



# Pea Protein Positioned to Power Beverage Sales

Protein beverages are no longer exclusive to the sports nutrition market. Today, consumers from all walks of life are jumping on the protein bandwagon. Whey and soy proteins still dominate the beverage aisle, but there's a growing appetite for alternatives. Driven by allergen concerns and increasing demand for non-GMO products, a new crop of plant proteins is attracting consumer attention as never before.

As product developers sort through the onslaught of emerging plant proteins, the humble yellow pea is becoming the vegetable protein of choice. A key factor is its broad consumer appeal.

"Consumers recognize and understand pea protein," explains Paige Ties, a beverage application and protein formulation expert with Cargill. "It's a plant protein that's non-allergenic, vegan-friendly and non-GMO. Compare pea protein to today's biggest consumer trends, and it checks all the boxes."



Beyond the protein's label-friendly nature, beverage makers also find value in its functionality. Pea protein is more soluble than most botanical proteins, making it easier to keep in suspension. Still, even within the same protein source, product developers often find differences in attributes like solubility and flavor profiles.

"From a formulators' perspective, PURIS™ pea protein has two huge advantages," Ties emphasizes. "It's more soluble, so it's easier to create beverages that meet consumers' expectations for visual appearance and mouthfeel. Then there's PURIS™ protein's great taste."

Consumers may want label-friendly options, but it's great taste that sparks repeat purchase. Many of the emerging plant proteins bring along a host of flavor challenges, including astringency and bitterness. PURIS™ pea protein, available from Cargill, is decidedly different. It's sourced from non-GMO\* yellow pea seed varieties which are specially selected to minimize the off-flavors normally attributed to pulses. In addition, it's made with a focus on bringing out the best flavor possible. Extensive sensory testing and positive customer feedback support the company's flavor claims.

"We've completed quality descriptive analysis testing with panelists who were trained in vegetable protein flavor attributes. They compared our pea proteins with our competitors' to identify the key flavor, aroma and texture attributes on a 9-point scale. Our customers have also done their own comparison testing," Ties explains. "Consistently, PURIS™ pea protein comes out on top."

*continued*

## Formulation Tips

While pea protein may not be a fit for every beverage type, Ties says it's well-suited for both neutral and low-pH applications.

"Pea protein really got its start with neutral pH beverages like alternative milks, dry protein powders and ready-to-drink meal replacements," she explains. These beverages typically have a pH of 7, far above pea protein's isoelectric point, which ranges from 4.5 to 5. (The farther a beverage's pH is from a protein's isoelectric point, the easier it is to keep the protein in suspension.)

In the rapidly growing alternative milk category, pea protein offers beverage makers a way to replace soy with an alternative plant-sourced protein. The dry protein powder segment is another sizable market. Here, product developers often aim for mid-level protein fortification, with products boasting from 5 to 8 grams of protein per serving. In the ready-to-drink meal segment, product developers push protein levels even higher – but the resulting beverages still have to taste great.

"The more protein you add, the more challenges you'll face," Ties notes. "However, even at levels as high as 30 grams of pea protein in a 15.2-ounce serving, we've seen developers create products that still meet consumers' taste and other sensory requirements."

The low-pH applications – smoothie-style beverages with some fruit in the mix – present formulators with a few more technical difficulties. The challenge lies in the chemistry. In these acidic applications, pH levels are much closer to the isoelectric point of pea protein, causing the protein to precipitate out of solution.

"The most common complaint consumers have with these beverages is grittiness," Paige explains. "But if you use the right ingredients to protect and suspend your proteins, you can achieve the smooth mouthfeel consumers expect."

To make this possible, Cargill developed pectins specifically designed to surround the protein molecule, preventing it from breaking down and keeping it in solution. Cargill's pectins, sometimes used in combination with gellan gum or carrageenan, help maintain mouthfeel and prevent protein sedimentation throughout the product's shelf life.

## HERE TO STAY

"Consumer demand for protein is here to stay, but its mainstream appeal comes with uncompromising expectations for great taste and texture," she emphasizes. "At Cargill, we're a one-stop shop for protein, texturizing solutions and application expertise. We understand the market and the technical challenges inherent in protein formulation, and we can help customers create protein beverages that keep consumers coming back for more."

\* See Cargill.com for more information on how Cargill defines "non-GMO."

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