

Wheat, Pea, Textured protein

# Cargill™ plant protein

**Versatile. Functional. Irresistible.**



*Cargill.com*

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**Cargill**® Helping  
the world  
*thrive*

Food and beverage manufacturers have long relied on plant proteins to add nutritional and functional value to a wide range of products. More recently, these ingredients have become the leading ingredients of the booming plant-based movement. Their growing popularity has sparked an explosion of options but determining the right plant-protein solution for a specific application requires careful consideration.

Cargill, with its deep experience in different proteins, can help you match protein choices to brand goals, resulting in a new generation of products that meet the diverse needs and desires of today's more discerning consumer. Whether for breakfast, lunch or dinner, our proteins enable your products to have a fixed place in consumers' kitchens and on their tables. We offer proteins that deliver a variety of taste, texture and functionality options, that support you building products consumers will return to again and again.

### Plant-based possibilities

Innova Market Insights has closely tracked the plant-protein boom, noting nearly one in five European shoppers reported an uptick in plant-based protein consumption in the last year.<sup>1</sup> That healthy rise has translated into more meatless meals and plant-based food and beverage innovation, and a 8.6% for 2017-2021 in new products made with plant proteins.<sup>2</sup>

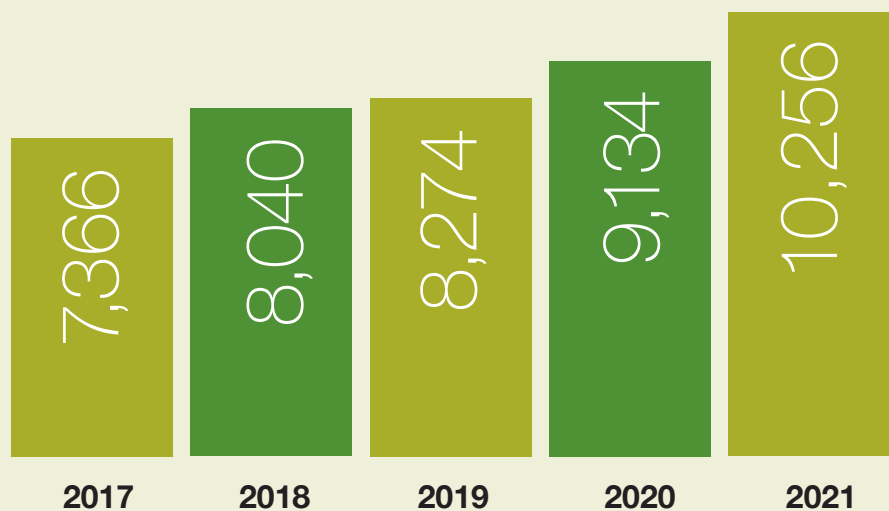


**By 2035, assuming that alternative proteins reach full parity in taste, texture and price with conventional animal proteins, Boston Consulting Group anticipates that 11% of all the meat, seafood, eggs and dairy eaten around the world will be made of alternative proteins [up from around 1% in 2022]. With a push from regulators and step changes in technology, that number could reach 22%."**

*Boston Consulting Group & Blue Horizon, July 2022<sup>3</sup>*

### New product launches with plant-based protein (Europe)

**CAGR 2017-2021: 8.6%**



Source: Innova database, 2021

## Protein claims

But being plant-based isn't enough. Increasingly, consumers are scrutinizing protein claims on product packaging, which is why the source of/high protein trend has moved to the mainstream. No longer limited to nutritional bars and shakes, product developers are boosting protein levels in everything from spoonable yogurt and plant-based alternatives for ice cream to ready meals.

Standouts include consumer-favorites pea and wheat protein, which are top ingredients in new product launches with plant-based claims.<sup>5</sup> Pea protein in particular has attained rising-star status, with Euromonitor data finding the protein delivered the highest growth in volume in 2021.

# 14%

of European consumers are willing to pay up to 10% more for foods or beverages that are high in protein

*HealthFocus International<sup>4</sup>*

# “

In Europe, a product may claim to be a 'source of protein' if at least 12% of the energy value of the food comes from protein. To claim the product is "high in protein," the bar rises to 20%. We can help you navigate the nuances of protein claims, help determine what you can put on the label and sort through the myriad of plant-protein options available to achieve those claims."

*Eric Chappuis,  
R&D Scientific and Regulatory Affairs EMEA*





# Our solution: Cargill™ plant protein

Cargill's portfolio includes plant proteins derived from both pea and wheat, ingredients with proven credentials. Additionally, we can help navigate formulation challenges, leveraging our versatile, functional and irresistible plant proteins portfolio, and our ingredient and application know-how to achieve nutrition goals, and deliver on taste, texture and functionality.



## VERSATILE

- Highly nutritional, with complementary amino acid profiles
- Available in textured and powdered formats for greater versatility
- Flexible, for use across a wide range of application areas



## FUNCTIONAL

Our pea, wheat and textured proteins can deliver different features and functional benefits in various applications. These include:

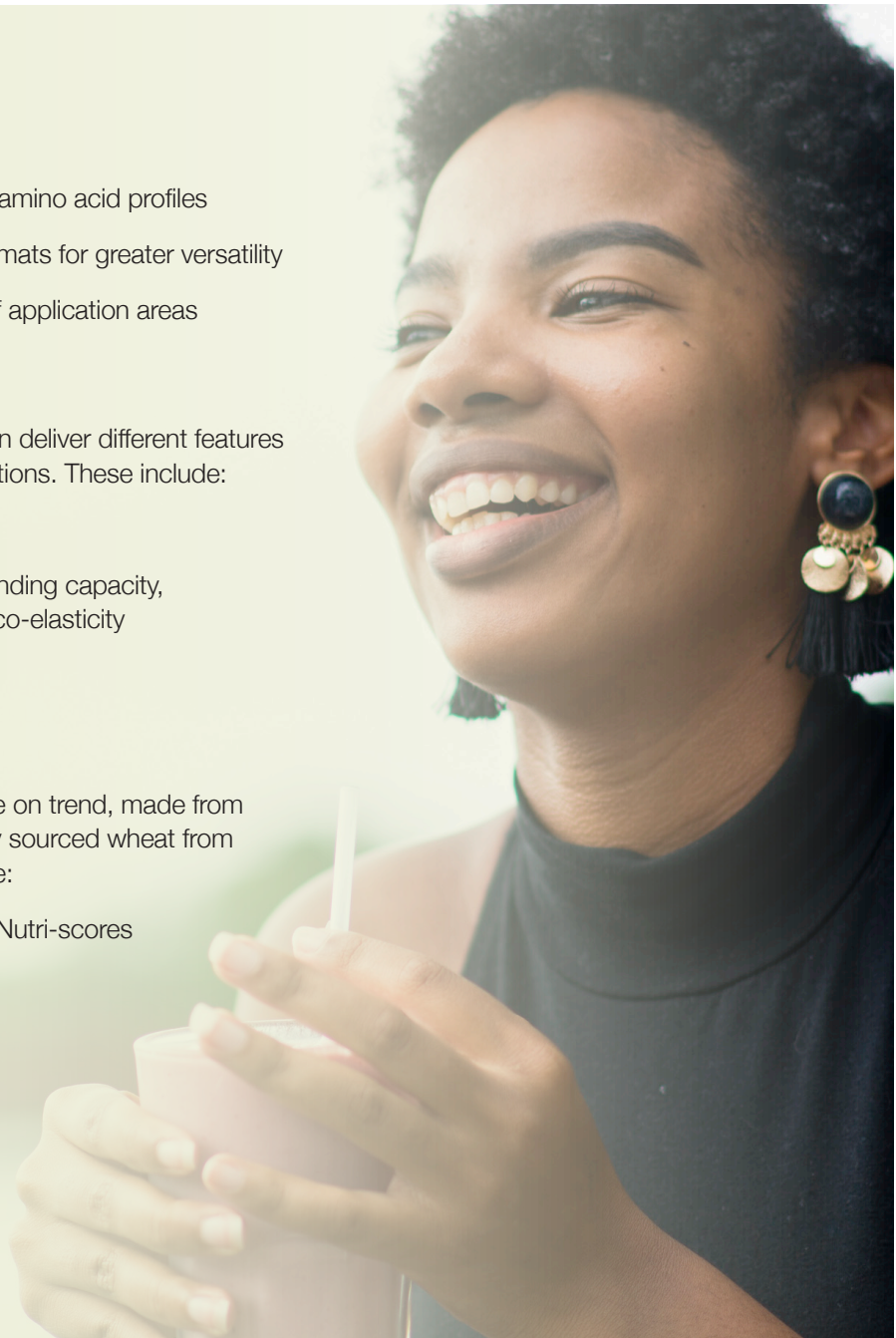
- Texture, structure and mouthfeel
- Binding capacity, solubility, viscosity, binding capacity, emulsification, foaming, gelling and visco-elasticity
- Protein enrichment

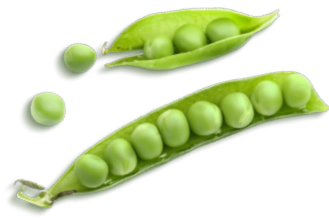


## IRRESISTIBLE

Our plant proteins with a neutral taste are on trend, made from the sustainable pea crop and sustainably sourced wheat from EU farmers. They can be used to achieve:

- Higher protein levels to support better Nutri-scores
- Label friendly formulations





### Pea protein

Nutritionally, peas are rich in quality protein and have a good amino acid profile. Functionally, they are among the most soluble plant proteins available. They offer great emulsification and foaming capacity, along with good water-binding, cohesion and adhesion properties, helping to improve overall texture and mouthfeel.

Produced through patented processes and proprietary technology, our **pea protein isolates** with a protein level of min. 80% feature a mild flavor profile and plenty of viscosity options. For maximum flexibility, we offer both **standard and hydrolyzed pea proteins (RadiPure® & Puris™\*)**.



### Wheat protein

Wheat protein serves well for protein enrichment, as a texturizer, and has binding and thickening capabilities. Our affordable, wheat-based options with protein levels of min. 75% & 76.5% provide functional and nutritional benefits, and they can be easily incorporated into a wide array of food applications thanks to their neutral flavor profile.

We offer **hydrolyzed protein (Prowliz®)** and **vital wheat gluten (Gluvital®)**, the latter being the insoluble protein fraction of wheat flour. It stands apart from other plant proteins due to its unique visco-elastic properties. Vital wheat gluten provides consistency in flour, improved dough machinability and extended shelf life for finished products. It is commonly used in pastas and bread, but also works well in snacks, cereals and plant-based meat alternatives.



### Textured plant protein

Our latest launched solution, **TEX PW80 M**, is bridging a substantial gap in texture, taste and nutrition, addressing the needs of the non-soy based meat alternative category. Developed for plant-based and burger and meatball alternative applications, TEX PW80 M successfully mimics a meaty-like texture by delivering the right bite, chew, juiciness and mouth-feel to plant-based alternatives.

Blending pea and wheat delivers a superior amino acid profile versus single-source protein, and offers a high protein content (min. 77%). On top, its light color and plain (mild) taste with minimal off notes make it an easy protein to color and flavor, making it suited to adapt to preferred tastes and flavors of local cuisines. In combination with binders, our textured protein also helps to retain moisture, in frying pans and in pack.



**Produced through a dry extrusion process, our textured protein brings great texture with a fibrous structure in ground & formed plant-based meat alternatives. The protein's format and fast hydration help simplify plant-based meat alternative production, which means cost optimization. TEX PW80 M maintains its structure and provides firmness throughout this process."**

*Zuzana van Beveren, Principal Scientist Meat Alternatives*

\*Puris™ is a licensed trademark of Puris Proteins

# Cargill™ plant protein portfolio overview by application

Applications	Key benefits*	Recommended products
 <b>Plant-based Meat and Seafood Alternatives</b>	<ul style="list-style-type: none"> <li>• Meat-like texture and cooking experience</li> <li>• Fast hydration</li> <li>• Emulsification, water holding</li> <li>• Protein enrichment</li> </ul>	<ul style="list-style-type: none"> <li>• Texturized protein</li> <li>• Pea protein isolates</li> <li>• Hydrolyzed pea protein isolates</li> <li>• Wheat gluten</li> <li>• Hydrolyzed wheat protein</li> </ul>
 <b>Dairy/Plant-based Dairy Alternatives</b>	<ul style="list-style-type: none"> <li>• Creaminess</li> <li>• Foaming</li> <li>• Viscosity</li> <li>• Firmness</li> <li>• Gelation in fermented products</li> <li>• Mouthfeel</li> <li>• Protein enrichment</li> </ul>	<ul style="list-style-type: none"> <li>• Pea protein isolates</li> </ul>
 <b>Beverages</b>	<ul style="list-style-type: none"> <li>• Solubility</li> <li>• Viscosity</li> <li>• Stability</li> <li>• Protein enrichment</li> <li>• Mouthfeel</li> </ul>	<ul style="list-style-type: none"> <li>• Pea protein isolates</li> <li>• Hydrolyzed pea protein isolates</li> <li>• Hydrolyzed wheat protein</li> </ul>
 <b>Baked Goods</b>	<ul style="list-style-type: none"> <li>• Structure</li> <li>• Water binding</li> <li>• Emulsification, partial egg replacement</li> <li>• Texture</li> <li>• Protein enrichment</li> </ul>	<ul style="list-style-type: none"> <li>• Wheat gluten</li> <li>• Hydrolyzed wheat protein</li> <li>• Pea protein isolates</li> </ul>
 <b>Bars/Snacks</b>	<ul style="list-style-type: none"> <li>• Protein enrichment</li> </ul>	<ul style="list-style-type: none"> <li>• Wheat gluten</li> <li>• Hydrolyzed wheat protein</li> <li>• Pea protein isolates</li> </ul>
 <b>Pasta/Noodles</b>	<ul style="list-style-type: none"> <li>• Protein enrichment</li> </ul>	<ul style="list-style-type: none"> <li>• Wheat gluten</li> <li>• Hydrolyzed wheat protein</li> <li>• Pea protein isolates</li> </ul>

\* Key benefit is not one on one linked to the recommended product rows

Disclaimer Wheat protein: According to EU Regulation (EC) 2073/2005 on microbiological criteria for foodstuffs, wheat gluten and wheat protein are not intended for direct human consumption (i.e. not "ready-to-eat") without further processing (e.g. cooking, baking, frying) to eliminate or reduce microorganisms to an acceptable level.



## Sustainability

Our plant protein solutions also come with environmental credentials. Consumers are increasingly conscious about what they buy, with an eye toward products made with sustainably sourced ingredients. Our plant-based proteins live up to those expectations and can support brand or corporate sustainability commitments.

Our **sustainably sourced wheat in Europe** is externally verified and benchmarked Silver level according to the SAI Platform's Farm Sustainability Assessment (FSA). This industry-recognized system supports good agricultural practices in key sustainability areas, including soil conservation, biodiversity conservation and water quality.

Further, as part of our far-reaching regenerative agriculture strategy, we partner with European farmers on a multi-pronged approach to reduce carbon and help improve water conservation. This includes long-term collaborations aimed at helping farmers in our supply chains create healthy soils that store more greenhouse gases – backed up by strict protocols that assess and record farm impacts.

Our **pea proteins** have a sound sustainability story, too. Peas can be beneficial to agriculture systems when included in crop rotations with other cereals. They fix nitrogen, taking it from the air and converting it to usable fertilizer available in the soil.

As a result, they often require less nitrogen fertilizer, and therefore cause less greenhouse gas emissions.<sup>6</sup> Pea crops can have fewer water requirements compared to many other crops.<sup>7</sup>

## Reliable supply

Across our plant protein portfolio, we leverage our significant global presence and expertise to help ensure a reliable supply and consistent quality. We produce wheat protein at our European processing facilities, which are sustainably supplied with high quality wheat from neighboring regions.



**Investments in plant-based proteins has the highest CO2e savings for invested capital of any sector.”<sup>3</sup>**

*Boston Consulting Group &  
Blue Horizon, July 2022*

## The Cargill advantage

Consumers are hungry for plant-based solutions that meet their nutritional, sensory and sustainability expectations. It's a high bar, but Cargill's experienced application teams can help your product developers navigate formulation challenges, using our proteins to achieve nutrition goals, help meet functional requirements and deliver a winning recipe.

As a global ingredient leader, our portfolio of plant-based protein is complemented by a broad range of nature-derived sweeteners, texturizers and specialties. This allows us to take a holistic approach to formulation, leveraging our deep understanding of the complex interactions between multiple ingredients to help address specific challenges. By combining our world-class formulation expertise with our supply chain reliability, we help you meet the most challenging application goals and marketplace demands.

Find out more about Cargill™ plant proteins at [cargill.com/food-beverage/emea/plant-proteins](https://cargill.com/food-beverage/emea/plant-proteins)

# Product development areas with Cargill™ plant protein

## *Nutritious and delicious*



### DELICIOUS YET DAIRYLESS

Wide range of textures, from liquid, creamy to gel in neutral and acidic conditions with our pea protein.



### MOUTHWATERING YET MEATLESS

Great firmness, meat-like bite, chew, juiciness and mouthfeel provided with our texturized and pea and wheat protein options.



### NUTRITIOUS ALL DAY SNACKING

Great textures, bite, protein content and shelf life stability with our wheat and pea protein.



### ENRICHED LIQUID PLEASURES

Smooth texture, great mouthfeel through our pea protein's good solubility in acidic and neutral drinks.

#### References

<sup>1</sup> Innova Consumer Insights, Europe, 2021

<sup>2</sup> Innova database, 2021

<sup>3</sup> "The Untapped Climate Opportunity in Alternative Proteins," Boston Consulting Group & Blue Horizon, July 2022

<sup>4</sup> "Global Protein Report," HealthFocus International, 2022.

<sup>5</sup> Innova database, 2021

<sup>6</sup> Bokid, 2019 - Pulses for bread fortification: A necessity or a choice? (see p. 418) Lake, 2021 - Pea protein ingredients: A mainstream ingredient to (re)formulate innovative foods and beverages. Tubel 2016 - Pea: A Sustainable Vegetable Protein Crop Lanchan 2021 - Field pea

<sup>7</sup> NITROGEN FIXATION BY PEAS AND THEIR EFFECT ON SOIL FERTILITY (in attachment) From the eBook - The Pea Crop a Basis Improvement (1985) Checking Agriculture's Pulse: Field Pea (Pisum Sativum L.), Sustainability, and Phosphorus Use Efficiency Tubel 2016 - Pea: A Sustainable Vegetable Protein Crop