlic, beans, carrots and pearl onions.

Alchemy Pickle Company in Toronto is another smaller firm but it offers only organic products that are fermented from certified organic Ontario produce, including vegetable mixes and kombucha beverages. The focus, says owner Rebekka Hutton, is on using a small-scale, slow process with high-quality artisanal results. "Our fermented products are regional and seasonal, which brings incredibly complex layers of flavour that can't be recreated by shortcut amendments," she says.

In addition to Classic and Ruby Sauerkraut, Alchemy offers 'Curtido Spiced Sauerkraut,' a Latin American-inspired recipe with oregano and thyme. Its 'Seasonal Spicy Kimchi' is a spicy, traditional-style pickled cabbage that can be used as a topping, side dish or base for soups and braises. Its 'Sichuan Daikon Radish' is a heady mix of radishes with fiery chilies, peppercorns, spices and garlic.

Hutton says she's noticed "a definite increase" in the volume and variety of pickled and fermented products that are available in Canada over the past five years in retail, and she's also seen more restaurants add a variety of gourmet pickled products to their menus, from fiddleheads to milkweed pods.

"While the ubiquitous dill pickle has always been at the table, now we have a wide range," she says. "We have also seen interest in fermented, organic, local and health-focused. New customers already know they want a raw fermented sauerkraut or kimchi for flavour and probiotics, even if they haven't tried it before. Or they have heard that kombucha might help with digestion and tastes delicious."

Alchemy makes many kombucha flavours, including 'Jasmine Apple Lemon Balm' with Jasmine tea and apple cider and 'Pear Ginger' with nettle leaf and chamomile flowers. Hutton says she's seen a big increase in demand this year for her kombucha, and it's on tap at local cafés, bars and restaurants. Alchemy also makes a traditional fermented beverage called kvass from beets.

Pyramid Ferments in Prince Edward County, Ontario is another smaller fermented products firm



photo: pyramidferments.com

gaining a big reputation. The company, owned by Jenna Empey and Alex Currie, has twice received the provincial 'Premier's Award For Agri-Food Innovation,' in 2014 and again in 2016. It makes innovative kombucha, beet kvass and many artisanal sauerkrauts in flavours such as Dill & Garlic, Harissa, Pink Salt & Pepper and Smoked Garlic & Jalapeno. Like Hutton, Empey has also seen a recent increase in demand for fermented foods and drinks year after year, and also believes demand is in response to customer desire for both probiotic or functional foods, made locally.

However, Empey reports that some larger companies are trying to capitalize on the current demand for fermented products by adding synthetic probiotics or making foods and beverages seem more gut-friendly in other ways. She says it's very important to her and Currie that Pyramid offers only high-quality, authentic ferments, including kombuchas that are among those containing the lowest amounts of sugar on the market. Their recipe for success is working. In 2017, Pyramid had an 80 per cent increase in revenues over the year before. "Kimchi has remained a steady seller but we are seeing huge growth in our probiotic drink line," Empey observes. Pyramid's 'Gut Shots' is a concentrated sauerkraut/ kimchi brine with a high probiotic content that can be consumed as a digestive tonic (a 'shot' a day) or used as a flavour enhancer in other drinks or foods.

In other parts of Canada such as British Columbia, artisanal kombucha production is also going strong. 'Motherlove Ferments' in Kelowna makes organic kombucha using the juice from freshly-picked local orchard fruit in flavours such as Lavender, Lemonade, Sweet Ginger, Hibiscus, Raspberry (and seasonally, Mojito, Root Beer and Cherry Cream Soda). 'Sajiva Kombucha,' also in Kelowna, offers seven varieties, including Okanagan Grape, Blueberry Chamomile and Chai Spice. ●



photo: alchemypicklecompany.ca



## Better ways to sanitize

By Yvonne Dick

**P**reventing contamination and cross-contamination is important for all food and beverage processing plants. Luckily, food manufacturers have an arsenal of products to help clean work and processing stations and better ensure that the finished product is safe for consumption.

There are companies offering more environmental and less toxic solutions as the technology and knowledge of keeping food processing equipment clean evolves in the 21st century. New machinery has been designed with greater efficiency and better use of water to make the job more environmentally friendly as well.

### Degreasing equipment

For instance, gains have been made in the equipment and liquids used to degrease food processing machinery. Formulations that are safe for processing plant workers, as well as pH neutral and non-alkaline liquids, help get the job done. These are capable of removing a variety of build-ups such as grease, starch and protein. They are also biodegradable and easily filtered through wastewater treatment facilities for lower environmental impact. Having fewer liquids to catalogue and clean with makes economic as well as food safe sense.

Especially important for baking and meat packing operations, degreasing solutions enhance the performance of plant machinery and allow the other components of the cleaning process to effectively remove hard to clean dirt and other food debris. This clears the way for a thorough, food-safe sanitizing

operation to occur as part of regular machinery maintenance during the workday. The current availability of non-rinse antimicrobial agents used during food processing can be used around food products such as fruit, vegetables, red meat, fish and seafood. While providing antimicrobial protection during packaging, the solutions are suitable for organic processing and have a low environmental impact.

### Sanitizing surfaces

Some of the newest sanitizing solutions have been formulated with kosher ingredients to serve as multi-function multi-purpose cleaners. For example, cleaners which can handle metals as well as hard surfaces which may be plastic or wood — walls, floors, and furnishings. Cleaners made with new gel technology are intended to optimize food safety. The gel can be applied to surfaces and left to 'soak', providing a larger cleaning surface, that is non-foaming. This makes it easier to rinse away while retaining its powerful cleaning and sanitizing properties. According to Sanimarc Canada, gel products may save food manufacturers as much as 60 per cent in chemicals, 50 per cent water usage, and 40 per cent in labour costs. The gels also provide the advantage over spray foams in surface contact. Some are rated for up to 20 minutes of contact, which means less scrubbing and faster and more thorough rinsing. Because gels can stay on surfaces, it can also get into hard to reach cracks and crevices, allowing for a cleaner and more biologically sanitary food processing surface and worker station.

### Considering uniforms and protective gear

Even the uniforms or safety equipment worn by workers can provide a level of food safety and cleanliness. It is important that food processing companies are knowledgeable about all aspects of how the garments are laundered. For instance, water temperature, types of soaps used, drying, and what sort of materials are used in their manufacture — and if they have any sort of treatments (flame retardant) applied before being sent new to the company.

### Machine made options

Other, more mechanical options for cleaning and sanitizing food processing stations and equipment include steam cleaning units, portable misting units, and automated cleaning systems which create super-oxidized, pH neutral water which is then sprayed across equipment. This is useful in plants processing poultry and other meat. It can quickly get rid of biofilms, fats, and proteins. It also helps to reduce water waste — both in the cleaning of food stations as well as in the treatment of the wastewater produced after cleaning.

### Testing work surfaces

Testing work surfaces for sanitation and ensuring they meet food safety standards is easier than ever. Simple-to-use kits ensure that water used is free from products and contaminants (peracetic acid, QAC/Cationic) which are not food safe. Other tests that are more traditional include metal detectors and optical camera software to detect contaminants in small amounts throughout the production line. Food pathogen and allergen tests are also available to ensure that a food product is safe for every consumer who chooses to eat it. ●



# 80

YEAR

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**CONGRATULATIONS** *and* **THANK YOU!**

NSF International congratulates Food in Canada for 80 years of providing information about the Canadian food industry.

As food safety and quality experts, NSF recognizes the value that Food in Canada has brought to the industry over the years.

Thank you for your commitment to bringing prominence to Canada and the food business that supports the Canadian economy.



[www.nsfcanada.ca](http://www.nsfcanada.ca)

# RESEARCH CHEFS IN CANADA



## News > file



### Candy bar targets cannabis-inspired munchies

With cannabis set to become legal in Canada in October 2018, the makers of the OH HENRY! candy bar have launched speciality packaging to usher in the new era.

The play on the 4:20 code term for cannabis consumption among the drug's fan base, OH HENRY 4:25 is specially formulated to satisfy the intense hunger that occurs five minutes after 4:20, says senior marketing director Jackson Hitchon.

"The OH HENRY! 4:25 bar is a true testament of our dedication to not only meeting our consumers' hunger needs, but also to provide creative and innovative products," he said.

"We as Canadians are experiencing a unique and historic cultural moment with the recent legalization of cannabis and OH HENRY! wants to be part of this moment."

OH HENRY! 4:25 is available while supplies last.

### Cracking the code for MSG-free salad dressing

A company based in Israel has found a way to make the iconic ranch-style salad dressing without using monosodium glutamate (MSG).

Mediterranean Umami, an all-natural ingredient made from vegetable extracts and seas salt, retains the ranch-style dressing flavour without the MSG and while reducing sodium at the same time, said David Hart, business unit director for Salt of the Earth Ltd. in a release.

"We worked intensively to crack the code of MSG's unique flavour contribution to traditional Ranch dressing formulations," Hart said.

Salt of the Earth completed multiple trials of Ranch dressing formulations with and without Mediterranean Umami. These trials effectively demonstrated the ability to maintain the true flavour of Ranch dressing, but with 30 per cent less sodium, and without using MSG or yeast extracts.



Mediterranean Umami is similar to MSG in its ability to boost taste, but MSG is avoided by some consumers, he said.

"Chinese restaurant syndrome" is a term coined in the 1960s referring to a group of symptoms some say they experience after eating foods made with MSG, a common ingredient in Chinese cooking. Today, it's known as MSG Symptom Complex. These symptoms often include headache, skin flushing and sweating.

Hart said Mediterranean Umami offers an alternative. "Being a completely natural combination of vegetable extracts and sea salt, Mediterranean Umami does not trigger side-effects and is a clean-label product evoking no negative consumer reactions," he said.

### Replacing starchy side dishes with lentils

Replacing potatoes or rice with pulses can lower your blood glucose levels by more than 20 per cent, according to a first-ever University of Guelph study.

Researchers with the Department of Human Health and Nutritional Sciences and Agriculture and Agri-Food found that swapping out half of a portion of these starchy side dishes for lentils significantly improves the body's response to the carbohydrates.

"Pulses are extremely nutrient-dense foods that have the potential to reduce chronic diseases associated with mismanaged glucose levels," said lead researcher Alison Duncan.

Yet very few Canadians eat lentils, she added. "Canada has a huge production of lentils, but we export most of it and only 13 per cent of Canadians eat them on any given day," said Duncan. "We are hoping this research will make people more aware of the health benefits of eating pulses."

Pulses, such as lentils, can slow digestion and the release of sugars found in starch into the bloodstream, ultimately reducing blood glucose levels.



Dan Ramdath of Agriculture and Agri-Food Canada, U of G PhD student Dita Moravek and U of G Prof. Alison Duncan

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## Increase sales with exemplary customer service

*Birgit Blain*



**W**hen consumers take the time to complain about your product, thank them!

Why? It creates countless opportunities for your business. Here are some examples:

You have a chance to retain a customer. Acquiring new customers costs significantly more than holding on to existing ones.

Identifying potential food safety and quality issues before they escalate can mitigate risks of product recalls.

It provides a potential gold mine of information and valuable insights about consumers.

Leverage it to promote your brand by expanding your customer database. But be sure to get the customers' permission, to comply with anti-spam legislation. Then keep in touch by sending relevant content that your customers value.

When consumers ask, "Where can I buy your product?" it identifies market gaps and distribution issues.

### Putting brands to the test

When I have a product quality complaint, apart from not liking the flavour, I contact the company. My hope is that the problem will be fixed, renewing my trust in the brand. My ulterior motive is to test how brands respond.

I contacted three brands with a complaint and received the following responses:

Brand A sent a polite letter acknowledging there was a problem and

their intent to correct it, with estimated timing. That was exactly what I wanted to hear. I also received several coupons for free product. That's what I call exemplary customer service. I spread the word about my positive experience and continue to be loyal to the brand.

Brand B replied that a package I purchased with half its contents missing "should in no way affect its net weight." They basically rebuffed my complaint, but offered a coupon for the same product. Fearing the same issue may occur with my next purchase, I lost trust in the brand and haven't bought their product since.

Brand C responded with total silence. Needless to say, I won't be buying their product again.

### 10 secrets to exemplary customer service

1. Prepare policies and procedures for responding to inquiries and investigating complaints.
2. Make it easy for customers to contact you through various means and have a live person answer the phone.
3. Respond with a sense of urgency. These days everyone expects instant gratification.
4. Consult quality assurance to get the facts straight and seek advice from a lawyer for personal injury complaints.
5. Draft carefully worded form letters for a variety of queries. How will you respond to quality complaints and questions about food safety, ingredients, claims, promotions,

donations, social missions, environmental sustainability and product availability? Responses should have a positive and sincere tone and be customized for every situation. Also ensure that brand messaging is consistent with the brand strategy.

6. Today's consumers expect total transparency and ask probing questions about their food. Be prepared to answer those questions by developing a library of nonproprietary product information that is shareable.
7. Listen carefully to what the customer is saying and reply accordingly.
8. Manage customer expectations through clear communication.
9. Whatever you call it — customer care or consumer relations — ensure employees are trained to deal with the public diplomatically in difficult circumstances. A misstep, particularly in social media, can cause an explosive situation.
10. Find a way to reimburse customers for poor product performance.

In the end, the secret to exemplary customer service is simple. Next time you receive a complaint, put yourself in the customer's shoes. How would you expect to be treated? 🍓

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As a packaged foods specialist, Birgit Blain transforms food into retail-ready products. Her experience includes 17 years with Loblaw Brands and President's Choice. Contact her at [Birgit@BBandAssoc.com](mailto:birgit@BBandAssoc.com) or learn more at [www.BBAndAssoc.com](http://www.BBAndAssoc.com)



# You've Come a Long Way, Packaging

*Carol Zweep*

In the early part of the 1900s, food items were sold loose and needed weighing and wrapping. Consumers had to wait for their order. The biggest economic and social event of the time was the Great Depression (1929-1932). Prohibition was repealed in 1933 and canning of beer was soon started for the first time. By 1938, the economy was starting to improve and the rise of cheap and clean packaging solutions allowed consumers to make a purchase choice. Packaging was being used to advertise and sell the product, and to differentiate products from the competition. Self-serve grocery stores became the new way of shopping.

What was packaging like 80 years ago? Foods on store shelves were sold in glass containers, metal boxes and cans, and paperboard boxes. Advances in printing (flexography) made packaging much more colourful and expressive. Glass was starting to be molded into different shapes, such as the moulded contoured Coca Cola soda bottle. The bottle design became an integral part of the brand. The package's visual elements of shape, colour, graphics and imagery were providing an emotional connection with consumers.

New types of packaging materials were being used. Waxed paper was used as a moisture barrier to keep products such as biscuits dry. Cellophane was starting to be used as a clear protective layer wrapped over primary packaging to protect product from moisture and extend the product's shelf life. Corrugated boxes were invented to efficiently transport packaged food. Aluminum foil was being used to wrap food by hotel, restaurant and hospital kitchens.

There were no plastic packages 80 years ago. The evolution of plastics has led to innovations in materials (LDPE, HDPE, PP, PET, etc.) and in shapes (bottles, jars, pouches, squeeze tubes, etc.). Packaging in 1938 was simple and plain compared to the packaging of today with colourful eye-catching graphics with special effects and textures and features such as recloseability.

The widespread adoption of plastics created "use and throw away" behaviour. The environmental impact of packaging waste soon became apparent. Sustainable packaging became a popular issue leading to initiatives such as the 3Rs (reuse, reduce and recycle), and compostable and bio-based packaging. Now the focus is not to eliminate packaging but on a cir-

cular economy and package innovations that will decrease food waste by extending shelf life and ensure safe and efficient delivery of products to the consumer.

There was much less variety of packaged foods sold 80 years ago. Many of the food brands that existed back then are still found in grocery store today: Hellman's mayonnaise, Heinz ketchup, Campbell's soup, Coca-Cola, Carnation milk, Kellogg's Corn Flakes and Cadbury's Dairy Milk Chocolate. Some of those brands still retain iconic packaging shapes and labels in glass or metal packaging with some modern variations in plastic packaging. Throwback or vintage design evokes memories but can also tell a story of tradition and quality.

Packaging trends have followed food trends. Technologies such as the microwave led to the invention of microwaveable packaging. The desire for convenience has led to on-the-go packaging. The clean labelling trend is being translated into package designs that are simple but provide consumers with product clarity and transparency. As online shopping becomes more popular, packaging will be a vital part of protecting and delivering quality products to consumers.

In the near future, packaging will see the growth of active (anti-microbial) and intelligent packaging (track and trace, authentication and indicators of freshness), edible packaging, nanotechnology and bioplastics.

Who knows what packaging will be like 80 years from now? Will there be packaging that can speak to consumers, interact with microwaves to optimize product heating or indicate food spoilage? The only certainty the future holds is exciting changes. 🍎



Carol Zweep is senior manager, Packaging, Product Development and Compliance, for NSF International. Contact her at [czweep@nsf.org](mailto:czweep@nsf.org)

photo: [www.coca-colacompany.com](http://www.coca-colacompany.com)

## Mandatory labelling of GMOs lessens opposition

Consumers were less likely to oppose genetically engineered foods if they were subject to mandatory labelling, a University of Vermont study shows.

Researchers say the study suggests that more transparency could be key to communicating to the public about new technology, a process that has haunted the biotechnology since the first genetically modified crops went into production in the late 1990s.

The industry has shied away from labelling products made from genetically modified ingredients on the basis that they are not substantially different than ingredients produced through conventional breeding. Therefore, labelling could cause consumers unnecessary concern.

However, the lack of labelling has allowed critics of the technology to accuse developers they have something to hide.

The State of Vermont introduced mandatory labelling in 2016, which has given researchers an opportunity to monitor how consumer attitudes have shifted compared to parts of the U.S. where labelling is not mandated.

According to a release from the American Association for the Advancement of Science, researchers set out to test people's attitudes toward GE (genetically engineered) food and not the actual consumption of these foods in a real-world scenario.

Jane Kolodinsky and Jayson L. Lusk conducted phone and online surveys asking people to rank their support of GE foods on a one-to-five scale before and after mandatory labels appeared on these products as sold in Vermont, which is currently the only U.S. state to have mandated labelling of GE foods.

They sampled people from Vermont as well as from the broader U.S. during the same time period (before and after the state law was effective), resulting in a total of 7,871 observations. This data informed the researchers' multivariate analysis, which controlled for variables such as group makeup and location.

Compared to responses from the U.S. sample, the researchers discovered that mandatory labelling in Vermont resulted in a 19 per cent reduction in opposition to GE foods.

The findings are timely as the United States Department of Agriculture sought public comments by July 3, 2018 on the proposed federal ruling to require all states to label foods containing genetically modified ingredients. ●



As U.S. regulators work to develop mandatory GMO food labels, new research by University of Vermont's Jane Kolodinsky finds that consumer opposition to GMOs dropped significantly after Vermont adopted mandatory labels.

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IFT POST SHOW

**Got fibre?**

ADM/Matsutani LLC is a joint venture between Archer Daniels Midland Company, Matsutani Chemical Industry Co., Ltd., and Matsutani America, Inc. that supports worldwide sales and marketing of Fibersol, a full line of soluble dietary fibre food ingredients used in a variety of food and beverage applications as well as dietary supplements.

At the IFT 2018 event, the company highlighted its Golden Vanilla Frozen novelty ice cream featuring 120 calories and four grams of sugar per 250 gram serving.

It also showcased its caramel topping, maple brown sugar granola, mango coconut muesli and cherry almond chocolate muesli toppings.

The Fibersol was also showcased via the prebiotic/probiotic coconut caramel fermented beverage for digestive health, in dark chocolate-flavoured candy squares, Strawberry Yogurt Cranberry Citrus and Blueberry Coconut Bites, Sour Blue Raspberry Granita, and Raspberry Swirl Ice Cream.

<https://www.foodnavigator-usa.com/Suppliers/ADM-Matsutani-LLC>

**Clean label without compromise**

Kerry Inc., showcased how it can help its customers solve their clean label challenges, providing multiple solutions that provide nutritional advice such as: reducing sugars, how to deliver authentic and natural tastes; how to fortifying foods and beverages with functional benefits. The popular exhibit showcased its own Calamansi Ready-to-drink tea beverage, Lemonade Mint ProDiem (plant protein) Refresh beverage, and its PlantFare Chili Verde, among other concepts.

[www.kerry.com](http://www.kerry.com)

**Alipro-mistral ingredients Inc.**

Alipro, a leader in the development and manufacturing of custom ingredients for the food industry attended the IFT 2018

trade show as a visitor, moving through the exhibits discussing their solutions.

The Alipro team is renowned for the realization of the most challenging projects from inception in a state-of-the-art laboratory through production in a world-class manufacturing facility that enables the company to supply products to the food industry in a variety of packaging solutions that cater to all needs of the industry in a quick and cost effective manner.



Alipro is a family-business with over 20

years of commitment to quality and innovation with partnerships with international iconic brands in the bakery, cookie, dairy and confectionary segments of the food industry.

[www.alipro-mistral.com](http://www.alipro-mistral.com)

**Strong bonds**

Professional Ingredients is a manufacturer's representative for quality producers of ingredients within the food processing industry with over 20 years of experience working with large and small customers in the Canadian market. The company helps supply consistent, competitively-priced, quality products thanks to its strong relationships and keen understanding of the customer and the industry as a whole. Products provided include: fruits; fruit juice and puree; nuts and peanuts, chocolate, cocoa and coconut; and speciality products such as tea and coffee, cookies and inclusions.

[www.proingredients.com](http://www.proingredients.com)

**Wedded bliss**

Newly Weds Foods is a premier global purveyor of customized breaders, batters, seasonings, and functional ingredients catering to companies developing products for retail or food service industries.

Privately-owned, the company is a \$1-billion food ingredient company with 26 manufacturing facilities around the world, supporting customers in over 80 countries.

[www.newlywedsfoods.com](http://www.newlywedsfoods.com)

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**The grain brain**

Ardent Mills, a premier flour-milling and ingredient company showcased its growing portfolio of What's Next Grain Innovations at IFT 2018.

The industry leader showed its innovative formats: IQF cooked grains in a pourable frozen format; ready-to-eat Crisps; its Ancient and Heirloom grains including Spelt and White Sonora in flours, crisps and blends; Pulseful, a new line of pulses, including chickpeas, available whole, in flour and in blends; Sustagrain Barley available in kernels, flakes, flours, crisps and IQF; the Ardent Mills Great Plains Quinoa, grown in North America and available in whole seeds, whole grain flour, crisps, IQF and flakes; Ultragrain Whole Wheat Flour, including hard and soft varieties and organic options; mixes & blends for bakery and pizza mixes to pre-mixed/custom grain and seed blends; and organic flour and grain options including SafeGuard Flour and SafeGuard Treatment and Delivery System, a solution for flour- and grain-related food safety concerns.

[ardentmills.com](http://ardentmills.com)

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