

CANADA'S
FOOD PRICE REPORT
2019





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EXECUTIVE SUMMARY

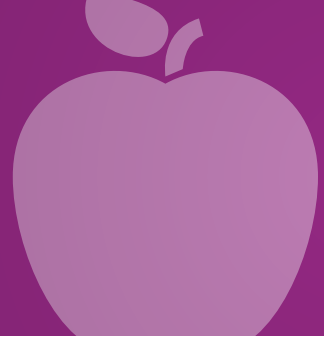
Dalhousie University and the University of Guelph present herein Canada's Food Price Report for 2019, the ninth edition of this report. In 2018, all of our major expectations were realized with the exception of one food category. This past year, the price of fruit did not increase as forecast by our models. For the other eight food categories, expected changes in prices were accurately predicted. The report contains forecasts for the following nine categories for 2019:

2019 FOOD PRICE FORECASTS

Food Categories	Anticipated Increase
Bakery	1% to 3%
Dairy	0% to 2%
Grocery	0% to 2%
Fruit	1% to 3%
Meat	-3% to -1%
Restaurants	2% to 4%
Seafood	-2% to 0%
Vegetables	4% to 6%
Total Food Categories Forecast	1.5% to 3.5%

For the first time since its inception, this report forecasts a decrease in two highly discussed categories in the food sector: **meat and seafood**. We are seeing meat prices decline while plant-based proteins are on the rise, in addition to seafood price fluctuations due to availability, quality and traceability of certain imported products. Despite the anticipated negative numbers for these two categories, overall food prices are expected to rise up to 3.5% in 2019. This represents a slight increase from last year.

This forecast means that the annual food expenditure for the average Canadian family is expected to increase by **\$411** in 2019 to around **\$12,157** for the year. The cost of vegetables will continue to be an important factor. With regard to out-of-home purchases of food, the average family will see an increase of **\$143**, a more modest increase compared to 2018.



In hindsight, 2018 brought Canada international trade uncertainty with the replacement of the **North American Free Trade Agreement (NAFTA)** by the **United States–Mexico–Canada Agreement (USMCA)**. In addition to the new trade pact, still to be ratified, a new **Congress in Washington** means ambiguity in international commerce for Canadians. Although most are breathing a sigh of relief, our unpredictable relationship with our neighbour to the south, Canada's largest trading partner, creates many questions about food sectors affected by the USMCA. At the global level, trade wars began between the US and China, affecting the entire food supply chain in Canada from the standpoint of procurement, exports and imports. As a result of tensions with the United States, new opportunities for Canada have emerged, especially in Europe and Asia, under new trade deals.

The 2018 year also saw interest rate hikes by the **Bank of Canada** to protect against economic uncertainty and inflationary pressure. Since July 2017, the central bank has raised rates four times and a fifth increase was seen in October 2018. In turn, food prices felt the impact of the rate hike in addition to inflationary increases. With **wages** stagnating, the weight of food expenses for households is at risk of continuing to increase throughout 2019. Of course, the elephant in the room during these changes was the uncertainty surrounding **NAFTA** renegotiations.¹

In terms of weather patterns, 2019 will see an end to **La Niña** cycles, with the likelihood of **El Niño** returning.² While South America and certain parts of Asia will likely receive heavier precipitation, North America might suffer from drier conditions with a chance of reduced water access. In turn, it is important to note the possible impact of El Niño on food prices for this coming year. The Intergovernmental Panel on Climate Change (IPCC) report released on October 8 of this year states that global agriculture remains highly vulnerable to severe weather patterns.

- 1 <https://www.theglobeandmail.com/business/article-bank-of-canada-will-continue-with-gradual-rate-hikes-poloz/>
- 2 Nooteboom, P., Feng, Q., López, C., Hernández-García, E., & Dijkstra, H. (2018). Using network theory and machine learning to predict El Niño. *Earth System Dynamics*, 9(3), 969–983.



Last year, our estimates on a provincial scale were successful for the most part. Surprisingly, **Saskatchewan** saw a decrease in food prices of 0.4%, and the largest province, **Ontario**, saw the highest increase of 2.7%. Here are the 2019 projections by province:

2019 PROVINCIAL BREAKDOWN – FOOD PRICES

Provinces	2018 Changes ³	2019 Forecasts ⁴
Alberta	↓	↑
British Columbia	↑	↑
Manitoba	↓	–
New Brunswick	↓	↓
Newfoundland & Labrador	↑	↓
Nova Scotia	↓	↓
Ontario	↑	↑
PEI	↓	↓
Saskatchewan	↓	↑
Quebec	↓	–

In 2019, major food trends and highlights of this increasingly complex industry include **cannabis in Canada** and its related **food products**, Canada's new **Food Guide** and the ongoing **protein wars** between existing sources and **plant-based alternatives**.

3 (↑) Expected above-average food price increase, (↓) Expected below-average food price increase, (–) Expected average food increase. Lower confidence intervals at the provincial level.

4 (↑) Expected above average food price increase, (↓) Expected below average food price increase, (–) Expected average food increase. Lower confidence intervals at the provincial level.



RETROSPECTIVE ON 2018

2018's results show that our forecasts made at the end of 2017 were accurate. Despite inaccuracies in one food category (fruit), prices for the remainder of the categories analyzed were directly in line with our projections:

TABLE 1: 2018 FOOD PRICE RESULTS

Categories	Anticipated Increase (Dec. '17)	Results (Oct. '17 to Sept. '18) ⁵
Bakery	0% to 2%	0%
Dairy	0% to 2%	0%
Food	0% to 2%	0%
Fruit	1% to 3%	0%
Meat	0% to 2%	1%
Restaurants	4% to 6%	4%
Seafood	0% to 2%	2%
Vegetables	4% to 6%	4%
Total Food Categories Forecast	1% to 3%	1.8%

Fruit prices did not increase as anticipated due to a stronger than expected Canadian dollar against the American greenback. Other categories saw prices reacting as predicted in *Canada's Food Price Report 2018*, released a year ago.

5 Estimates based on Statistics Canada figures.

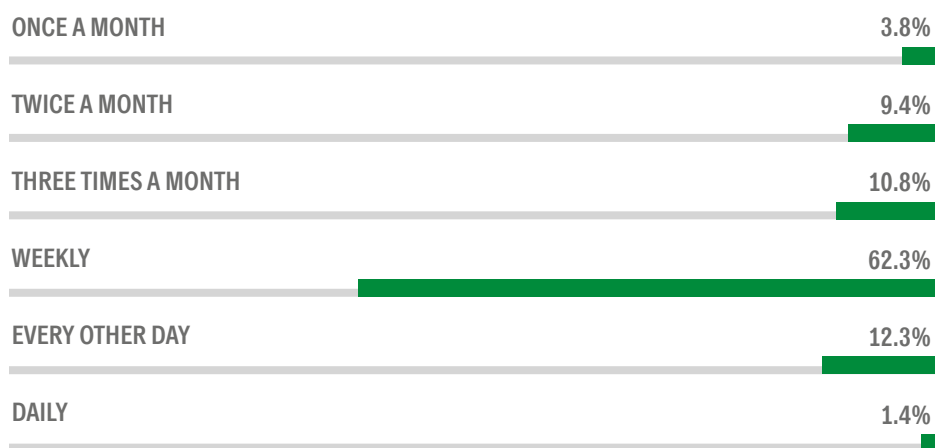


INDEPENDENT GROCERY EXPERIENCE AND DIFFERENTIATION

An online survey in **November 2018** by Dalhousie University, drawing data from Canadian urban and rural settings, looked at consumer perceptions of the grocery shopping experience. Canadian consumers appear to be visiting more food stores regularly but spending less time per visit. Survey respondents reported visiting, on average, 2.3 different grocery stores on a regular basis, and shopping 5.4 times per month, which translates to 1.29 times per week. A shift downwards from previous years, this could be an indication that consumers are gravitating to other grocery formats, such as convenience stores. In comparison, the average American visits a grocery store 1.6 times per week.⁶ Our survey also showed that the average time spent by shoppers in-store was 32 minutes; an earlier study in 2008 reported visits of 43 minutes.⁷ In 10 years, this is a significant impact on the grocers and the food industry as a whole.

“Canadian consumers appear to be gravitating to convenience and visiting more food stores regularly while spending less time per visit. And visits to the same food store are much less frequent.”

FIGURE 1: HOW OFTEN DO YOU VISIT A STORE WHERE YOU PURCHASE FOOD?

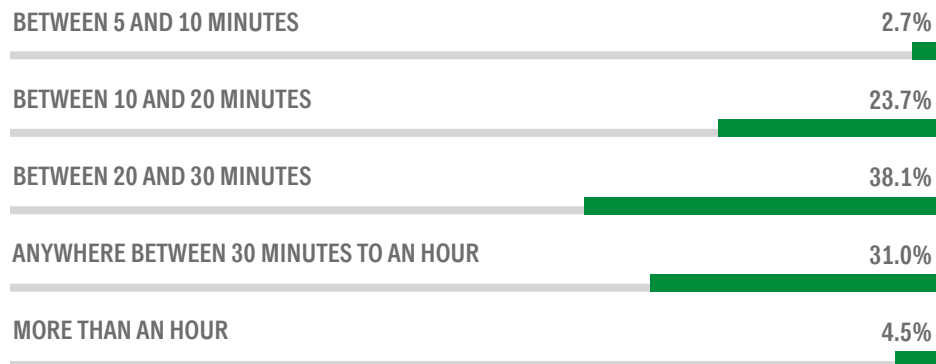


6 <https://www.statista.com/statistics/251728/weekly-number-of-us-grocery-shopping-trips-per-household/>

7 Bassett, R., Beagan, B., & Chapman, G. (2008). Grocery lists: Connecting family, household and grocery store. *British Food Journal*, 110(2), 206–217.



FIGURE 2: ON AVERAGE, HOW MUCH TIME DO YOU SPEND IN A STORE EVERY VISIT?



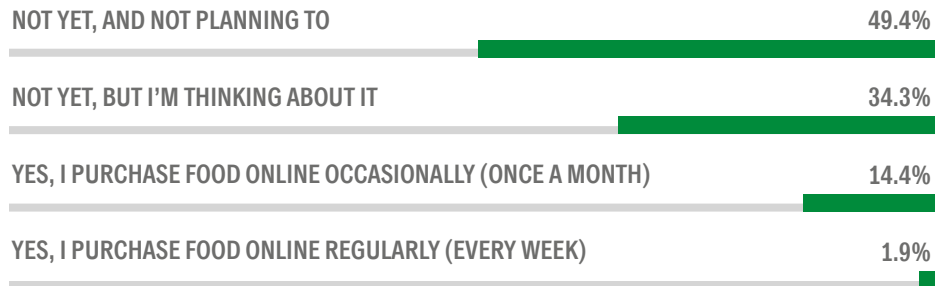
With regards to core offerings, food retailers are increasingly influenced by technological advancements in the sector. The food industry has become interested in online sales (e-commerce) if consumer demand continues to rise. The same survey by Dalhousie University found that just 1.9% of respondents bought food online on a regular basis (weekly), including both delivery and non-delivery purchases, 49.4% reported that they did not intend to buy food online, 34.3% indicated an interest in starting to buy food online. Those with technological know-how and digital confidence may be more open to using the Internet to make purchases like groceries.⁸ Those with more traditional approaches to food purchasing are likely to be less comfortable with buying food online.⁹

8 Mangiaracina, R., Perego, A., & Tumino, A. (2012). Re-designing retail stores with mobile and wireless technologies. *International Journal of Engineering Business Management*, 4(1), 1–11.

9 Liang, A. R., & Lim, W. M. (2011). Exploring the online buying behavior of specialty food shoppers. *International Journal of Hospitality Management*, 30(4), 855–865.



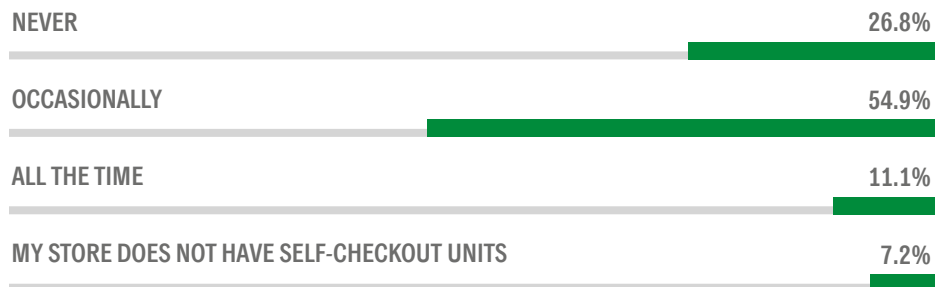
FIGURE 3: HAVE YOU PURCHASED GROCERIES ONLINE?



Alongside technological breakthroughs, we are also seeing broader implementation of innovations from the last 15 years. Online purchasing might be a “new” phenomenon allowing consumers to eat at home, but other forms of self-directed purchasing are increasing.¹⁰ Self-checkout counters are gaining popularity, especially in urban areas: 66% of survey respondents used a self-checkout at least once at a grocery location.

“E-commerce has clearly become a priority for groceries, to offset the “Amazon Effect.”

FIGURE 4: HOW OFTEN DO YOU USE SELF-CHECKOUTS WHEN GROCERY SHOPPING?



Canadians will continue to see more use of technology at the decision-making and point-of-sale stages in the food purchasing process.¹¹ For more details on the grocery experience and consumer insights, visit the *Grocery Experience National Survey Report* released in November 2018.

10 Komakech, M., & Jackson, D. (2016). A study of the role of small ethnic retail grocery stores in urban renewal in a social housing project, Toronto, Canada. *Journal of Urban Health*, 93(3), 414–424.

11 Vogel, L. (2018). Meat and dairy supporters seek industry-friendly changes to food guide. *Canadian Medical Association Journal*, 190(7), E201–E202.



PROTEIN WARS: THE RISE OF PLANT-BASED ALTERNATIVES

In another survey, released in October 2018 ahead of World Vegan Day on November 1, a collaboration between the University of Guelph and Dalhousie University investigated attitudes in Canada toward plant-based protein alternatives.¹² Preliminary findings suggest that Canadians may be less interested in meat and may be reducing meat in their diets.¹³ 20% of respondents reported food restrictions and those in Ontario appeared to be most likely to report dietary requirements. In 2018, many local butchers closed their doors due to lack of demand, and this trend is expected to continue in 2019.¹⁴ Animal protein suppliers will need to respond, and we are likely to see a shift towards plant-based protein alternatives. As a palpable example of this shake-up, **Beyond Meat**, a US-based alternative protein company known for its **meatless burger**, is now distributing to over **25,000 restaurants worldwide**.¹⁵ Other notable North American companies gaining traction in this area include **Sol Cuisine**, **Impossible Foods**, **Zoglo's** and the attention-grabbing **Memphis Meats** producing cell-based meats.¹⁶

The same survey found that 32.2% of respondents were considering reducing meat consumption, to a certain degree, within the next 6 months. This aligns with the growth in interest in plant-based diets seen in other parts of the world. With time, plant-based and new meat companies will surely tap into the growth of this consumer preference. Younger consumers are more informed than ever before about **health**, **animal welfare** and the **environment**.



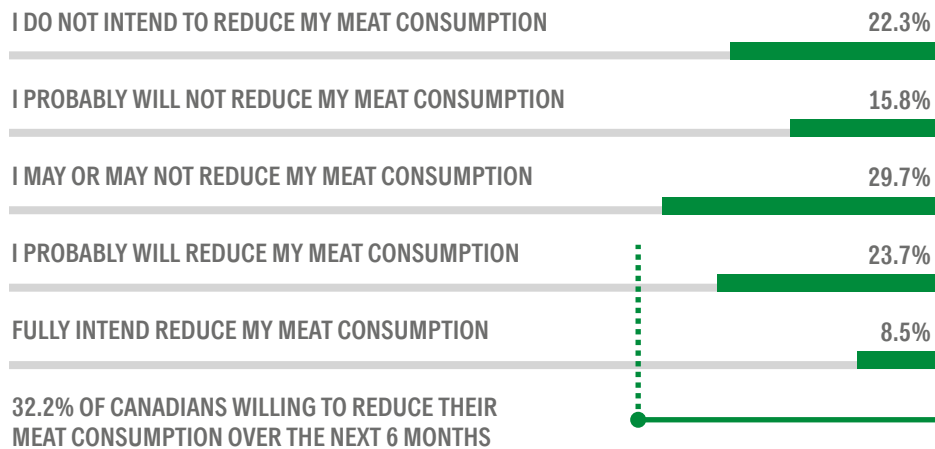
By 2050, there will be more than 10 billion people on the planet, and while people will still be eating animal protein, plant-based proteins that are more sustainably produced are a promising alternative.



- 12 https://www.dal.ca/faculty/management/news-events/news/2018/10/30/release_new_dalhousie_study_finds_that_6_4_million_canadians_limit_the_amount_of_meat_they_eat_and_number_will_likely_grow.html
- 13 Binnie, M. (2016). Is there a role for meat in a plant-based diet? *Journal of Animal Science*, 94(Suppl_5), 438.
- 14 Butcher closing in on points crown. (2018). *Chronicle-Herald*, p. CapeBreton_C1
- 15 <https://www.livekindly.co/beyond-meat-europe-reaction-overwhelming/>
- 16 Best, D. (2017). Meat-free firm Impossible Foods eyes restaurants with new plant. *Just-Food Global News*, March 23.



FIGURE 5: IN THE NEXT 6 MONTHS DO YOU INTEND TO REDUCE YOUR MEAT CONSUMPTION?



BREAD PRICE-FIXING SCANDAL

2018 started off badly with a price-fixing scandal involving **Loblaw Companies Ltd.** and **Weston Bakeries** with bread prices. As a result, Canadians were offered a \$25 gift card from Loblaws to make up for the 14-year price scheme, covering 2001 to 2015.¹⁷ At the time of writing, two other industry participants were added to the scandal's mix. Along with Loblaw Companies Ltd., **Sobeys, Walmart, Giant Tiger** and **Metro** were ultimately accused by Loblaw Companies Ltd, who stated that they were a part of an organized scheme. Developments are ongoing, and this could be the start of other scandals unfolding in the future in other food categories in Canada. Surprisingly, the price of bread on average in Canada has declined by 1.8% in 2018 since news broke.



Initially, we saw consumer outrage which has since dissipated, but now the tension within the industry is painfully obvious.



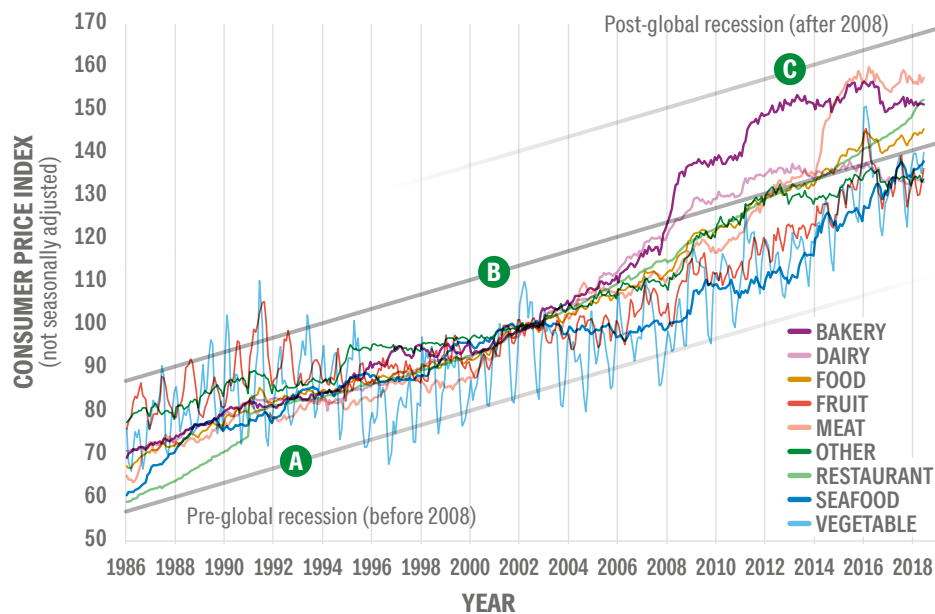
17 Sagan, A. (2017). How to register to receive \$25 Loblaw card after bread price-fixing arrangement admission. The Canadian Press, Dec 19.



FOOD PRICES SINCE 1986 AND THE NEW NORMAL

It is much more challenging to predict food prices now, and the graph below shows how volatile food prices have become since the **financial crisis of 2008**. Normally, prices would fall between the A and B lines. After 2008, **bakery** and **dairy** broke through the B line to reach levels above normal inflationary patterns. Given what we know now about bread prices, the bakery line raises questions, particularly for 2015, the year **Loblaws** and **Weston Bakeries** disclosed the scheme to the **Competition Bureau**.

FIGURE 6: FOOD PRICES SINCE 1986



Other food categories have since passed the B line. **Meat** crossed it in 2012, but increased further in 2014, which may have enticed consumers to reduce their meat consumption. Restaurants, which in 1986 were in the most affordable food category, are now in of the most expensive categories. The cost of **convenience**?



CANNABIS LEGALIZATION: A NEW BEGINNING

After years of speculation, market volatility, investor excitement (and resistance), public health dialogues and public safety discussions, cannabis is now legal in Canada.¹⁸ Despite the progressive push by the Government of Canada to legalize non-medicinal cannabis, there are still many elements of the regulatory plan in flux. For edible products derived from cannabis, the floodgates have yet to open. Within the next 12 months, edibles will be allowed—a new beginning for the agri-food sector in Canada.

The food industry by nature is often one of the slowest movers when it comes to product development, innovation or adoption. The legalization of recreational-use cannabis in Canada offers the industry a chance to develop an untapped market. Enthusiasm appears highest within the beverage arena. Both alcoholic and non-alcoholic beverage companies have shown significant interest in cannabis-infused drinks.¹⁹ Larger multinationals, such as **Coca-Cola**, **Heineken**, **Molson-Coors** and **Constellation Brands**, are looking at the cannabis potential as beer and soda sales continue to fall in markets where cannabis is either tolerated or legal.²⁰ In the Canadian context, **Canopy Growth Corp.**, **Aphria**, **Hydrophocary Corp.**, and **Aurora Cannabis** are positioning themselves to be leading licenced producers (LPs) and enter the dynamic beverage industry. A growing trend of cannabis-infused beverages shows that short-term market winners may be cannabis companies and artisan economy contributors like craft breweries and cideries. Prices for these categories will be more accurately predicted in 2019. Next year will be a critical one for Health Canada as it tackles the edibles market.²¹

18 Bewley-Taylor, D. (2018). Canada, cannabis legalization and uncertainty around the United Nations drug control conventions. *Addiction*, 113(7), 1226–1228.

19 Elrod, M. (2017). Cannabis prohibition harms Canada's youth. *Canadian Medical Association Journal = Journal de l'Association Medicale Canadienne*, 189(29), E970.

20 <https://www.potnetwork.com/news/these-are-top-5-beverage-companies-investing-cannabis>

21 Charlebois, S., Somogyi, S., & Sterling, B. (2018). Cannabis-infused food and Canadian consumers' willingness to consider "recreational" cannabis as a food ingredient. *Trends in Food Science & Technology*, 74, 112.



CORPORATE TRANSACTIONS IN THE FOOD ARENA FOR 2018

2018 was a mediocre year for corporate transactions in the food industry. In 2017, we saw technology giant **Amazon** acquire **Whole Foods** for \$13.7 billion, which was a strong move to gain exposure to another sector and own its digital strategy.²² As usual, Amazon looks to disrupt brick-and-mortar commerce with superior technology, and Whole Foods was able to offer them the platform to do so within the grocery category. In addition, at the grocery store level, we saw deceleration of new store growth and the acceleration of technology acquisition to refine operational excellence. This year, **Walmart** bought Indian e-commerce company **Flipkart**, **Target** acquired **Shipt**, **Kroger** invested in **Ocado** and purchased meal-kit company **Home Chef**, and **Albertsons** bought meal-kit company **Plated**.²³

The biggest transaction in Canada in 2018 was the acquisition of Ottawa-based **Farm Boy** by **Sobeys** for \$800 million.²⁴ Farm Boy started as a small independent grocer and was extremely successful in the Ottawa Valley area before expanding to new markets. Under the Sobeys umbrella, the grocer will likely continue to expand in the lucrative Ontario market. In Quebec, large pork producer **Olymel** is in the process of acquiring **F. Ménard** for \$1 billion, with the transaction pending as both sides try to come to an agreement. Large player **Parmalat** is set to acquire **Kraft Heinz Canada**'s natural cheese division to further the trend of consolidation in the industry.²⁵ It is estimated that this transaction is likely an offshoot of the new **United States–Mexico–Canada Agreement (USMCA)**.



Common to the industry, consolidation is a given. Future progression lies in innovation and harnessing the digital playbook other industries have quickly figured out.

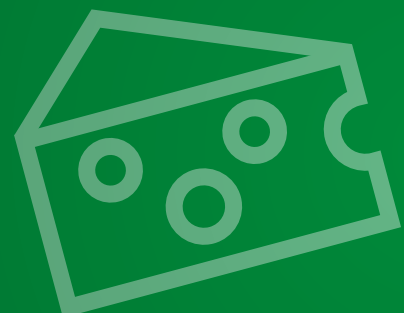


22 <https://www.cnn.com/2018/06/15/a-year-after-amazon-announced-whole-foods-deal-heres-where-we-stand.html>

23 <https://www.forbes.com/sites/brittainladd/2018/07/29/the-next-big-thing-in-food-and-grocery-retail-on-demand-hot-cooked-food/>

24 <https://ottawacitizen.com/business/local-business/farm-boy-stores-to-be-sold-to-owner-of-sobeys-grocery-chain>

25 <http://www.canadiangrocer.com/top-stories/headlines/parmalat-to-acquire-kraft-heinz-canadas-natural-cheese-division-83982>



NO MORE NAFTA: WELCOME USMCA

The Government of Canada announced a new trade deal with the United States and Mexico to replace the **North American Free Trade Agreement (NAFTA)**. The **United States–Mexico–Canada Agreement (USMCA)** will reinforce the strong economic ties between the three nations. It maintains the tariff-free market access from NAFTA and includes updates and new chapters to address modern trade challenges for Canada.²⁶ Despite **Section 232** regarding tariff implementation in the auto sector, the agricultural sector will see doors open for **American dairy, egg and poultry farmers** worth about **3.6%** of the total current Canadian market.²⁷ While we see much attention being paid to Canada's dairy sector, all five supply-managed agricultural sectors will suffer setbacks due to the USMCA.



Once again, one of the most established industries in Canada, part of the backbone of our economy, will likely see unfavourable outcomes from an international trade agreement.



- 26 <http://international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/usmca-aeumc/summary-sommaire.aspx?lang=eng>
27 <https://www.cbc.ca/news/politics/usmca-nafta-what-we-know-1.4845103>



CANADA'S NEW FOOD GUIDE

The new Food Guide arrives at a time of changing consumer preferences in Canada. We are seeing greater diversity in our food supply than ever before, alongside significant shifts in consumption, perception and production processes driven by consumer demands. Meat consumption is on the decline; in the case of beef, Canadians annually consume approximately **94 million kilograms less per year, compared to 2010**. The revised Canada's Food Guide, expected in 2019, will be key to how Health Canada addresses these changes in consumption patterns. If the principles outlined by Health Canada in 2018 still hold true, the new Guide will likely prioritize consumption of plant-based foods.²⁸ It is unlikely that the agency will exclude animal-based proteins altogether, given the tension amongst interest groups within the agricultural sector. Livestock and dairy producers will likely challenge the messages being sent to Canadians about dietary choices in 2019 and future years. The rate of change at the consumer level and agility of the vegetarian and vegan movement, however, is likely to drive the new cycle and its influence on our society. Across the country, households will pinpoint what to eliminate from their diets faster than we imagine.²⁹



The next Food Guide will be a catalyst for blending modern food choices with nutritional staples Canadians are used to.



28 Colin MacLeod, Health Naturally. (2017). Canada's Food Guide changes; Health Canada is set to update its recommendations for healthy eating, so make sure you're ready. *Chronicle-Herald*, p. V10.

29 Anderson, L. C., Mah, C. L., & Sellen, D. W. (2015). Eating well with Canada's food guide? Authoritative knowledge about food and health among newcomer mothers. *Appetite*, 91, 357–365.



CANADA'S FOOD PRICE REPORT 2019 FORECAST

METHODOLOGY

For this year, Canada's Food Price Report employed predictive analytics models using machine learning to support decisions around the future of food prices. As it enters its **ninth year of publication**, the report studies food prices in Canada while giving insight into industry trends. For the second time, the report is a collaboration by **Dalhousie University** and the **University of Guelph**. As a leader in the computer science field, Dalhousie University's predictive analytics capabilities and automation expertise were used to build the forecasts. The University of Guelph, known for its research capacity in the agri-food sector, contributed to the analysis of prices generated from the automation processes.

Using machine learning principles, the design applied six algorithms to the major food categories of Canada's Consumer Price Index (CPI). Each food category is forecast 18 steps into the future and the Mean Absolute Error (MAE) is calculated in addition to the Mean Absolute Percentage Error (MAPE), with both maintaining a 95% confidence level. The algorithms used include Stacking and Vote (Ensemble Algorithms), Linear Regression (Multivariate Linear Regression), Multilayer Perceptron (Neural Network), SMOreg (Support Vector Machine), M5P (Decision Tree) and M5Rules (Decision Rule).³⁰

30 For a detailed study methodology, please refer to "Canada's Food Price Report 2019: Supplemental Report".



2019 MACRO-ECONOMIC FACTORS AND DRIVERS

The conclusion from the latest report by the Intergovernmental Panel on Climate Change (IPCC) was dire, and climate change will continue to be a significant and difficult-to-predict influence on food prices for 2019. Although next year marks the end of **La Niña**, the return of **El Niño** is expected.³¹ While we are expecting heavy rainfall in regions of South America and Southern Asia, North America will likely see issues with accessing water. As seen in the past, most recently in 2015–2016, El Niño will likely place pressure on certain food prices for 2019, although weather patterns are becoming increasingly unpredictable. The IPCC has also made it clear that global agriculture remains highly vulnerable. The report released on October 8 of this year suggested that by 2030 the world would have to reduce its carbon emissions by at least 49% from 2017 levels and achieve carbon neutrality by 2050 to meet targets. The IPCC believes agriculture should play its part.³²

Macro-level drivers of climate change and geopolitical instability will place substantial pressure on Canada for 2019. New trade deals with Europe (CETA) and the United States and Mexico (USMCA) will result in variable effects on price. With the signing of the USMCA, the infamous **Class 7** will be brought to an end. As part of the overall agreement, Canada agrees to ensure the elimination of current milk Classes 6 and 7. This refers to the domestic pricing class that oversees milk ingredients such as skim milk powder and milk proteins used in yoghurts, cheese and other prominent dairy products.³³ Furthermore, products included in Class 7 will now be set to US prices. Before this, the class used the world price as a reference, a practice with which American producers strongly disagreed. For Canadian dairy producers, the elimination of Class 7 represents potential revenue losses of up to 30%. After the signing of the agreement, Canadian officials announced that producers would receive compensation.³⁴

31 <https://www.cbc.ca/news/technology/el-nino-2018-noaa-prediction-1.4768316>

32 Tollefson, J. (2018). Clock ticking on climate action. *Nature*, 562(7726), 172–173.

33 <https://ipolitics.ca/2018/10/01/new-trade-deal-opens-up-canadas-dairy-market-kills-class-7/>

34 <http://international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/usmca-aeumc/agri.aspx?lang=eng>

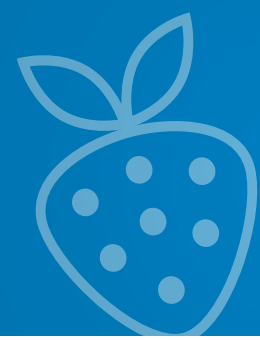


TABLE 2: MACRO-LEVEL DRIVERS FOR CANADIAN FOOD PRICES IN 2019

Variables	Categories	Impact	Price Effects	Likelihood
Macro-level	Climate Change	Significant	Variable	Likely
	Geopolitical Risks	Very Significant	Variable	Very Likely
	Input Costs	Significant	Increase	Likely
	Energy Costs	Moderate	Negligible	Likely
	Inflation	Significant	Increase	Very Likely
	Currencies and Trade Environment	Significant	Variable	Very Likely
Sectoral-level	Food Retail and Distribution Landscape	Very Significant	Downward	Likely
	Food Processing Industry	Significant	Increase	Very Likely
	Policy Context	Very Significant	Downward	Very Unlikely
	Consumer Food Awareness and Trends	Significant	Downward	Very Likely
Domestic-level	Consumer Debt and Deleveraging	Significant	Downward	Very Likely
	Consumer Income and Income Distribution	Significant	Downward	Very Likely



Inflation is another important economic indicator for 2019 in Canada.³⁵ The US economy is functioning on all cylinders despite the International Monetary Fund downgrading its global growth forecasts, citing trade tensions between the US and its key trading partners.³⁶ In 2019, it is estimated that the **Bank of Canada** (BoC) will keep its rate steady to maintain the value of the Canadian dollar. The BoC seems to be on a trajectory that will allow Canada to better value money, whereas in the past we saw costs of capital and borrowing at almost zero. In 16 months, the BoC has increased its rate five times despite strong signals of a healthy economy. However, Canada added 62,000 net new jobs in 2018, which was one of the worst performances since the economic meltdown of 2008.³⁷ **Wages** have increased minimally, around 1.9% since 2017, 0.1% more than total inflation.³⁸ Wage stagnation means that consumers will likely be under financial pressure with rising costs.



After months of high-pressure negotiation and speculation, the Government of Canada remains cautious with Washington. But, was it enough for our agri-food sector?



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- 35 Lee, U. (2018). Predictive performance of alternative inflation forecasting models: New international evidence. *Journal of Applied Business and Economics*, 20(6), 161–177.
- 36 <https://www.cnn.com/2018/10/09/world-economic-outlook-imf-cuts-global-growth-forecasts-on-trade-fight.html>
- 37 <https://www.bnnbloomberg.ca/canada-unexpectedly-adds-11-200-jobs-in-october-1.1162370>
- 38 Wagner, J. (2018). Downward nominal wage rigidity in Canada: Evidence against a “greasing effect”. *Canadian Journal of Economics/Revue Canadienne D’économique*, 51(3), 1003–1028.



VEGETABLES: THE 2019 WATCH-LIST ITEM

Overall, food prices could increase as much as 3.5% in 2019. Vegetables will be the category undergoing the greatest price increase. For the first time in this report's history, meat and seafood will decrease in price, driven by new market entrants and a forecasted decline in demand from savvy consumers. Indeed, we strongly believe that meat prices will continue to spiral downwards until 2020 as we see an increase in the number of consumers reducing or eliminating meat consumption.

TABLE 3: 2019 FOOD PRICE FORECASTS

Food Categories	Anticipated Increase
Bakery	1% to 3%
Dairy	0% to 2%
Grocery	0% to 2%
Fruit	1% to 3%
Meat	-3% to -1%
Restaurants	2% to 4%
Seafood	-2% to 0%
Vegetables	4% to 6%
Total Food Categories Forecast	1.5% to 3.5%

For the average family, and based on a healthy food cart, annual expenditures on food are expected to rise by **\$411** to total \$12,157 in 2019. As mentioned throughout this report, the rise in vegetable prices is likely one of the main drivers of this increase. We also anticipate out-of-home purchases of food will rise by **\$143** this year.



In 2018, our provincial forecasts held true for the most part. Surprisingly, **Ontario** saw the greatest increase in prices—**2.7%**. Comparatively, **Saskatchewan** saw a drop in prices of **0.4%**. 2019 price projections are shown below for each province. Our predictive analytics techniques also allowed us to evaluate increases in prices for the following year.³⁹

TABLE 4: 2019 PROVINCIAL BREAKDOWN – FOOD PRICES

Provinces	2018 Changes ⁴⁰	2019 Forecasts ⁴¹
Alberta	↓	↑
British Columbia	↑	↑
Manitoba	↓	–
New Brunswick	↓	↓
Newfoundland & Labrador	↑	↓
Nova Scotia	↓	↓
Ontario	↑	↑
PEI	↓	↓
Saskatchewan	↓	↑
Quebec	↓	–

39 Please consult our supplemental document for data beyond 2019.

40 (↑) Expected above-average food price increase, (↓) Expected below-average food price increase, (–) Expected average food increase. Lower confidence intervals at the provincial level.

41 (↑) Expected above average food price increase, (↓) Expected below average food price increase, (–) Expected average food increase. Lower confidence intervals at the provincial level.



MAJOR FOOD TRENDS AND INDUSTRY OBSERVATIONS FOR 2019

Highlighting the Canadian food continuum's outlook for 2019 includes the highly anticipated **cannabis legalization** for recreational use and its food-related products, **Canada's new Food Guide** and the ongoing push towards plant-based diets, or what we term the **protein wars**.

CANNABIS LEGALIZATION AND RELATED EDIBLE PRODUCTS

Canada made history when it legalized marijuana for recreational use in October 2018, becoming only the second country in the world to do so. Bill C-45 did not include edible products infused with cannabis when the regulatory process started.⁴² Recognizing the gap, Federal officials announced that cannabis-infused edible products would be released to the marketplace later in 2019, raising the possibility of public health risks.

The federal government placed responsibility on the provinces for establishing regulations to control cannabis sales and consumption. As an example of the magnitude of challenges associated with cannabis edibles, the State of Colorado saw an influx of cannabis products in the edibles category.⁴³ Products were launched with questionable oversight in a wide range of lines; muffins, brownies, cooking oils, butter, candies and even beverages, all infused with cannabis, became available. The big question in this realm is going to be product transparency, including sourcing of cannabis, dosage information, allergy descriptions and warnings, and efficient labelling on products. As seen in Colorado, tetrahydrocannabinol (THC) levels will need to be indicated on products, similar to the labelling requirements for the alcoholic beverage industry.

42 Gomez, L., & Martins, M. (2018). Eat your cannabis and have it too: Edibles will present unique regulatory challenges. *Food in Canada*, 79(5), 14.

43 MacCoun, R. J., & Mello, M. M. (2015). Half-baked — the retail promotion of marijuana edibles. *New England Journal of Medicine*, 372(11), 989–991.



Cannabis is an entirely new category for the agri-food sector and driving growth in all levels of the value chain. The real winners will be those that develop consumer trust and confidence through transparency, product quality and ultimately brand loyalty.





In Canada, we need to face the facts: edible products will become mainstream. That being said, this could also send a strong signal to public health officials that Canadians prefer ingesting cannabis rather than inhaling smoke derived from burning the product.

In a Deloitte study from 2018, it was suggested edible cannabis products could become a \$5 billion industry in Canada within the next 5 years.⁴⁴ As we see an agri-food industry hitting bottom when it comes to margin expansion and profitability in Canada, cannabis represents a lifeline for some producers struggling to survive. Even more significant, the arrival of cannabis has caught the attention of greenhouse operators facing capital-intensiveness issues and looking for diversification.⁴⁵ As a result, some other sectors are seeing cannabis as a major threat. Many small to mid-sized wineries and breweries are also capitalizing on the concept of developing cannabis-infused beverages (both alcoholic and non-alcoholic).⁴⁶

Once legalized, edible cannabis products will likely become mainstream. A study at Dalhousie University demonstrated that 68% of Canadians were in favour of cannabis legalization.⁴⁷ Within this group of supporters, 93% were willing to try at least one product in the edible category. Considering the Canadian population from the standpoint of age, many fit the profile of those willing to adopt the idea of ingestion of cannabis products rather than inhalation. As well, the Public Health Agency of Canada has recommended ingestion of cannabis as a method of consumption.

One of the biggest issues that regulators will face in 2019 is the establishment of proper tax and pricing schemes for recreational marijuana products. Initially, the idea behind legalization was eliminating the black market, but early reports suggest otherwise.⁴⁸



As industry starts to get excited about the future output of cannabis in the market, regulators need to keep public safety and health as key priorities.



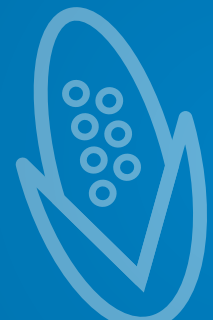
44 Harris, R. (2018). The new “baked” goods. *Food in Canada*, 78(1), 18.

45 <https://www.theglobeandmail.com/report-on-business/small-business/sb-growth/vegetable-growers-convert-to-cannabis-to-help-boost-margins/article37677955/>

46 <https://www.theguardian.com/world/2018/jul/22/it-hits-you-very-quickly-canada-brews-first-cannabis-beer>

47 https://www.dal.ca/faculty/management/news-events/news/2017/09/26/dalhousie_releases_study_on_canadians__attitudes_towards_cannabis_infused_food.html

48 Hajizadeh, M. (2016). Legalizing and regulating marijuana in Canada: Review of potential economic, social, and health impacts. *International Journal of Health Policy and Management*, 5(8), 453.



CANADA'S FOOD GUIDE

In Canada, the average individual likely does not refer to the Food Guide on a daily basis.⁴⁹ Its reach comes through institutions such as public health units, hospitals, schools and retirement homes, and it reflects a science-based approach to optimizing dietary choices for a population's health benefits.⁵⁰ Even if the average Canadian is unfamiliar with the details of the Guide, it has a critical influence on both the agri-food and health sectors in Canada.

Influencing the public is one thing. For food producers, the Guide has been the target of frequent criticism. A major challenge has been the need to adapt dietary recommendations to contemporary approaches to food consumption and production, along with the best available science on foods with a positive impact on human health.

The Government of Canada issued its first Food Guide in 1942. Its focus, in the wake of the Great Depression and during World War II, was the elimination of malnutrition and food insecurity. Fast forward to today, when consumers expect diverse choices and globalization has transformed food availability—consumers have completely different expectations when it comes to food selection and how they might choose foods for health.

The lengthy time period between each Food Guide revision has resulted in criticism from health and food industry experts alike. With constant changes in consumer demand—for example, the rapid evolution of interest in plant-based diets—more frequent amendments may be needed to meet health goals for Canadians.

As a policy process, many individuals and groups inform the production of Canada's Food Guide. Food industry influence has been a constant. Since its inception, the Food Guide has been seen to promote Canadian agricultural

49 Andresen, M. (2007). Mixed reviews for Canada's new food guide. *Canadian Medical Association Journal/ Journal de l'Association Médicale Canadienne*, 176(6), 752.

50 Jessri, M., & L'Abbe, M. (2015). The time for an updated Canadian Food Guide has arrived. *Applied Physiology, Nutrition, and Metabolism*, 40(8), 854–857.



products. The latest Guide represents a marked change. For the first time, industry representatives were required to submit their recommendations through the same public channels as any other individual or group providing public input.

Nutrition science is the foundation of the Food Guide, but it will be released into an increasingly complex and consolidated agri-food sector that still struggles to innovate and keep up with evolving consumer demand.

In the end, the new Food Guide might be less about what and more about how: how consumers can have a nutritious diet in an era where the constraints on healthy food choices—affordability, social aspects, time and where we buy food—are increasingly tight.⁵¹

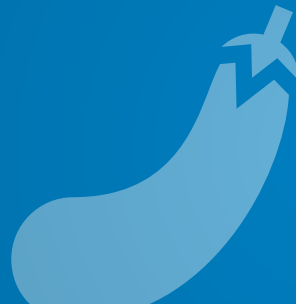
2019 can be a breakthrough year for Canada's Food Guide. Let's hope we get it right at all levels of policy-making.



Eating healthy is not only about what, but how. We need to start including intangibles, such as affordability, time, social aspects, ambiance and convenience.



51 Lafrenière, J., Laramée, C., Robitaille, J., Lamarche, B., & Lemieux, S. (2018). Relative validity of a web-based, self-administered, 24-h dietary recall to evaluate adherence to Canadian dietary guidelines. *Nutrition*, 57, 252–256.



AVOIDANCE OF MEAT AND A PUSH TOWARDS PLANT-BASED ALTERNATIVES

The global supply landscape for meat protein is evolving.⁵² In Canada, recent numbers show a decline in demand from consumers for meat products. Over the last few years, we've seen an overwhelming interest in alternatives to meat and dairy, shifting the focus towards vegetarian and vegan eating patterns. Key items such as seafood, quinoa, pulse crops (chickpeas, lentils, beans and peas), and even insects are gaining traction quickly over traditional animal proteins such as pork, chicken and beef.

The numbers are there. The “no meat” movement is alive and well, as indicated by diminishing numbers in beef consumption in Canada: **94 million kilograms less year-over-year compared to 2010 figures**. In addition, a study at Dalhousie University from May 2018 suggested that over 3 million Canadians were eliminating meat as part of their diets.⁵³ Furthermore 63% of vegans and vegetarians in Canada are younger than 38 years of age. The study showed estimates of 6.4 million Canadians following a diet that either limits meat intake or eliminates it altogether.⁵⁴ Clearly, the tide is turning for the meat sector in Canada.

It is important to note another shift in the marketplace: gender equity. Meat consumption has been tied to traditional notions of masculinity. From the days of hunting wild animals and cooking meat for a family, to steakhouses and barbecue events, men have traditionally cultivated an image of meat consumption. As well, the sector has historically marketed its products to the male demographic.⁵⁵ At a time when women's empowerment is finally a



Canada is known for its diversity. As we experience a shift in the food industry, our food supply should embrace more opportunities by making our food supply inherently more heterogenous.



52 <https://www.mckinsey.com/industries/agriculture/our-insights/how-the-global-supply-landscape-for-meat-protein-will-evolve>

53 https://www.dal.ca/faculty/management/news-events/news/2018/10/30/release__new_dalhousie_study_finds_that_6_4_million_canadians_limit_the_amount_of_meat_they_eat__and_number_will_likely_grow.html

54 <https://www.cbc.ca/news/canada/british-columbia/meat-diet-study-1.4883173>

55 Ruby, M. B., & Heine, S. J. (2011). Meat, morals, and masculinity. *Appetite*, 56(2), 447–450.



top-line item for every pillar of the economy, we're seeing a shift in consumer patterns. For years, meat consumption was a sign of strength and power. Nowadays, that view is becoming fragmented, and we see this as an exciting shift for the food industry.

In today's world, many factors shape food decisions: natural environment, animal welfare, product origins, human health and packaging all take up room in the decision matrix of the consumer. Prices obviously remain extremely important, but the alternatives to animal proteins usually cost less anyway. In the big picture, letting go of meat means better outcomes for the planet, human health and the consumer's wallet.

Returning to the movement for gender empowerment across all verticals of the economy, we are seeing new ideas developing when it comes to alternative protein products. The majority of start-up companies in the agri-food space in Canada should include more women and increasingly become multicultural to stimulate creativity, dynamism and overall economic growth. We are seeing positive correlations between social movements and changes in consumer preferences at the food level. Innovation was for a long time a foreign concept to the agri-food sector,⁵⁶ but we are now seeing new foods in the marketplace. As a tangible example, we've seen technologies and brands emerge at the forefront of alternative and plant-based protein categories. Companies like **Beyond Meat**, now selling to over 25,000 restaurants, and **Impossible Foods** are gaining significant traction on a global scale. Consumers are living through a pivotal moment in the agri-food industry: out with the old, in with the new. Never mind threats to the industry; greater choice offered to consumers allows the agri-food sector to continuously play a critical role in Canadians' lives.

56 Ross, R. B., & Westgren, R. E. (2009). Agent-based model of entrepreneurial behavior in agri-food markets. *Canadian Journal of Agricultural Economics*, 57(4), 459–480.



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