

Consumer Corner

Alternative proteins and the consumer



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Protein has traditionally played an integral role in the human diet. According to a recent study, **57 per cent of global consumers are actively seeking protein sources**.¹

Although protein continues to play a critical role in human nutrition, the sources from which it is derived are shifting. While meat consumption continues to rise, consumer interest in non-animal-based protein food options is increasing globally. Alternative protein has moved from niche to mainstream with new products regularly appearing on the market.

Consumers expect these new products to be **high quality, nutritious, sustainable, affordable**, and crucially, provide a **delicious and satisfying** product.²

Rising demand for alternative protein food options provides an opportunity for Alberta producers and processors to capitalize on this growing market. Following are details regarding the alternative protein market.

What is alternative protein? Alternative protein includes protein derived from non-animal sources such as: **plants, insects, microbial protein (algae, fungi, bacteria)**, and **cellular agriculture**.

Why is interest in alternative protein growing? Consumers are adopting the “flexitarian” approach to protein consumption. “Flexitarians” consume both traditional meat and plant-based alternatives. Nearly 60 per cent per cent of U.S. consumers agree that having the right dietary balance of both animal and plant foods is important.³

Current and future protein demand will be defined more by the word “and” rather than “or.” Nearly all (98 per cent) meat alternative buyers also purchase meat, and they do so more than the average meat buyer (\$486 vs. \$478 per year). Less than a third (27 per cent) of meat alternative purchasers buy meat alternative products five or more times a year. Flexitarians account for 37 per cent of all meat alternative buyers and they spend \$643 on meat and meat alternatives annually, \$165 more per year than the average meat buyer.⁴

What type of protein are consumers looking for?

One of the biggest shifts in eating behavior in Canada and in other markets has been the **movement towards plant-based food and beverages**. Does this represent a passing fad or a sustained, longer-term shift? Feedback gathered from Canadians suggests the latter. The base of Canadians who indicate that they are trying to add more plant-based substitutes to their diet is relatively broad (28 per cent).⁵ **Plant-based protein comprises the largest share of the alternative**

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¹ <https://www.foodingredientsfirst.com/news/Givaudan-unveils-most-promising-new-plant-based-proteins-in-collaboration-with-UC-Berkeley.html>

² <https://www.givaudan.com/file/163356/download>

³ <https://www.nielsen.com/us/en/insights/article/2019/the-word-flexitarian-is-not-a-curse-to-the-meat-industry/>

⁴ <https://www.nielsen.com/us/en/insights/article/2019/the-word-flexitarian-is-not-a-curse-to-the-meat-industry/>

⁵ Mintel, <https://www.mintel.com/market-reports/canada/wp-content/uploads/sites/2/2019/06/market-research-plant-based-food-drink-canada-may-20191.pdf>



The alternative protein market is expected to reach US\$13.7 billion by 2021.

protein market and is expected to grow at an eight per cent compound annual growth rate to reach **US\$13.7 billion globally by 2021**.⁶

Canada Food Guide - The Canada Food Guide supports plant-based protein consumption:

“Choose protein foods that come from plants more often. Plant-based protein foods can provide more fiber and less saturated fat than other types of protein foods which can be beneficial for heart health.”⁷ The 2019 Canada Food Guide recommends that our plates contain 50 per cent plant-based foods.⁸

Top plant-based proteins

While plant proteins such as soy, flax seed, hemp seed, and many others continue to experience market growth, the top six up-and-coming plant-based proteins likely to be game-changers for the food and beverage industry are: **oats, mung beans, chickpeas/garbanzo beans, lentils, flax, and sunflower seeds**.

According to a study conducted by the University of California Berkeley, these proteins can be **sustainably sourced** at scale and deliver **high quality nutrition** cost effectively. These attributes will help to drive market growth.⁹

⁶ <https://www.foodingredientsfirst.com/news/Givaudan-unveils-most-promising-new-plant-based-proteins-in-collaboration-with-UC-Berkeley.html>

⁷ <https://food-guide.canada.ca/en/healthy-eating-recommendations/make-it-a-habit-to-eat-vegetables-fruit-whole-grains-and-protein-foods/eat-protein-foods/>

⁸ https://www.vegancanada.org/pages/campaign/health.html?gclid=EAIaIQobChMI4pWqW5md6QIVVh6tBh2rsQX1EAAyAAEgK6rPD_BwE

⁹ <https://www.foodingredientsfirst.com/news/Givaudan-unveils-most-promising-new-plant-based-proteins-in-collaboration-with-UC-Berkeley.html>

Oats - Today's fast-paced lifestyle has driven demand for ready-to-eat oat products. Oat granola consumption is increasing globally with the breakfast oat flakes and oat bars segment experiencing the fastest growth.

The online food market has also been rapidly growing globally and has attracted companies such as Amazon, Walmart, and Carrefour, who are vying for an increased share of the online oat market.¹⁰ In 2019 Canadian annual oat milk sales rose 250 per cent over 2018.¹¹ Oat milk is an ideal alternative for people who are allergic or intolerant to dairy and/or nuts.¹²

Mung beans - Mung beans are small green-colored beans characterized by a slightly sweet taste and are usually sold in fresh, sprouted or dried forms. Mung beans are widely used to prepare dishes such as salads, soups and stir-fries.¹³

Chickpeas/garbanzo beans - Chickpeas, also known as garbanzo beans are found in hummus, tahini, curries, and falafels and are added to a variety of dishes like sauces, dips, soups and spreads.¹⁴

Chickpeas are used to prepare gluten-free flour allowing individuals who are intolerant to grain-based products to consume chickpea flour. The growing use of chickpea flour has been identified as a key trend driving market growth.¹⁵ Restaurants and fast-food chains are using chickpeas in their menu offerings and manufacturers have also started including chickpeas in processed foods.¹⁶

¹⁰ <https://www.mordorintelligence.com/industry-reports/oats-market>

¹¹ <https://www.producer.com/sponsored/the-growing-demand-for-high-quality-oats/>

¹² <https://www.producer.com/sponsored/the-growing-demand-for-high-quality-oats/>

¹³ <https://www.imarcgroup.com/global-mung-beans-market>

¹⁴ <https://farmlead.com/blog/insights/2017-18-chickpeas-markets/>

¹⁵ <https://apnews.com/9a928cfa25734238afb3fba9066c846f>

¹⁶ <https://www.factmr.com/report/296/chickpeas-market>

Lentils - Lentils are used as aroma enhancers in soups, sauces, dips, and spreads and lentil protein is used in bakery products, confectionaries and snacks, and as ready-to-eat food products. The long shelf life and the fact that the majority of lentil proteins are organic and contain little or no artificial colors, sweeteners, or fillers, has resulted in increased demand for lentil protein globally.¹⁷

Flaxseed - Bakery product manufacturers are increasingly using flaxseed flour in bakery products to increase sensory and nutritional qualities.¹⁸ The increasing use of flax in energy bars, breakfast cereals, and bakery products is expected to fuel growth.

Sunflower seeds - Sunflower seeds are increasingly being used as an ingredient in food products and as edible oil. Demand from the bakery products market is expected to rise as they are used in bakery mixes for bread, pancakes, baked foods, and snacks.¹⁹ The sunflower seed snack industry has developed rapidly as a convenient on-the-go snack option and a growing number of supermarkets and retailers are increasing demand for various flavors worldwide. Manufacturers are focusing on providing healthier product offerings. As a result of the rich source of fiber in sunflower seeds the global sunflower seed market is expected to experience robust growth.²⁰

Plant-based meat

In North America, **alternative meat sales grew 37 per cent from 2017 to 2019 representing US\$800**

¹⁷ <https://www.prnewswire.com/news-releases/lentil-protein-market-is-forecasted-to-reach--us-200-mn-by-the-end-of-2029--pmr-300907435.html>

¹⁸ <https://www.grandviewresearch.com/industry-analysis/flaxseeds-market>

¹⁹ <https://www.prnewswire.com/news-releases/global-sunflower-seeds-market-worth-usd-30-11-billion-by-2025-hexa-research-300810621.html>

²⁰ <https://www.futuremarketinsights.com/reports/sunflower-seeds-market>

²¹ <https://www.forbes.com/sites/juliabolayanju/2019/07/30/plant-based-meat-alternatives-perspectives-on->

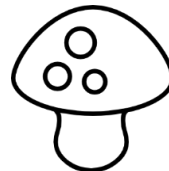
Million in 2019. Market data, as well as technological and financial investments, indicate this market will continue to grow.²¹

The flavors, textures, mouth-feel and consumer experience will continue to become more sophisticated as ingredients, technologies and process innovation develops over the next ten years. Consumers desire 'meat-identical' alternatives and the food industry is working hard to deliver top-notch options.²²

However, as consumers begin to question the healthfulness, processing, and long ingredient lists of these alternatives, there are opportunities to highlight the flavor and texture benefits of natural plant-based ingredients.²³

Plant-based dairy - A Nielsen market research report indicated that the US "other" plant-based dairy alternatives market (including plant-based cheeses, creamers, butter, yogurts and ice creams, excludes milk) has experienced explosive growth. The growth in plant-based creamers was particularly strong with a 131 per cent increase from June 2017 to June 2018 with sales totaling US\$109 million. Plant-based cheeses grew 43 per cent totaling US\$124 million during the same period, and plant-based yogurts grew 55 per cent with sales of US\$162 million.²⁴

Microbial protein - Microbial protein is derived from the dried cells of microorganisms (i.e. yeasts, microalgae, fungi) grown in a large-scale culture system. The protein content ranges from 40-60 per cent. The most



[consumer-demands-and-future-directions/#76eb00386daa](https://www.forbes.com/sites/juliabolayanju/2019/07/30/plant-based-meat-alternatives-perspectives-on-consumer-demands-and-future-directions/#76eb00386daa)

²² <https://www.forbes.com/sites/juliabolayanju/2019/07/30/plant-based-meat-alternatives-perspectives-on-consumer-demands-and-future-directions/#76eb00386daa>

²³ Mintel, PLANT-BASED FOOD & DRINK - CANADA - MAY 2019.

²⁴ https://www.ift.org/news-and-publications/news/2018/august/01/plant-based-foods-experience-surge-in-sales?gclid=EAlaIQobChMI9K6fvaCd6QIV2h-tBh17tAcSEAYyAAEgl64vD_BwE

common sources used for food are microalgae and mycoprotein (i.e. derived from mushrooms). Some microalgae are also used to dress up beverages such as shakes and smoothies.²⁵

Growing attention is being given to the **nutritional value of algae**. These plants represent a promising future protein source, although further research is needed to realize the full potential of marine plants as protein sources.²⁶

Insect protein - Insect-derived protein is gaining popularity. Large global players such as Tyson, Cargill, and Maple Leaf Foods have invested in this market positioning insect protein more into the mainstream.



The benefits of using insects as human food is similar to that for plant-based protein. The price can be more expensive due to less availability. The most commonly used insects for food application are crickets, mealworms, locusts, and grasshoppers. Insects can be used raw/whole, coated (bars, candy, chocolate, cookies, snack packs), or as powder/flour, and paste.

Insects are used in bakery, chocolate bars, muffins, and biscuits.²⁷ While there is a “yuck factor” associated with insect consumption in North America, consumers are more apt to accept insect protein flour as an ingredient in food products such as energy bars rather than in their whole form.

Cultured meat



Cultured meat cells are grown in laboratories through tissue engineering technology (i.e. incubating a single muscle cell of beef or pig in nutrient rich liquid).

Lab-grown meat has advantages of reduced risk of contamination and foodborne illness as well as being more ethically acceptable for some people.

However, large scale production is costly due to technical limitations.²⁸ Industry experts expect the product to enter the retail market in the next three to five years with a preliminary introduction to consumers through high-end restaurants. However, the product may appeal to a limited segment primarily concerned with animal welfare and the environment rather than health, limiting the potential consumer market.

Timothy Caulfield, Canada research chair in health law and policy at the University of Alberta, notes that positivity towards food science differs by generation, with Generation Z being the most accepting with 71 per cent of respondents comfortable with tech-assisted food, compared with 56 per cent of Generation X and 58 per cent of baby boomers.²⁹

²⁵

<https://www.nottingham.ac.uk/biosciences/documents/business/food-innovation-centre/food-waste-alternative-protein-event-2018/fact-sheet-alternative-protein-dr-wentao-liu.pdf>

²⁶ <https://www.mintel.com/blog/food-market-news/plant-based-proteins-on-the-rise>

²⁷

<https://www.nottingham.ac.uk/biosciences/documents/business/food-innovation-centre/food-waste-alternative-protein-event-2018/fact-sheet-alternative-protein-dr-wentao-liu.pdf>

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²⁸

<https://www.nottingham.ac.uk/biosciences/documents/business/food-innovation-centre/food-waste-alternative-protein-event-2018/fact-sheet-alternative-protein-dr-wentao-liu.pdf>

²⁹ <http://www.nourish.marketing/wp-content/uploads/2019/12/the2020trendreport-nourish-digital.pdf>

Key takeaways

- **Rising demand** - Growth is expected to continue in the global alternative protein food and beverage market offering opportunities for Alberta producers and processors to capitalize on this lucrative market. The key market drivers are concerns regarding health, environmental sustainability, and animal welfare. Marketing campaigns promoting the nutritional benefits and environmentally responsible production practices will experience the most success in appealing to consumer demand.
- **Plant-based protein** – Plant-based protein comprises the largest share of the alternative protein food and beverage market and demand is anticipated to continue increasing. While market opportunities exist for many plant-based proteins, oats, chickpeas/garbanzo beans, flax seed, sunflower seed, mung beans, and lentils are expected to experience the greatest growth.
- **Meat demand** – while global meat consumption is rising, consumers are willing to purchase “meat” alternatives which drives the continuing growth of the plant-based meat alternative market. However, as consumers begin to question the nutritional properties of these alternatives, food processors should highlight the flavor and texture benefits of natural plant-based ingredients.
- **Consumer purchasing behavior** - Getting consumers to try plant-based meat alternatives is relatively easy compared to encouraging long-term adoption of these products. Manufacturers must provide convincing evidence that plant-based meat is healthy and that its production is environmentally sustainable.
- **Cultured meat** - Cultured meat must overcome many barriers before being accepted by the mainstream consumer. The cost of production impedes growth. This protein is not expected to receive widespread consumer acceptance in the near-term. However, Generation Z is the most willing to try cultured meat and therefore

marketing campaigns should target this consumer segment.