



**UNLOCKING THE
ACID-STABLE
PROTEIN FRONTIER
WITH PURIS HILO**



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FINALLY, A WAY TO ADD **PLANT PROTEIN** TO ACIDIC PRODUCTS

With consumers demanding healthier, more functional products, the need for innovative protein solutions has never been greater.

Enter PURIS HiLo, a game-changing, acid-stable pea protein poised to revolutionize the way food and beverage manufacturers approach product development in acidic applications.

If you've ever wanted to add protein to fruit or energy drinks, baby food, frozen desserts, or sauce but struggled with mixing, mouthfeel, or taste, HiLo is the answer to your struggles.

Let's explore what's possible with this trailblazing ingredient (and examine how it fills a gap in an evolving market while meeting growing consumer demands).

**IMAGINE THIS
FORTIFIED
WITH PROTEIN**



AND THIS...

AND THIS...



THIS TOO!

PURIS HiLo will be the not-so-secret ingredient in hundreds of trailblazing, protein-fortified food and beverage products.

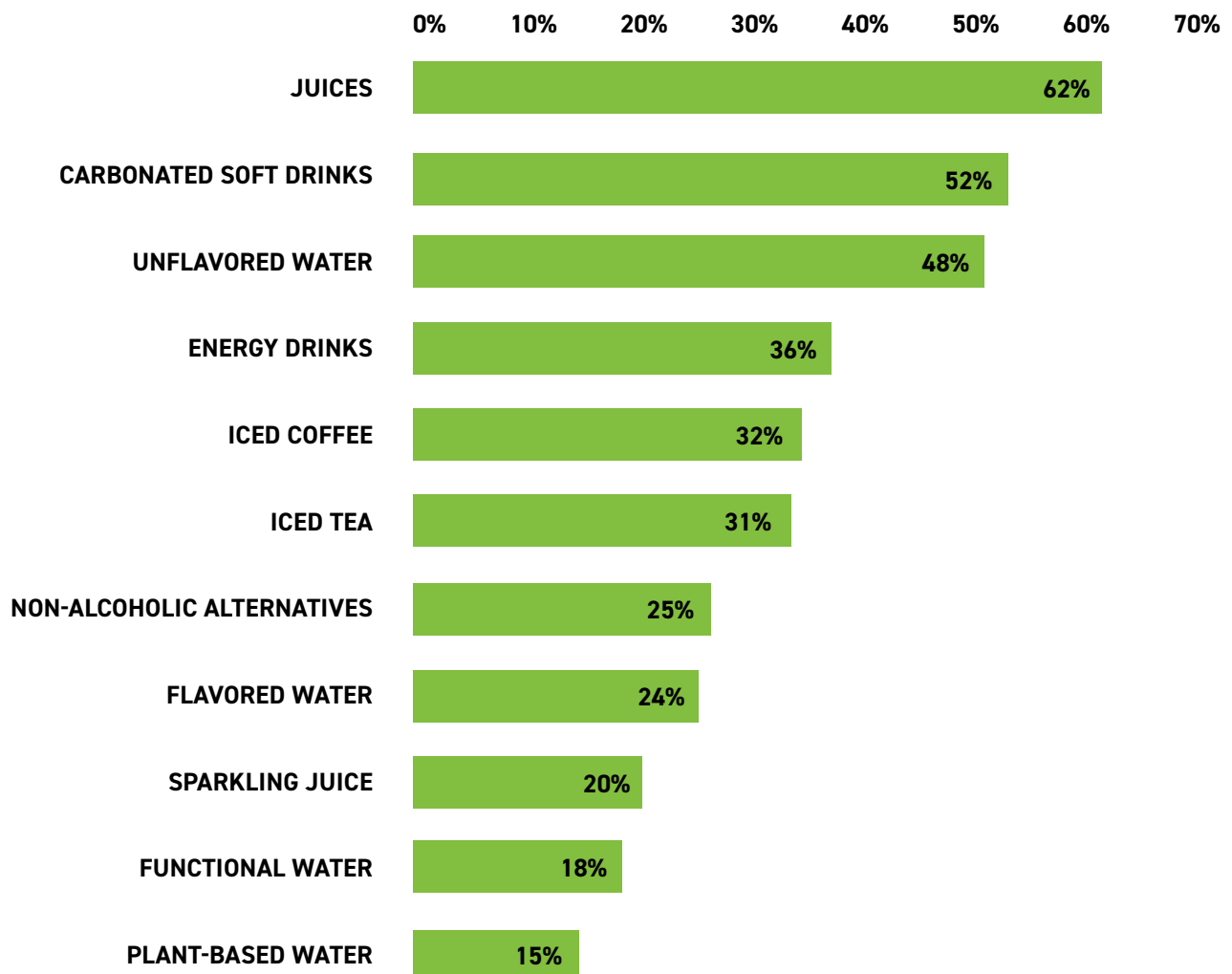
MARKET INSIGHTS

THE ACIDIC PRODUCTS MARKET IS BOOMING

The global market for acidic products, from sports and energy beverages to sauces and baby foods, is experiencing exponential growth. In fact, key growth areas include energy drinks, baby food, frozen desserts, and sauces.

However, the incorporation of protein into these acidic formulations has been limited (only 2.3% of all launches), creating a white space in the market that is full of opportunities to bring consumers the best of both worlds: the acidic products they want, fortified with protein they can trust.

Juices are the top cold beverage global consumers purchase





THE ACIDIC PRODUCTS MARKET: Where We're at Today

PRODUCT GAP CREATES OPPORTUNITIES IN THE MARKET:

204,000

NEARLY 204,000 ACIDIC PRODUCT LAUNCHES WERE RECORDED BETWEEN 2018 AND 2023

However, only 4,602 acidic product launches (about 2.3% of the total) contained protein

MARKET POTENTIAL IS ONLY GROWING:

\$25B

Sports drinks sales are projected to be worth \$25B by 2027 (with production volume of >17B liters)

33%

The U.S. makes up 33% of global sales and 43% of global volume of sports drinks

39%

The U.S. makes up 39% of global sales and 37% of global volume of energy drinks

\$130B

Juice sales and production continue to grow, reaching nearly \$130B in value and >85B liters of production in 2023

\$30B

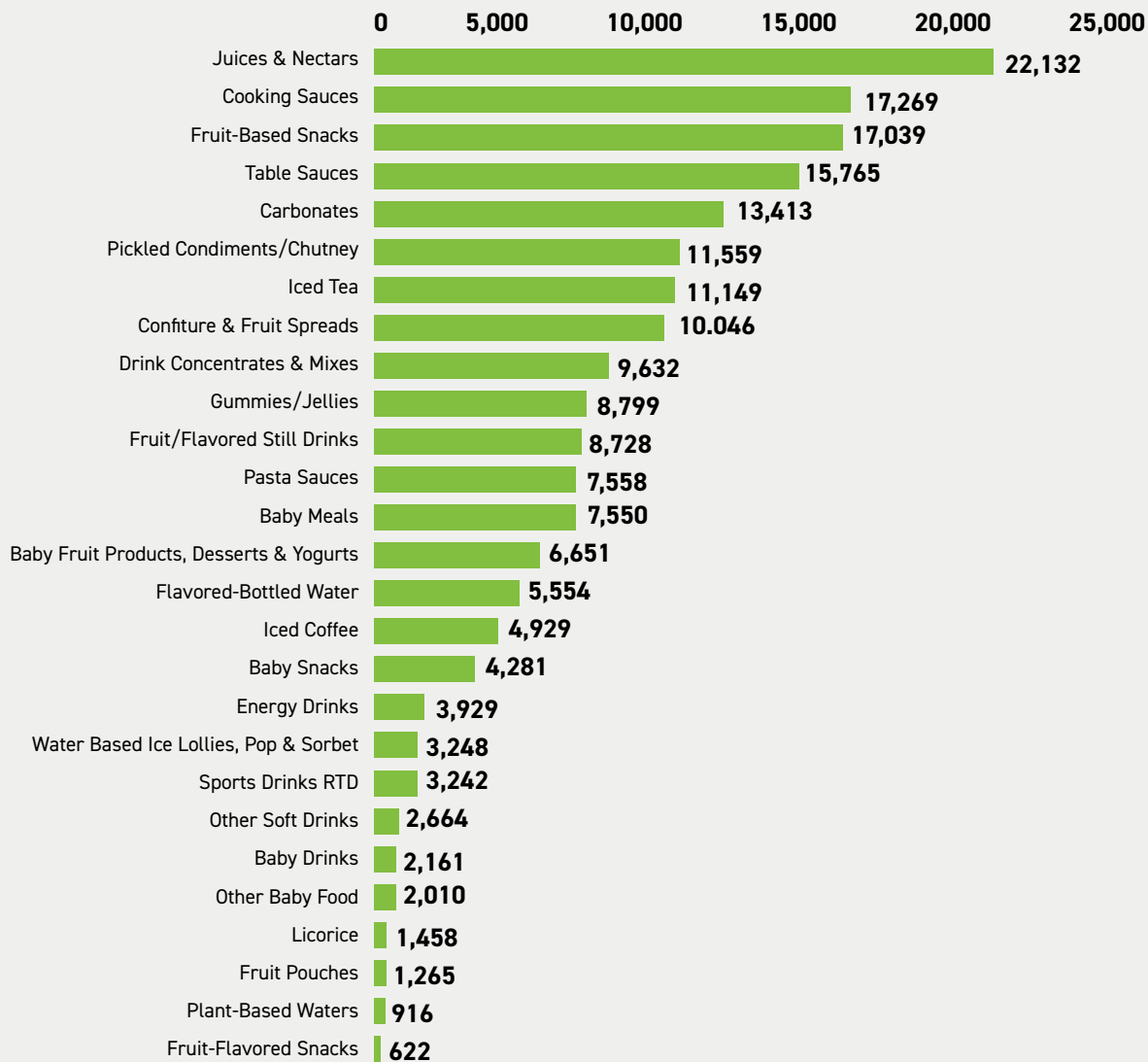
The U.S. leads juice sales (\$30B) followed by China (~\$21B)

OPPORTUNITY: HIGH-ACID PRODUCTS WITH PROTEIN FORTIFICATION

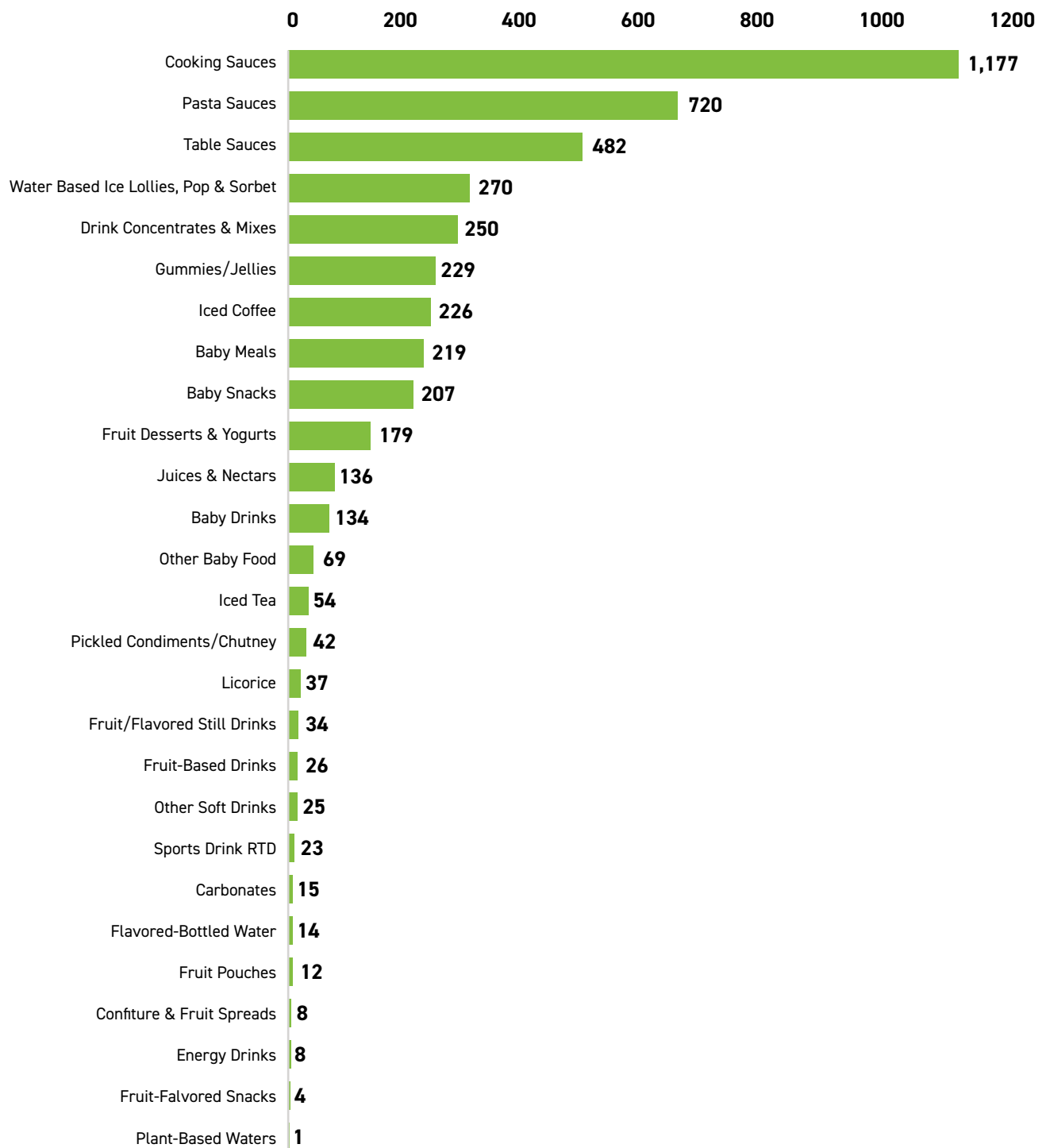
The market data tells a story of untapped potential – while the global demand for acidic products like sports drinks and energy beverages continues to skyrocket, the inclusion of protein in these formulations remains surprisingly limited.

This presents a prime opportunity for innovative protein solutions that thrive in low-pH environments. The charts below shed light on the compelling white space waiting to be filled.

High-Acid Product Launches (2018–2023)



New High-Acid Product Launches Containing Protein Ingredients (2018–2023)



It's worth noting that only 2.26% of all acidic product launches (food and beverage combined) contained added protein ingredients. However, nearly 80% of these launches were in the food category, including sauces, sorbets, baby meals/snacks, gummy snacks/confections, and fruit spreads.

PROTEIN USED IN PROTEIN-FORTIFIED ACIDIC PRODUCTS

Dairy-based proteins might be leading the protein-fortified acidic market, but plant-based options are closing the gap quickly. With proteins like HiLo changing the game, it's possible to create smooth, delicious, plant-based options that consumers will want to try (and buy again).

TYPE OF PROTEIN	% OF PRODUCT LAUNCHES
-----------------	-----------------------

Milk protein (other, concentrate)	40.76%
-----------------------------------	--------

Soy protein (other, hydrolysate, isolate)	26.40%
---	--------

Vegetable protein	20.86%
-------------------	--------

Pea protein (other, hydrolysate, isolate)	20.08%
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CONSUMER INSIGHTS

CONSUMER DEMAND IS GROWING

The consumer demand for protein-fortified products has never been stronger. Across a range of categories, from sports nutrition to energy drinks, today's health-conscious consumers are actively seeking out functional ingredients that can deliver on both taste and nutrition.

of consumers selected protein as a "most important ingredient" in their food/beverages

42%

of consumers seek out high in/source of protein claims in their sports/functional nutrition products

27%

of consumers stated they are influenced by taste/flavor when consuming energy drinks, making it the most impactful factor (more than cost or brand)

53%

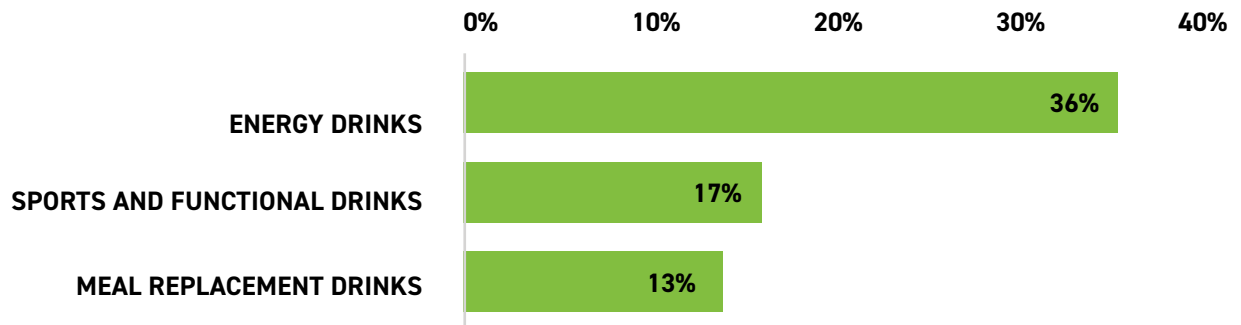
of consumers use protein products before/during/after exercise

69%

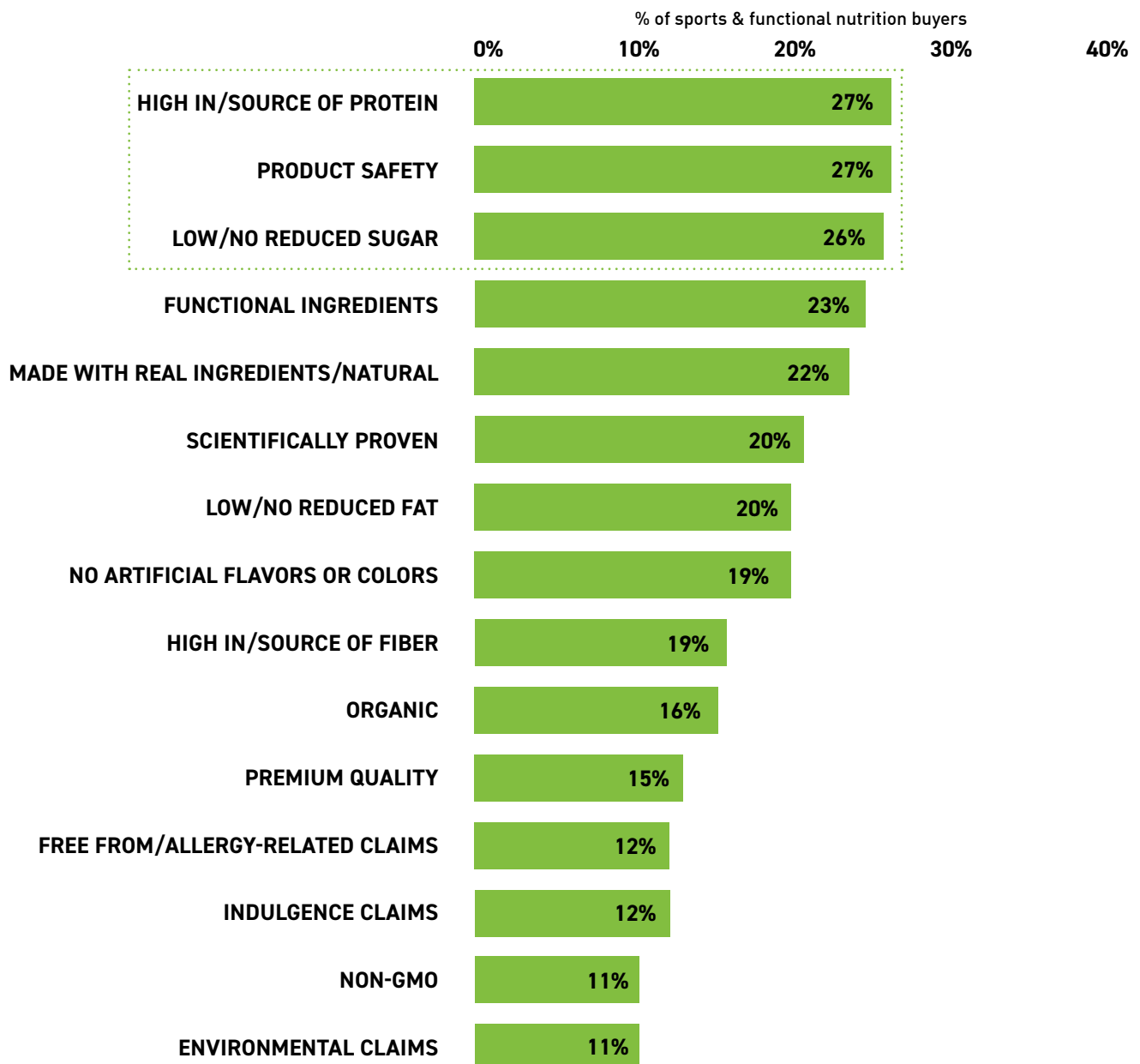
of consumers use hydration products before/during/after exercise

77%

Products Consumers Have Purchased in Past 12 Months



What Consumers Seek When Consuming Sports and Nutritional Products



High-Acid Products Containing Plant Protein Could Attract New Audiences

Gen Z is beginning to **reshape consumer behaviors** with a focus on health, wellness, sustainability, and ethical sourcing. And they're becoming known for their interest in functional drinks that offer health benefits.

Directing plant-based products to this emerging demographic of consumers will help create lifelong brand loyalty. It is also giving food and beverage companies the chance to be trailblazers and gain the attention of these consumers.

The Consumer Convenience Factor

U.S. consumers value convenience more than the global average. This means they're more likely to grab an all-in-one solution (protein + energy) than to buy two separate products (protein drink + energy drink).

Products that offer consumers the best of both worlds, such as an "all-in-one" approach, are more likely to encourage purchase, especially from unfamiliar brands.



THE APPEAL OF HEALTH-CENTRIC, FORTIFIED BEVERAGES

Consumers are increasingly seeking healthier and more functional products to support their well-being. The ability to fortify acidic products with protein provides a valuable opportunity to meet this growing consumer demand.

Specifically, consumers are looking for the following when it comes to beverages.



Leading claims in energy drinks, sports drink RTDs, and sports protein drink RTDs

- **Source of protein**
- **Low sugar**
- **No additives**
- **Vegan/vegetarian**
- **Gluten-free**
- **Non-GMO**

REFRESHING TASTE

Fruit-flavored beverages often provide a refreshing and revitalizing taste. The natural sweetness of fruits adds a burst of flavor that appeals to many consumers, making these drinks a popular choice, especially in warm weather.

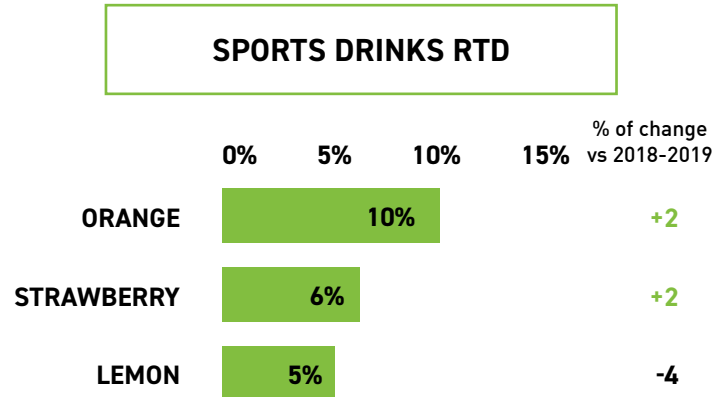
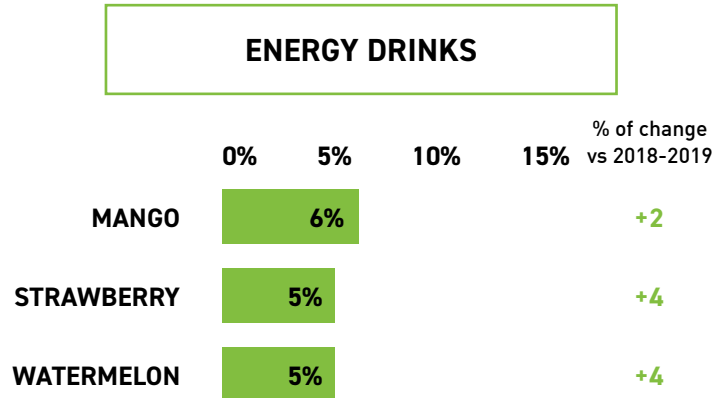
ASSOCIATION WITH NATURAL INGREDIENTS

Fruit flavors are often associated with natural ingredients, contributing to the perception that these beverages are a healthier choice. Consumers are increasingly looking for products that align with a natural and clean label.

VARIETY OF FLAVORS

There is a wide variety of fruit flavors available, ranging from classics like orange and apple to more exotic options like mango or passion fruit. This diverse selection allows consumers to choose beverages that align with their taste preferences.

Top Flavors by Segment (2022-2023)



**HEALTH
PERCEPTION**

Many consumers perceive fruit-flavored beverages as a healthier alternative to sodas or sugary drinks. Even if the beverage contains added sugars, the presence of fruit flavors may create a perception of a more natural and wholesome option.

HILO PEA PROTEIN

WHY HILO PEA PROTEIN?

Traditionally, plant proteins have been incompatible in acidic recipes due to protein precipitation, which creates an extremely chalky mouthfeel. PURIS HiLo is changing the game by creating a solution for protein fortification in acidic beverages and foods.

HiLo Bragging Rights



PROTEIN



LOW VISCOSITY



HIGH SOLUBILITY



CLEAN, SMOOTH TASTE
— NO CHALK



STABILITY IN ACIDIC
ENVIRONMENTS

**LET'S DIVE INTO THE DIFFERENT BENEFITS
HILO CAN BRING TO YOUR PRODUCT LINEUP.**

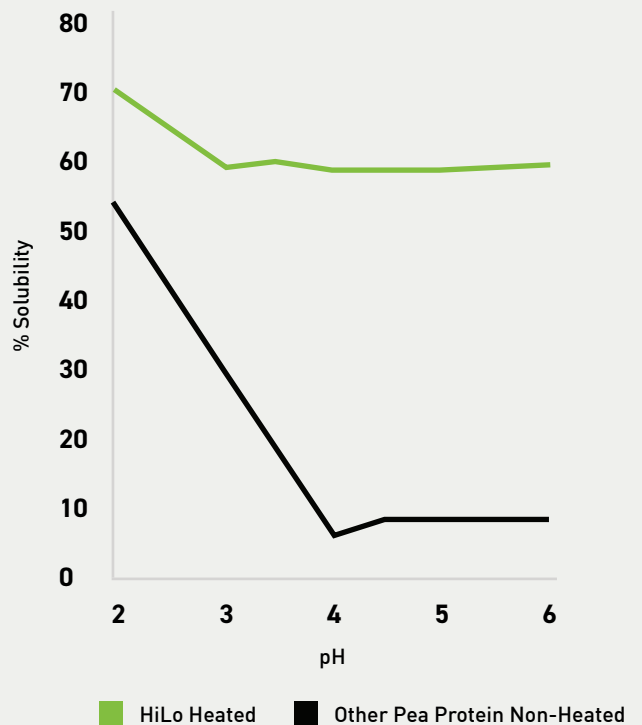
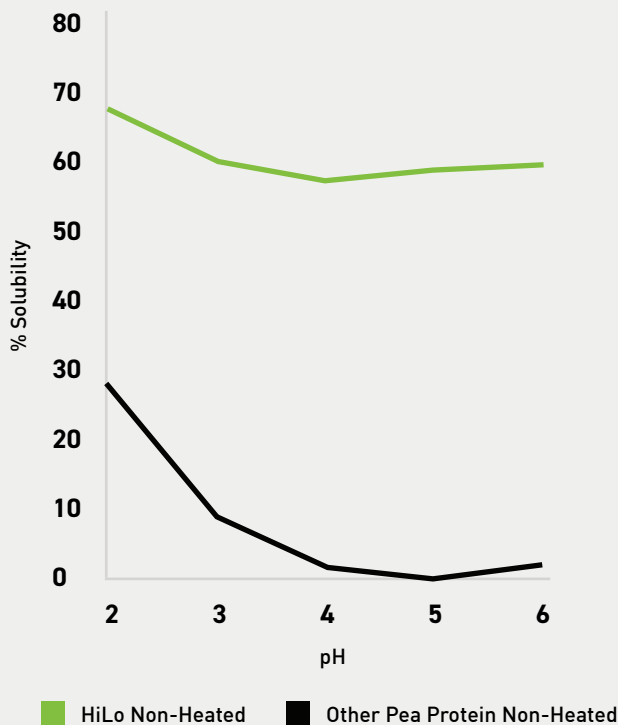
SUPERIOR ACIDIC SOLUBILITY

Unlike ordinary pea proteins, PURIS HiLo maintains exceptional solubility even at acidic pH levels, ensuring smooth, homogeneous incorporation into acidic beverages, foods, and more. Analytical data showcases PURIS HiLo's superior solubility across a wide pH range, even in highly acidic environments.

HiLo not only surpasses standard pea proteins in solubility but also demonstrates a remarkable and consistent solubility profile across pH.

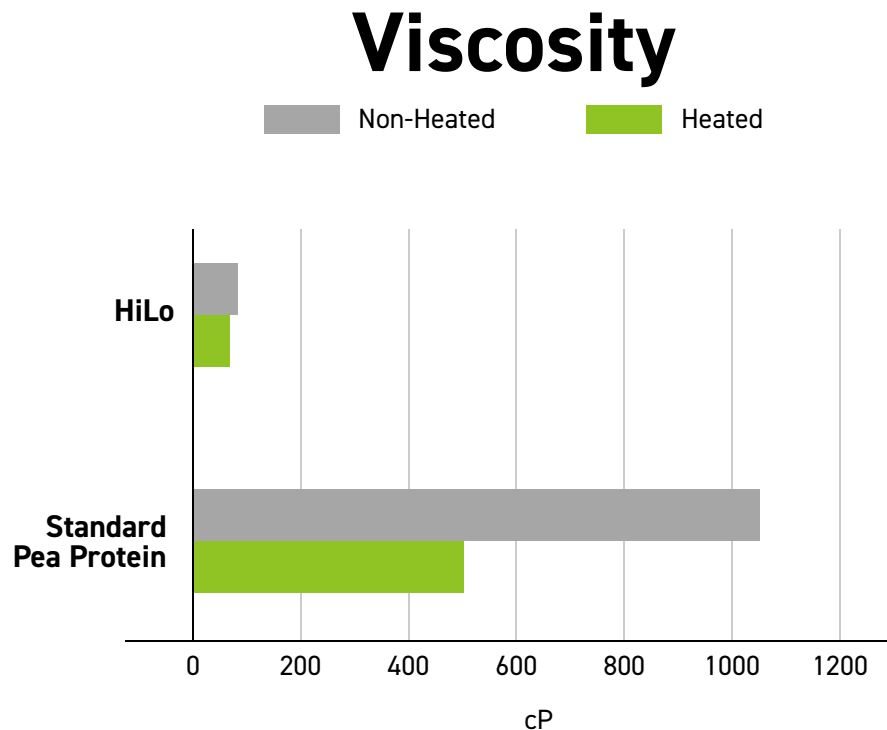
Note: That means you could put this protein into apple sauce or fruit pouch products and still have a smooth, soluble protein experience!

pH SOLUBILITY CURVES OF HILO AND A STANDARD PEA PROTEIN



LOW VISCOSITY

PURIS HiLo's low viscosity profile ensures easy processing and a desirable mouthfeel without disrupting the final product's intended texture. Comparative viscosity measurements demonstrate the low viscosity profile of PURIS HiLo compared to other pea protein options.



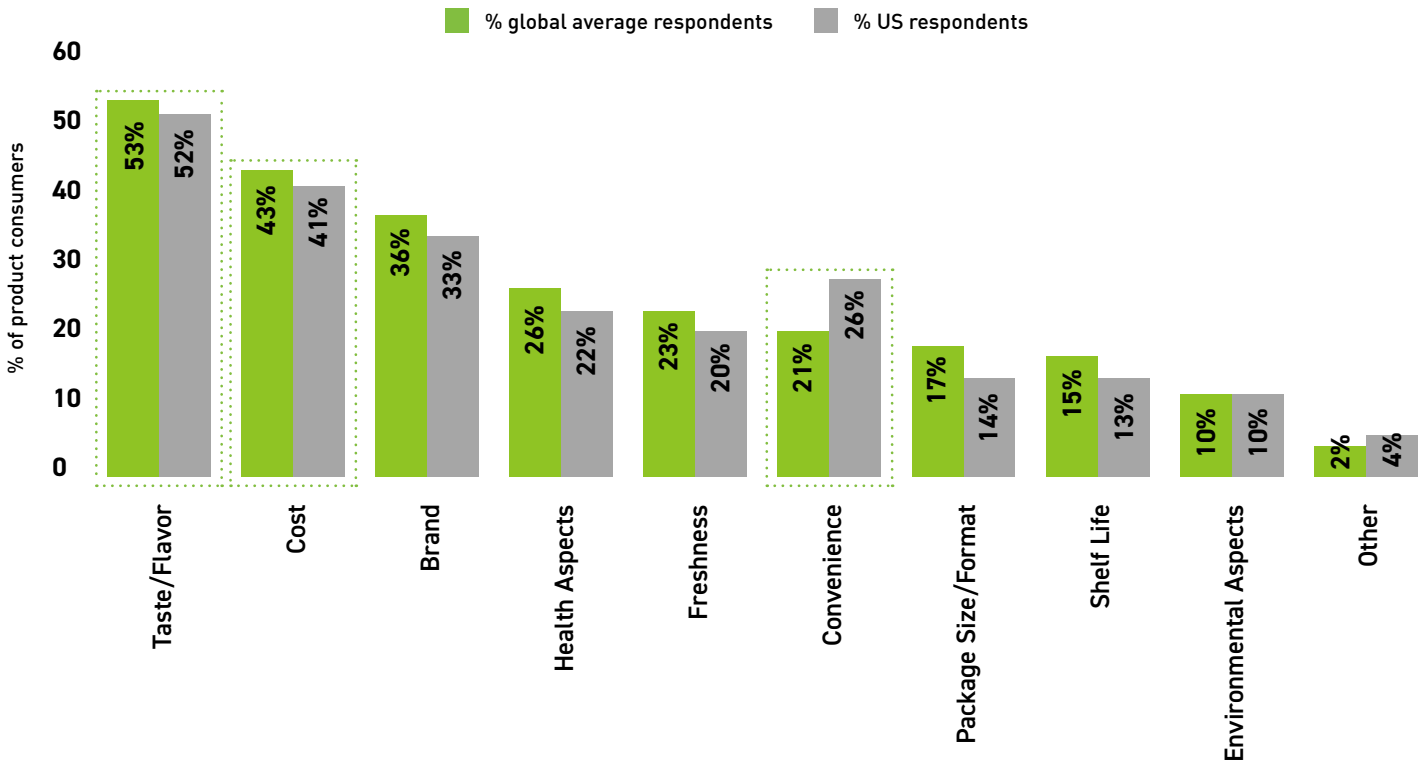
MINIMAL COLOR IMPACT

For opaque products, HiLo has a minimal **impact on product color**, preserving the finished item's vibrant and appealing appearance. Visual comparisons and analytical data highlight this.

TASTY, SMOOTH PRODUCTS

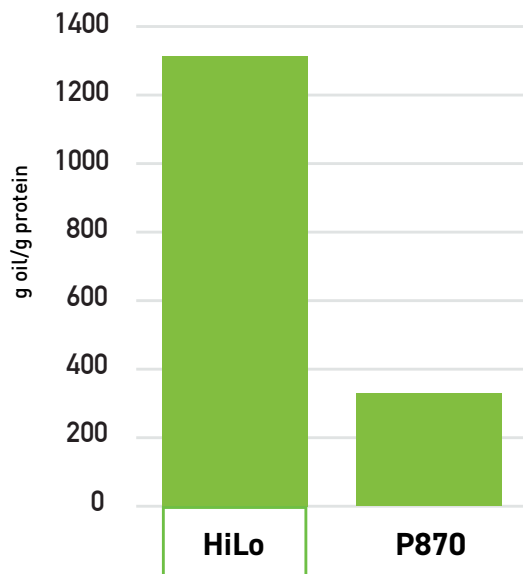
48% of consumers purchase juices, juice drinks, and smoothies because they're tasty. HiLo takes consumer experience to another level with its untraceable mouthfeel and superior mixability.

Energy Drink Attributes That Most Influence Purchasing Decisions



EMULSIFICATION CAPACITY

Say goodbye to gritty protein beverages. With its high emulsification capacity, HiLo seamlessly integrates into formulations, delivering exceptionally smooth texture, functionality, and nutritional value.



ACCESSIBILITY

Consumers who battle intolerances and allergies struggle to digest dairy-based proteins such as whey. But PURIS's pea protein gives these consumers a high-protein alternative that is easily digestible and meets a wide range of dietary needs and criteria.



VEGAN



KOSHER CERTIFIED



NON-GMO



SOY-FREE



GLUTEN-FREE



SOLVENT-FREE



AVAILABLE IN GLYPHOSATE
FREE ORGANIC



HILO ACIDIC APPLICATIONS: BEVERAGES, BABY FOODS, AND MORE



The versatility of PURIS HiLo goes beyond the beverage market, opening up new opportunities for protein fortification in a wide range of acidic products, including:



IMAGINE WHAT YOU COULD MAKE

When you bring HiLo into your manufacturing plant, the doors are wide open. Check out these example products, all possible with HiLo pea protein.

PROTEIN + HYDRATION RTD BEVERAGE



PROTEIN + HYDRATION RTD

Blueberry Ginger / Grapefruit Ginger

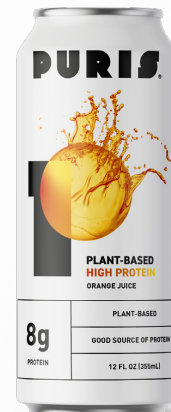
Nutrition Facts	
Serving size	12 fl oz (354g)
Amount per serving	
Calories	35
	% Daily Value*
Total Fat 0.5g	1%
Saturated Fat 0g	0%
Trans Fat 0g	0%
Cholesterol 0mg	0%
Sodium 55mg	2%
Total Carbohydrate 1g	0%
Dietary Fiber 0g	0%
Total Sugars 1g	0%
Includes 0g Added Sugars	0%
Protein 6g	
Vitamin D 0mcg	0%
Calcium 48mg	4%
Iron 1mg	6%
Potassium 19mg	0%

*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Water, Pea Protein (PURIS HiLo), Pectin, Citric Acid, Monk Fruit Juice Extract, Stevia, Natural Color (Sensient), Natural Flavor (Sensient), Spirulina, L-Malic Acid, Ginger Extract.

Bring a protein and hydration hybrid beverage to market, fulfilling two common consumer demands and giving users ultimate convenience.

HIGH-PROTEIN JUICE BEVERAGE



HIGH-PROTEIN

Orange Juice

Nutrition Facts	
Serving size	8 fl oz (240g)
Amount per serving	
Calories	130
	% Daily Value*
Total Fat 1g	1%
Saturated Fat 0g	0%
Trans Fat 0g	0%
Cholesterol 0mg	0%
Sodium 60mg	3%
Total Carbohydrate 24g	9%
Dietary Fiber <1g	2%
Total Sugars 20g	0%
Includes 0g Added Sugars	0%
Protein 8g	
Vitamin D 0mcg	0%
Calcium 75mg	6%
Iron 2mg	10%
Potassium 483mg	10%

*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Orange Juice, Pea Protein (PURIS HiLo), Natural Flavor (Sensient), Gellan Gum, Beta Carotene (for color) (Sensient).

Give consumers the chance to grab protein fortification on the go. And with juices standing out on store shelves as a healthier option than sodas, you'll attract a wider audience, even with added sugar products.

**PROTEIN + HYDRATION
RTD BEVERAGE**



PROTEIN + HYDRATION RTM

Blue Raspberry Flavor

Nutrition Facts

Serving size	(10g)
Amount per serving	
Calories	30
% Daily Value*	
Total Fat 0.5g	1%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 110mg	5%
Total Carbohydrate 1g	0%
Dietary Fiber 0g	2%
Total Sugars <1g	
Includes 0g Added Sugars	0%
Protein 5g	
Vitamin D 0mcg	0%
Calcium 45mg	4%
Iron 1mg	6%
Potassium 44mg	0%

*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Pea Protein (PURIS HiLo), Evaporated Coconut Water (InVico), Citric Acid, Natural Flavor (Virginia Dare), Salt, Sodium Citrate, Spirulina (for color) (Sensient), Stevia, Monk Fruit Juice Extract.

Bring a protein and hydration hybrid beverage to market, fulfilling two common consumer demands and giving users ultimate convenience.

**HIGH-PROTEIN
APPLESAUCE POUCH**



HIGH PROTEIN

Applesauce

Nutrition Facts

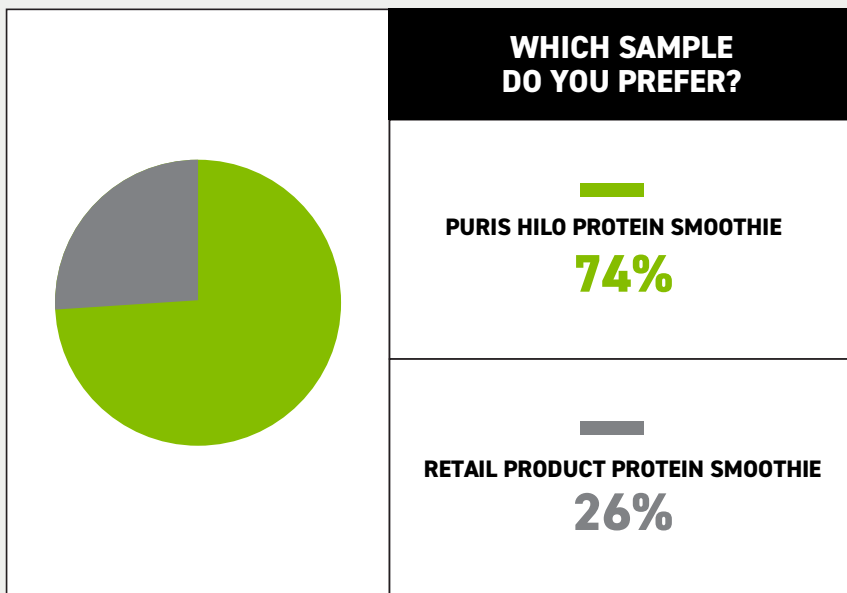
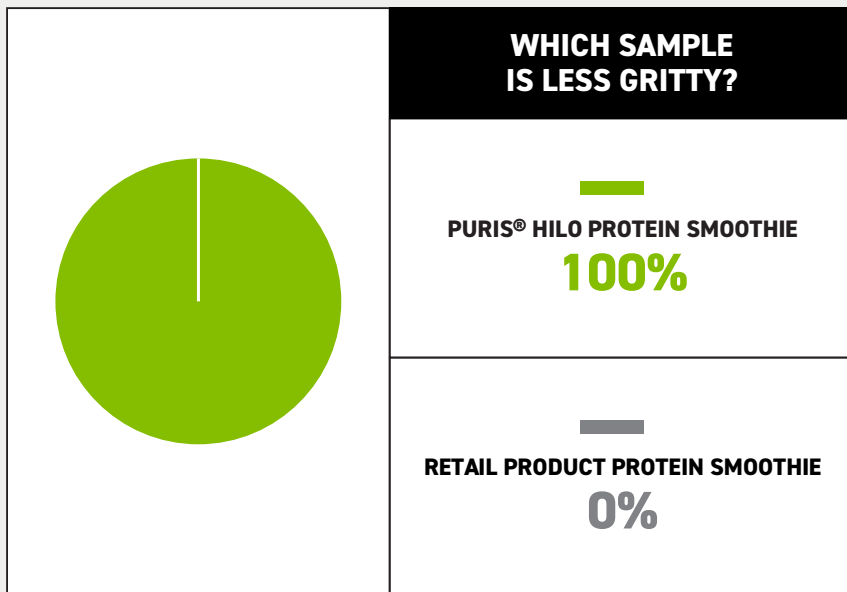
Serving Size	4 oz (120g)
Amount Per Serving	
Calories	110
% Daily Value*	
Total Fat 1g	1%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 75mg	3%
Total Carbohydrate 17g	6%
Dietary Fiber 3g	11%
Total Sugars 11g	
Includes 0g Added Sugars	0%
Protein 9g	
Vitamin D 0mcg	0%
Calcium 72mg	6%
Iron 3mg	15%
Potassium 151mg	4%

Make baby and toddler pouches even more appealing with protein fortification. Free from the top allergens and boasting a smooth texture. HiLo makes it easy to sell to even the pickiest of eaters, keeping parents coming back for more time and time again.

CONSUMER INPUT: TASTE-TESTING SAMPLE STUDY

In a statistically significant sensory panel, a protein smoothie made with PURIS HiLo was compared to a protein smoothie retail product made with other plant proteins.

The results? 100% of participants found PURIS HiLo less gritty than the retail product, and 74% preferred the smoothie containing PURIS HiLo.



PRODUCTS THAT ARE GOOD FOR
CONSUMERS AND THE WORLD

SUSTAINABLE PRODUCT CLAIMS

Consumers are looking for healthy and functional products that align with their values around sustainability and environmental responsibility.

As a plant-based, non-GMO, and environmentally friendly protein source, PURIS HiLo checks all the boxes for conscious consumers.

Using HiLo, manufacturers can appeal to the growing segment of shoppers who prioritize sustainable and clean-label options.

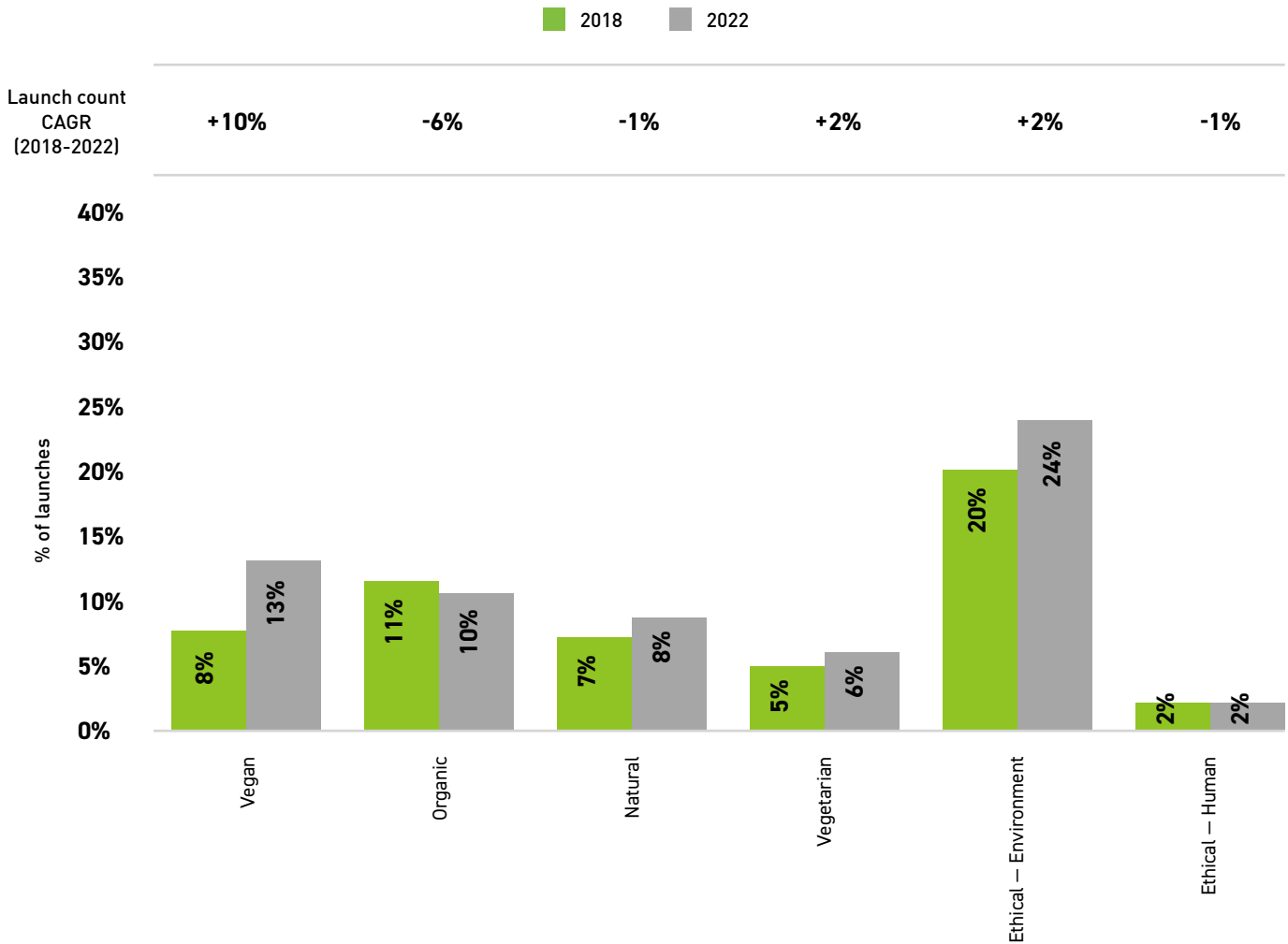
45% of consumers surveyed look to label data on sustainability when choosing which product to buy.



45%

Consumers Want More Than Just Healthy Products

ENVIRONMENT CLAIMS RISE AS MANUFACTURERS POSITION JUICES AS HEALTHY OPTIONS



*Emerging claims rose from less than 1% of launches in 2018 to 1% or more in 2022

FRESH, LOCAL INGREDIENTS MATTER

CONSUMER SURVEY: Which Product Features Are Worth Paying More For (Food and Beverage)?



FRESH PRODUCTS



LOCALLY PRODUCED



FUNCTIONAL INGREDIENTS

Sources: Innova Lifestyle & Attitudes Survey, 2022; Innova Category Survey, 2023

KEY HILO INGREDIENT TAKEAWAYS

GIVE CONSUMERS SOMETHING THEY'VE NEVER SEEN BEFORE

For years, traditional protein sources like whey, vegetable protein hydrolysate, and soy protein have been used to add protein to acidic products. However, each of these options comes with its own set of taste and functional challenges.

HiLo allows consumers to enjoy the healthier, high-protein, low-sugar, natural ingredients they crave, even in low-pH applications.



Why PURIS Ingredients?

PURIS is a trusted leader in the plant-based protein industry, known for its commitment to quality, innovation, and sustainability. With PURIS HiLo, you're not just getting a superior functional ingredient — you're also partnering with a brand that shares your values and is dedicated to driving positive change in the food and beverage landscape.

By choosing PURIS, you can feel confident that you're offering your customers products that are good for them and good for the planet.



PURIS™

UNLOCK THE ACID-STABLE FRONTIER

PURIS HiLo represents a breakthrough in acid-stable proteins, offering unparalleled functionality, versatility, and market potential. This innovative ingredient is poised to redefine the way we think about protein fortification and product development by unlocking new possibilities in the rapidly expanding acidic product landscape.

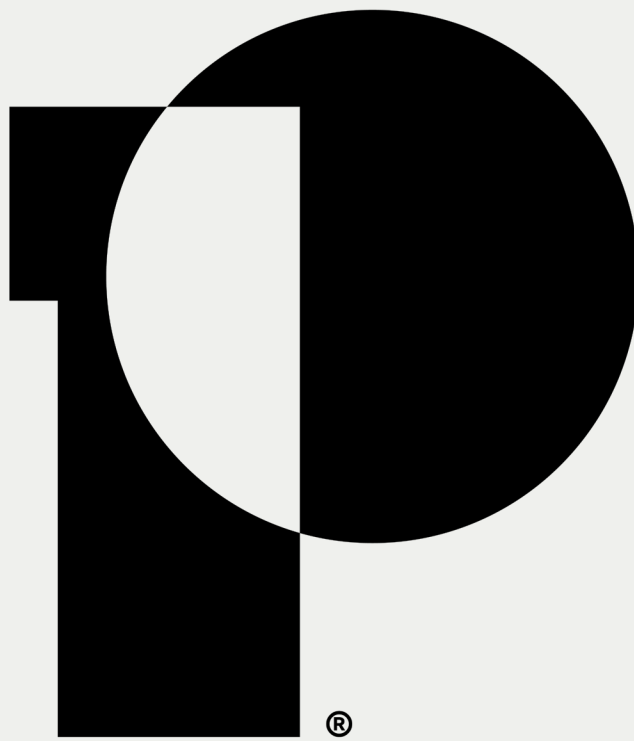
Discover the transformative power of PURIS HiLo and explore how it can elevate your product formulations to new heights of success. This comprehensive ingredient report has provided the insights and proof points you need to unlock the future of acid-stable protein solutions.

Get in touch with us today to request a HiLo sample and talk about your next big product.

[REQUEST YOUR HILO SAMPLE](#)

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