

PLANT-BASED PROTEINS

BACKGROUND

Plant-based protein, specifically simulated meat products, have received media attention in recent years as new brands are introduced in restaurants and grocery stores. These products are sometimes promoted to consumers as a way to reduce their environmental footprint and improve health, while being able to enjoy a taste and eating experience similar to that of meat. Such claims are backed by inaccurate perceptions about beef's role in a healthy diet and a narrow definition of food sustainability based on greenhouse gas (GHG) emissions alone. Clear labeling and fact-based product claims are vital so Canadians can make informed decisions about what they eat and feed their families.











KEY MESSAGES

- Beef is a single ingredient, nutrient-dense, whole food grown on the Canadian landscape, while plant based protein products tend to be factory generated and highly processed.
- Not all protein is created equally.** Beef has all the essential amino acids (building blocks) needed to build muscle or create protein within the human body. Plant proteins are incomplete proteins and require far more energy intake to meet essential amino acid requirements¹.
- Beef provide nutrients in highly bioavailable forms—meaning the body can absorb and use them efficiently. Essential nutrients like **iron, zinc, vitamin B12, and high-quality protein** are significantly more accessible from beef than from plants, helping to prevent deficiencies and support overall health across all life stages¹.
- As plant proteins are often incomplete and less bioavailable, it takes a significantly larger quantity—and greater overall energy intake—to match the nutritional quality of beef. This means individuals must consume more food to achieve the same levels of essential amino acids and nutrients provided by a modest serving of beef¹.
- In Canada, about 60% of the farms and ranches are mixed, meaning they grow crops and raise beef cattle. The interconnected nature of growing food in Canada results in a strong and circular production system. **Plant and animal proteins are complementary, both on the farm and on your plate.**
- Removing animals from our food system would have negative health and environmental consequences for Canadians. Diets without animal proteins have been found to be **deficient** in micronutrients like calcium, fatty acids, and vitamins A and B12².
- Most GHG comparisons between plant-based proteins and beef use global averages. Canadian beef emits **less than half the global average** per kg³, so without regional context, such comparisons are inaccurate and misleading.
- Eliminating cattle from the food system would not result in proportional GHG reductions, as it would increase reliance on synthetic fertilizers and lead to more food waste². **Cattle play a vital role in upcycling** otherwise inedible plant materials—such as crop residues and food manufacturing by-products—into high-quality protein. Without livestock, these by-products would likely be discarded, generating additional GHG's in landfills and removing a natural recycling system from agriculture.
- There are numerous benefits associated with having cattle on the land in Canada including increased carbon sequestration, wildlife habitat capacity, biodiversity, preserving native grasslands and other ecological services while contributing a high-quality protein in the form of beef to our food system⁴.

THINK
BEEF

Seeking Protein?

Here's what 35 grams of protein looks like

	AMOUNT	CALORIES
 Ground Beef (cooked, extra lean)	 100 grams = 1 serving* (the size of your palm)	250
 Almonds	 Over 1 cup (3.3 servings); ½ cup (50 grams) = 1 serving*	960
 Peanut butter	 over 9 tbsp (9.4 servings); 1 tbsp = 1 serving*	860
 Hummus	 1¾ cups (14.2 servings); 2 tbsp = 1 serving*	740
 Black beans (cooked/canned)	 Over 2 cups (4.3 servings); ½ cup = 1 serving	520

Source: Health Canada, Canadian Nutrient File, 2015, Beef 6172, Almonds 2534, Peanut Butter 6289, Hummus 4870, Black Beans 3377. Nutrient amounts rounded as per 2016 CFIA labelling rounding rules. *Table of Reference Amounts for Food: <https://www.canada.ca/en/health-canada/services/technical-documents/labelling-requirements/table-reference-amounts-food/nutrition-labelling.html>

FREQUENTLY ASKED QUESTIONS



Are plant-based proteins healthier than animal proteins?

Not all protein is created equally. Beef provides all nine essential amino acids in the right balance to support muscle growth, immune function, and overall health—making it a complete, high-quality protein. Unlike most plant proteins, which are often incomplete and less bioavailable, beef delivers these amino acids and other key nutrients like iron, zinc, and vitamin B12 in forms the body can absorb and use efficiently. As a result, it takes significantly more plant-based food and energy intake to match the amino acid profile and nutritional value of a single serving of beef¹.

It is important to eat a variety of protein foods as they each have a unique bundle of beneficial nutrients. Plant-foods champion fibre for example, while animal foods are protein rich.

Are plant-based diets more sustainable?

Comparisons of GHG's between beef and plant-based protein emissions are often misleading, as they typically use global averages for beef production. This overlooks significant regional differences between systems⁵—Canada's beef sector produces less than half the global average GHG emissions per kilogram of beef³. Without considering this context, such comparisons fail to accurately reflect the sustainability of Canadian beef.

Beyond emissions—a **food system's sustainability is more complex than a single metric** and overlooks the ecosystem services provided by having cattle on the land.

In Canada, beef production conserves endangered grasslands and keeps pasturelands intact. These landscapes sequester and maintain stored carbon, help filter water, improve air quality, promote biodiversity, provide wildlife habitat and makes use of land that couldn't be used to grow crops⁴. Beef cattle also upcycle by-products, including those generated by plant-based protein companies. For example, beef cattle consume pea cream, a by-product from a pea processing plant in Manitoba.

Are Canadians eating too much red meat?

Canadians are overfed but undernourished due to diets consisting mostly of ultra-processed foods high in simple carbohydrates and low in protein and other nutrients⁶.

Unprocessed red meat accounts for only 5% of calories in the Canadian diet⁷. In Canada, many adults eat less protein than the current Recommended Dietary Allowance (RDA)⁸, the minimum daily goal.

Many Canadians could benefit from eating more beef. Beef contains 7 of the nutrients that many Canadians need more of in their diets, including: iron, zinc, magnesium, potassium, vitamins B12, B6 and thiamine⁶.

Both plant-based and animal-based foods belong on the plate as part of a healthy diet.



The best way to reduce your environmental impact through food choices is to reduce your food waste.



Canadian Cattle Association



CANADIAN BEEF
Public & Stakeholder Engagement

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2. White, R. R., & Hall, M. B. (2017). Nutritional and greenhouse gas impacts of removing animals from US agriculture. *Proceedings of the National Academy of Sciences of the United States of America*, 114(48), E10301–E10308. <https://doi.org/10.1073/pnas.1707322114>
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4. Canadian Roundtable for Sustainable Beef. (2024a). National Beef Sustainability Assessment: Environmental and Social Assessments. Calgary, AB: Groupe AGECO.
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6. Health Canada. (2015). Canadian Nutrient File. Nutrient values per 100 g for Food Code Beef 6172 (composite cuts, steak/roast, lean and fat, cooked).
7. Statistics Canada. 2018. Customized analysis of 2015 Canadian Community Health Survey - Nutrition data. (Mean red meat intakes for Canadians 1+ years).
8. Statistics Canada. 2023. Customized analysis of 2015 Canadian Community Health Survey – Nutrition data on protein intakes in adults