

Plant Protein Powers Up



ONCE A SUBSTITUTE, now a star, plant-based protein ingredients are powering a multibillion-dollar global market. Even as sales have declined slightly in the \$8.1 billion market for U.S. retail plant-based foods, according to SPINS data, the global hunger for plant-based protein ingredients in both vegetarian and non-vegetarian products continues to grow. With a projected compound annual growth rate of 8.5%, the worldwide \$20.3 billion plant-based protein ingredients market will hit \$46 billion by 2035, reports Future Market Insights, dominated by soy, pea, and wheat protein.

Isolates account for more than 40% of market share, and pea and soy isolates in sports nutrition and ready-to-drink beverages are driving growth in the U.S. market. For wheat protein ingredients, Innova Market Insights identifies breads, cakes, pastries/sweet goods, and instant noodles as the top new product launches from 2020 to 2024.

The variety of protein ingredients powering plant-based food and beverage products continues to expand, says Lu Ann

3000s BCE:
Soybeans are cultivated in China.

1800s: Pea flour is advertised in vegetarian periodicals as a protein supplement.



1936: Organic chemist Percy Lavon Julian designs the first production plant for isolating industrial-grade soy protein.

1899: John Harvey Kellogg's Battle Creek Sanitarium in Michigan cooks up Protose, a commercial meat substitute made with peanuts and wheat gluten.



Plant-Based Protein Ingredients Throughout History

965: Tofu making is first recorded during the Han dynasty in China.



1883: Dr. T.L. Nichols publishes *Penny Vegetarian Cookery* in London, England, with recipes featuring his patented wheat protein called Food of Health.



1910: USDA botanists William Joseph Morse and Charles Piper popularize the lowly soybean as a "golden bean" in the United States.





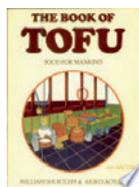
Williams, global insights director at Innova Market Insights. “Suppliers are exploring more diverse protein sources, including different pulses and seeds,” says Williams. “Flaxseed and lentil are on the watch list, while fava bean and vegetable proteins are trending.”

“[Fava] beans are an emerging growth opportunity, as they boast neutral taste, light color, and high protein content,” agrees Nikhita Mansukhani Kogar, principal scientist, plant-based meat, for the Good Food Institute. “We have seen several initiatives to expand [fava] bean protein isolate lines as a result.” Burcon’s FavaPro launched in August 2025, and new isolates from Roquette, Bunge, and Wide Open Agriculture debuted in 2024.

Innovative advanced food technologies also are opening new possibilities for plant-based protein ingredients, adds Antje Räscher, who heads the ProVeg Incubator for alt-protein startups. “Technologies like AI [artificial intelligence], precision processing, and enzymatic treatment are helping companies extract proteins [and other ingredients] from byproducts like spent grain, fruit pulp, or vegetable peels,” says Räscher.



1961: Japanese macrobiotic diet advocate George Ohsawa coins the term *seitan* for wheat gluten.



Mid-1970s: Soy foods thrive during a vegetarian revival thanks to tomes like *The Book of Tofu*.

2012: Beyond Meat rolls out its first product, plant-based Beyond Chicken Strips made with soy powder, at Whole Foods.



2016: The Impossible Burger debuts with soy and potato proteins.

1960s: Archer Daniels Midland researchers invent textured vegetable protein (TVP).

1971: TVP is approved for use in U.S. school lunch programs, boosting consumption.



2002: Burger King beefs up its national menu with BK Veggie, a plant-based burger mixing soy, grains, and vegetables.

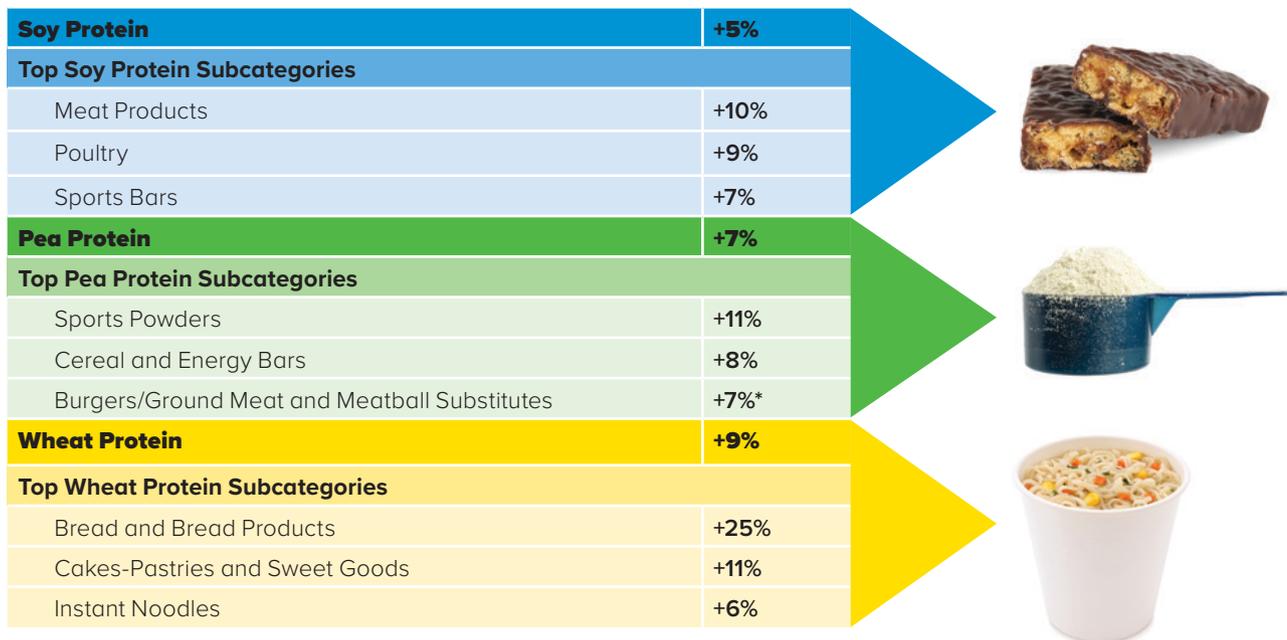
2015: Beyond Meat releases the Beyond Burger using pea protein isolates, rice protein, red lentil protein, and fava bean extract.



2021: Canada-based Merit Functional Foods opens the first commercial-scale facility to produce food-grade protein from canola.



Annual Global Growth Rate (2020–2024) in Retail Food/Beverage Product Launches Made With:



* 2020-2025

Source: Innova Market Insights



75%

Percentage of **millennial consumers who are interested in trying blended or hybrid products** that combine plant-based proteins with other types of proteins

Source: ADM, Alternative Protein Landscape Report, July 2025

Plant-Based Protein Ingredients Glossary

Fava bean—round or oval flattened green bean with tough, clear coat; also broad bean, faba bean

Pea protein—protein extracted from yellow split peas, which have a high protein content and mild flavor

Protein concentrate—protein refined to contain approximately 70% to 85% protein by weight, usually in powdered form

Protein hydrolysate—mix of oligopeptides, peptides, and free amino acids produced by hydrolysis of a protein

Protein isolate—protein refined to contain approximately 90% or more protein by weight

Rubisco—ribulose 5-bisphosphate carboxylase/oxygenase, an enzyme stored in all green leaves of plants

Seitan—food product made from wheat gluten that mimics the look and texture of meat; also wheat meat, gluten

Soy protein—protein isolated from dehulled, defatted soybean meal

Tempeh—soybeans fermented into cake form

Textured vegetable protein (TVP)—defatted soy flour product produced from protein-rich seed meal

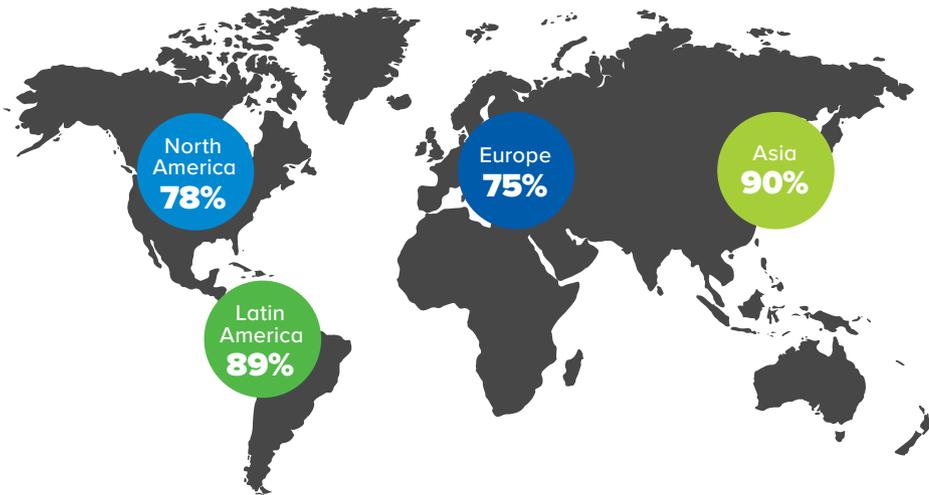
Tofu—coagulated soy milk curds pressed into white blocks of varying softness

Wheat protein—water-insoluble complex protein fraction separated from wheat or wheat flour

Sources: Biology Insights, ScienceDirect, Wheat Protein Association, Wikipedia

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Global Consumers Who Say They Want Protein Ingredients in Their Foods and Beverages



Source: ProVeg International/Innova Market Insights, 2023



COURTESY OF PLANTIBLE FOODS

A New Leaf

An enzyme stored in every green leaf on Earth, rubisco (ribulose 5-bisphosphate carboxylase/oxygenase) is a plant-based protein ingredient with limitless potential, say its supporters. Most commonly grown commercially in alfalfa and kale, rubisco is on the rise:

- ▶ New Zealand-based Leaft Foods recently patented technology enabling it to extract rubisco in large quantities.
- ▶ Israeli startup Day 8 is planning a U.S. launch of its rubisco protein powder made mainly from banana leaf waste within a few years.
- ▶ California's Plantible Foods is working to scale up production of Rubi Protein from duckweed (*Lemna*), a freshwater aquatic plant, after partnering with ICL Food Specialties last year to produce a binding solution for vegan meat and seafood formulations. **ft**

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45%
Percentage of American consumers who say they are interested in plant-based protein for **health reasons**

Source: The Protein Profile, Cargill, 2025

Global Consumers Interested in Alternative Proteins From:

Lentils	32%
Chickpeas	30%
Mushrooms	25%
Fava Beans	12%

Source: 5 Plant-Based Protein Trends for 2025, Glanbia Nutritionals



\$1.96 billion
Global pea protein ingredients market

Source: Research and Markets, 2024