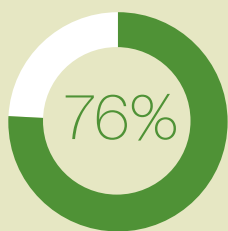




Packing in the Protein in Baked Goods & Snacks

While it may have started as a niche market, in recent years, the high protein trend has gone decidedly mainstream. No longer limited to nutrition bars, product developers are boosting the protein levels in everything from cereal to savoury snacks.



76% of European consumers indicated they have increased (or remained) their protein intake levels in the past 12 months.

Source: Innova research (2021)

“Protein continues to be huge, and we’re seeing that interest spill into a wide range of baked goods – from breads to waffles and about anything in between,” says Peter Velds, Cargill’s Senior specialist Bakery. Protein claims show strong growth across bakery in Europe. Between 2016 and 2021 a CAGR% of 12% could be observed.

Formulating Solutions

It sounds simple enough, but there are a few caveats. While proteins provide nutrition and satiety in snacks and bakery products, there are potential challenges in both formulation and production, mainly in texture, taste and the dough’s machinability.

Managing hydration is often the first formulation hurdle. Proteins tend to hydrate and compete for water, increasing the density of puffed cereals, snacks and baked products.

“All proteins have different water absorption rates,” Velds explains, noting that Cargill has done extensive testing with a wide range of protein types and blends. “We’ve learned how to keep the rheology the same, so that product developers don’t have to dramatically change the amount of water in their formula.”

Velds acknowledges potential obstacles extend beyond water management. Proteins may inhibit dough development and make it stiff and difficult to stretch and sheet, causing headaches on the production line. In addition, some proteins have unique flavors that may be difficult to mask. While these are factors to consider when formulating with added protein, all can be addressed.

“The key to success with protein in baked goods & snacks is finding the right solution or a blend, so it doesn’t impact the taste or texture of the product, or run down the production line,” Velds emphasizes.

Consider flavor. Pea protein, an emerging favorite for bakery formulators, is often associated with a less desirable flavor profile. However, Cargill’s pea protein is not processed with hexane or chemical solvents. This helps to minimize the off-flavors normally attributed to pulses. With that great base flavor profile as a starting point, Cargill’s formulation experts are adept at finding the right protein blend to eliminate off-flavors in bakery applications.

“All proteins require formula adjustments,” Velds acknowledges, “but working with an experienced ingredient supplier can speed the development process.”

Getting Started

With so many choices of protein sources and types, finding the perfect solution may seem overwhelming. As with all new product development efforts, the best place to start is with a clear definition of what you want in the end.

“We’ve often seen confusion from R&D on what they want for protein,” says Peter Velds, Cargill. “Are they talking about total protein, for the front of the package?”

“Pea protein ingredients are separated from the starches and fibers in a wet process with a minimum protein content of 80% on a dry basis. Our pea protein isolates offer more protein nutrition and functionality than their dry-milled counterparts, which is especially beneficial for applications where protein claims and superior texture in bakery & snacks are desired.”

Yves Timmermans, Business Development Manager Proteins, Cargill EMEA

Do they want to be able to make a Protein claim? Part of our job is helping customers understand what the different terms mean and decide what they want to put on the label.

In Europe, to make a protein claim, the amount of energy provided by protein must be calculated on the total formulation. Within a protein product family, protein contents can vary (i.e. isolates may contain approximately 80-90%, concentrates may contain 60-70% and flours around 50%). Therefore a protein isolate will contribute to a larger extent to increase the energy content brought by proteins, hence allowing claims such a ‘Source of Protein’ or even ‘High Protein’.

While Cargill’s pea protein contains all of the essential amino acids, it is not a complete protein because two of the amino acids, methionine and cysteine, are present in insufficient amounts. Cargill offers the possibility to make blends of wheat and pea, which allows to establish improved protein quality by compensating for the restricted essential amino acids levels of each protein alone (lysine in the case of wheat, methionine/cysteine for pea). Blend the two ingredients together in just the right ratio and formulators can take advantage of the functional benefits of the proteins.

Boosting Bakery & Snacks Sales with Protein

Consumers’ attraction to all things protein shows no signs of abating. While they’ll continue to buy high-protein shakes and bars, opportunities exist for innovative bakers and snack producers to capitalize on the trend too in cereals and savory snacks.

The top Bakery & Snacks categories in which protein claims are most observed are Bars (49%) but also increasingly in cereals (13%) followed by savoury snacks (7%).*

New protein ingredient options, led by improved pea protein options, have opened the door for an increase of palate-pleasing, protein-rich baked goods and to match that other trend: gluten-free. Cargill’s experienced bakery application team can help product developers navigate formulation challenges, using creative protein blends to achieve nutrition goals, meet functional requirements and deliver on customers’ expectations.

Contact your account manager for more information or to discuss opportunities.

* Source: Innova database, Europe 2021