



INSIGHTS REPORT:

Plant-boosted beverages:

Blending health & indulgence

Consumers today demand more from their beverages and manufacturers must follow suit to meet today's and tomorrow's demands.

Two major ongoing trends are the rise of plant-based options and health. The latter can be achieved through both proactive fortification (i.e. active health), or the reduction in fat, sugars, and calories (i.e. passive health).

This explains the rise in **functional beverages**. These drinks target a particular need-state rather than being consumed only for taste or refreshment. Two out of three consumers also expect functional and/or health benefits from the drinks they choose, according to a recent Innova study.* These benefits range from increased energy and alertness to fortification, weight management, and different health advantages like improved immune, digestive, and gut health as well as pre- and probiotics.

Beverage manufacturers are responding to these needs, as evidenced by the sharp increase in product launches with functional and/ or health claims.

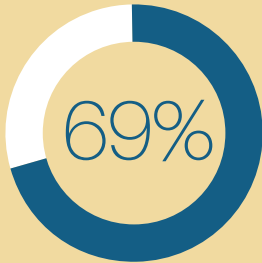
But regardless of what your plant-based or healthier reformulation strategy is, it must be achieved without sacrificing on taste or texture. After all, consumers expect a similar enjoyment from a healthier plant-based dairy alternative, as they would have got from their favorite cocoa milk from their childhood.

* Source: Innova – Soft drinks trends in Europe, 2022



SUGAR REDUCTION IS STILL A TOP PRIORITY

Concern over sugar and sweeteners continues to have a considerable impact on consumer behavior, in contrast to many other food and beverage product concerns that come and go. Reducing sugar is considered as the **most effective strategy to make processed foods and beverages healthier**,* surpassing other important attributes connected to:



69%
of consumers who look at nutritional information, are extremely/ very likely to check sugar levels.

Source: Cargill, IngredienTracker™, 2022, Europe, 6 markets, ~4000 consumers



Clean eating

(reduced preservatives, natural, less artificial, organic, non-GMO, etc.)



Removing negatives

(removing negative ingredients, etc.)



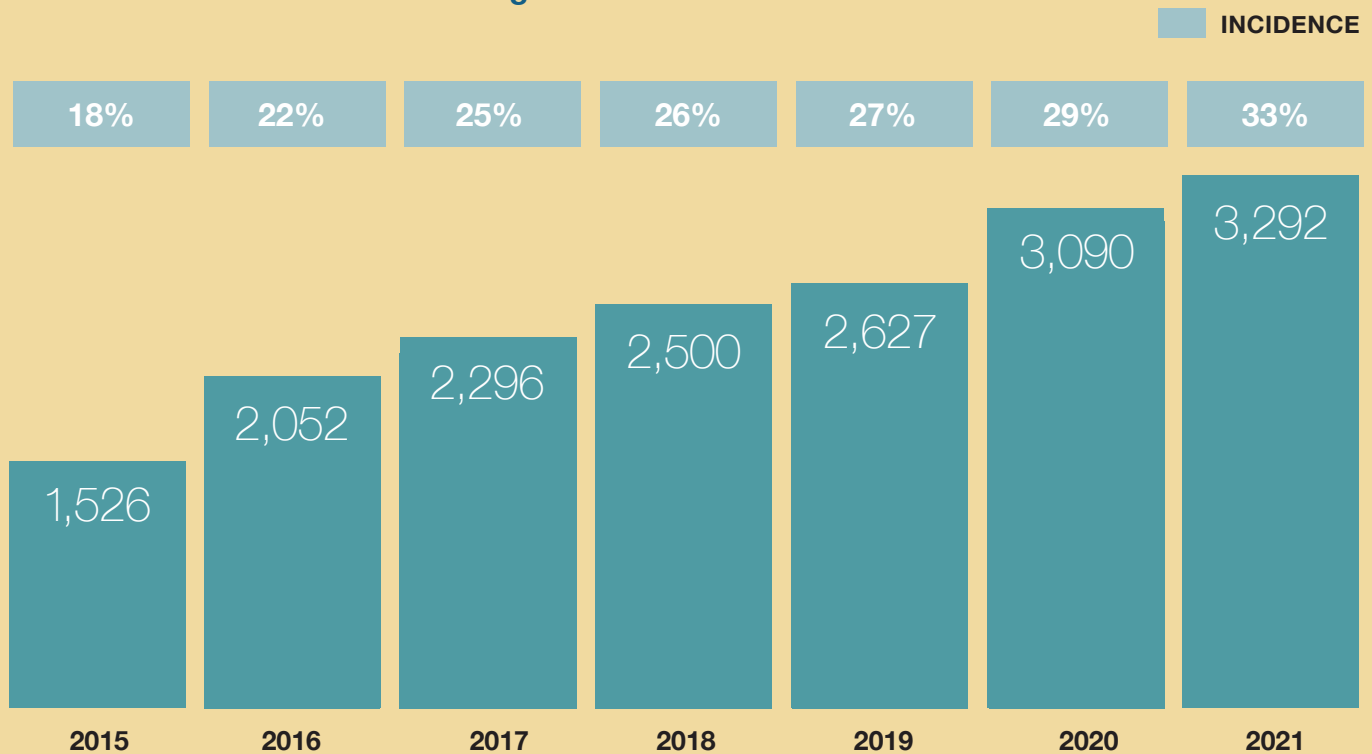
Adding positives

(healthier ingredients, fortification, etc.)

* Source: HealthFocus, Sweetener Solutions, 2022

This explains the continued growth of beverages with reduced sugars content; according to data from Innova, 33% of NPD in 2021 already contained a sugars claim, up from only 18% in 2015.

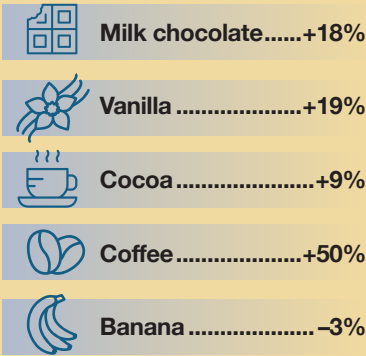
Number of drink launches with sugar claims*



* Sugar claims: No added sugar; Low sugar; Sugar-free

Source: Innova 2021, Soft drinks (excluding unflavored bottled water), Sports and Dairy drinks, Europe

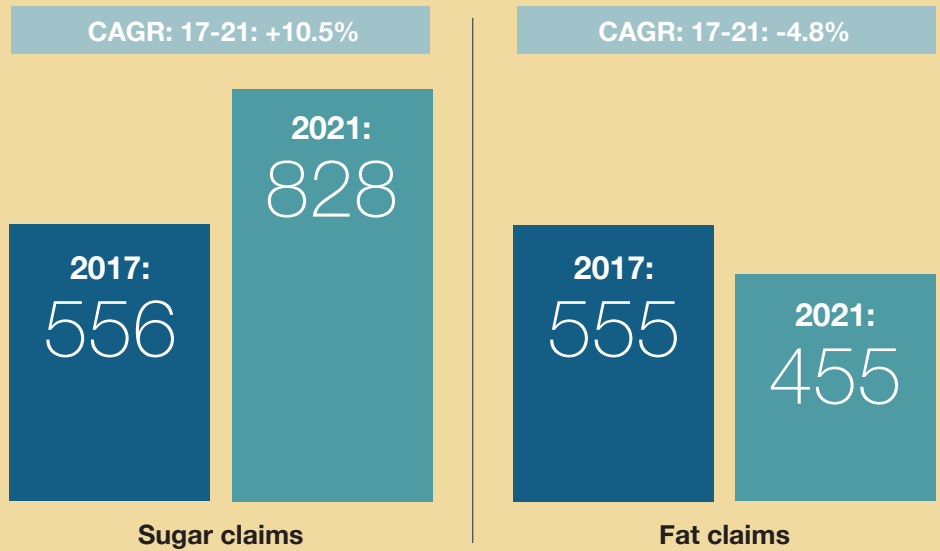
TOP FLAVORS & % CAGR:



Innova 2022, Dairy Alternative Drinks: Europe

It's also noteworthy that in (non) dairy, fat claims are decreasing further while sugar claims are increasing.

Dairy & dairy alternative drinks launches with claims

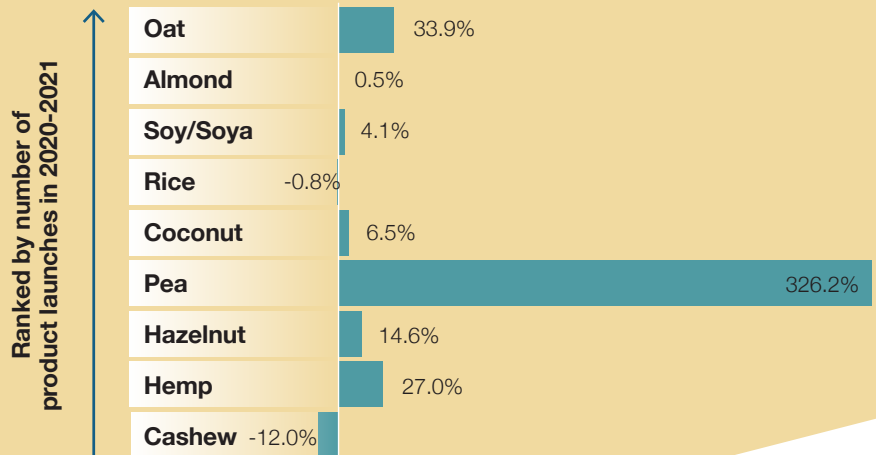


Source: Innova 2017-2021, Dairy & non-dairy drinks, launches, Europe

Oat continues to be the leading botanical in the expanding market for dairy alternative drinks, followed by almond and soy. Pea protein, however, is the rising star in new formulations in terms of NPD. For instance, pea protein is employed in Alpro's most current caramel coffee plant protein soya and pea drink in addition to soy. Combinations of different plant proteins are well-liked from both a nutritional and organoleptic perspective.

Dairy alternative drinks launch trends by primary protein ingredients*

CAGR 5 years ending Q1 2022



* Based on ingredient featuring in the product name
Source: Innova 2022, Dairy Alternative Drinks: Europe

POTENTIAL BEYOND SUGAR REDUCTION



Two out of three consumers look for functional or additional health benefits when buying beverages.

Source: Innova – Soft drinks trends in Europe, 2022

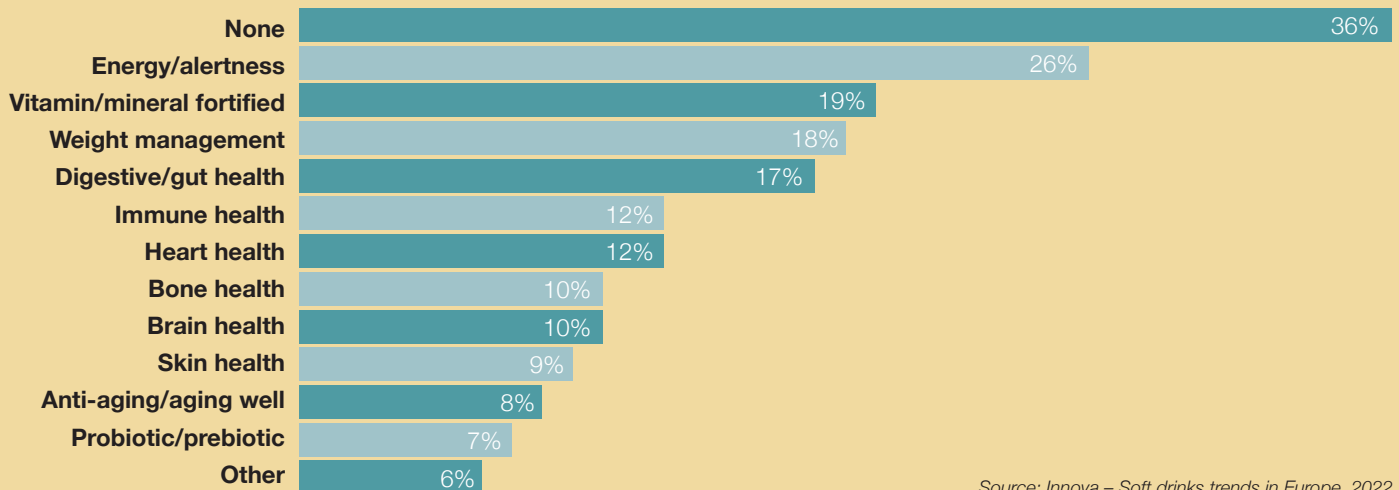
Moving beyond refreshment might mean moving beyond sugar.*

The amount of sugar in each serving may not be as important to the consumer’s goal in a beverage drunk specifically for digestive health, as it could be in a beverage consumed only for refreshment. Although successful innovations in functional beverages will probably be lower in sugar and more creative in terms of natural sugar reduction strategies, sweetness isn’t always at the center of the functional consumer’s main goal.

Two out of three customers look for functional or additional health benefits when buying beverages, according to a recent Innova study. Highest marks go to energy and alertness, then fortification, weight control, and different health advantages. The greatest number of consumers are most interested in these health benefits for digestive/gut health, followed by immune/immune system, heart, and other health benefits.

** Source: Euromonitor – Global soft drinks in 2022: Alternative approaches to sugar reduction*

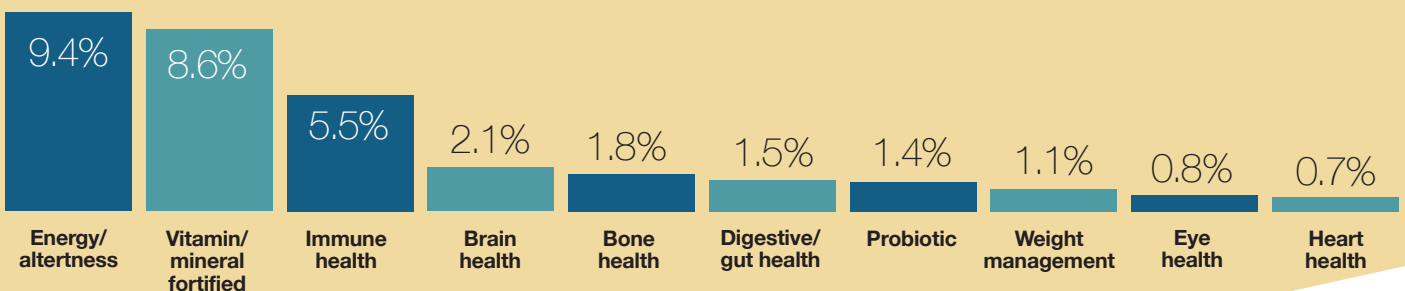
Which functional or added health benefits are you looking for when choosing carbonated beverages? (average, 12 European countries, 2021)



Source: Innova – Soft drinks trends in Europe, 2022

Consumer interest and manufacturer new launch activities continue to be out of sync. For instance, only 9% of current NPD beverages make an energy or alertness claim, and only 1.5% make a digestive or gut health claim.

Product launches with ‘Health’ claims in soft drinks (2020-2021)

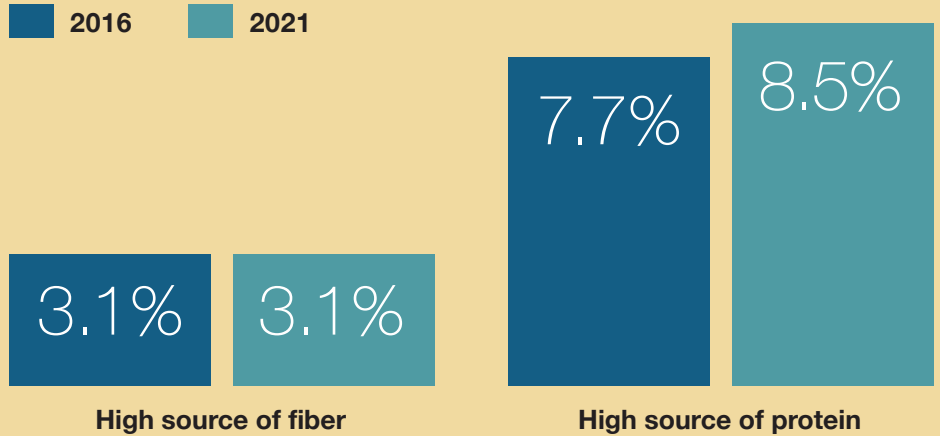


Source: Innova database, 2020-2021

FIBER & PROTEIN FORTIFICATION

According to Innova data, fortification in terms of fibers and/or proteins is generally stable in NPD, but there are significant variations in subcategories. For instance, claims about fiber enrichment dominate in meal replacements (59%), whereas claims about protein enrichment are prevalent in sports drinks (37%) and dairy alternative drinks (21%).

Percent of drink launches with protein/fiber claims



Flavors to watch out for include the **indulgent flavors caramel and dark chocolate**, both popular in flavored milk.

Source: Innova 2022, Dairy Alternative Drinks: Europe

Source: Innova database, 2020-2021

The USFDA* has conducted the first extensive study to evaluate eight plant-based milk alternatives (almond, cashew, coconut, hemp, oat, pea, rice, and soya) with cow's milk in terms of four essential micronutrients: phosphorus, magnesium, zinc, and selenium. The study discovered that, **with the exception of milk substitutes made from pea protein**, which contain levels comparable to those of cow's milk, **practically all plant-based milks have lower concentrations of the four micronutrients**. Phosphorus encourages growth and tissue repair, while selenium is necessary for a healthy immune system.



Source: The Food People, Drinkswatching 2022

* The United States Food and Drug Administration is a federal agency of the Department of Health and Human Services. The FDA is responsible for protecting and promoting public health through the control and supervision of food safety and food products.

INNOVATION OPPORTUNITIES ABOUND

Customers are very interested in beverage perks that are provided. There are numerous possibilities for functional ingredients that might assist you in satisfying consumer needs. However, it is crucial to understand how consumers balance nutrients and sugar intake throughout the course of the day, across consumption occasions. Because if there is one thing consumers are not willing to sacrifice, it's taste.

86% **Taste** is still the most important factor in purchase decisions for dairy drinks.

The top taste attributes appreciated by consumers for chocolate-flavored drinks:

77%
Chocolaty taste

60%
Creaminess

50%
Sweetness

Source: Cargill proprietary research 2021, 7000+ consumers across 10 EMEA countries, Cargill proprietary research 2022



The rise of health-conscious consumers seeking natural solutions

The number one reason to leave the chocolate beverage category is 'too much sugar', but the number one reason to come back is natural ingredients. For 79% of consumers, 'natural ingredients' is the most appealing claim on packaging for cocoa and chocolate products. For the dairy drinks segment, lack of additional sweeteners (70%) is the most important claim.

Source: Cargill proprietary research 2021, 7000+ consumers across 10 EMEA countries



SPOTLIGHT






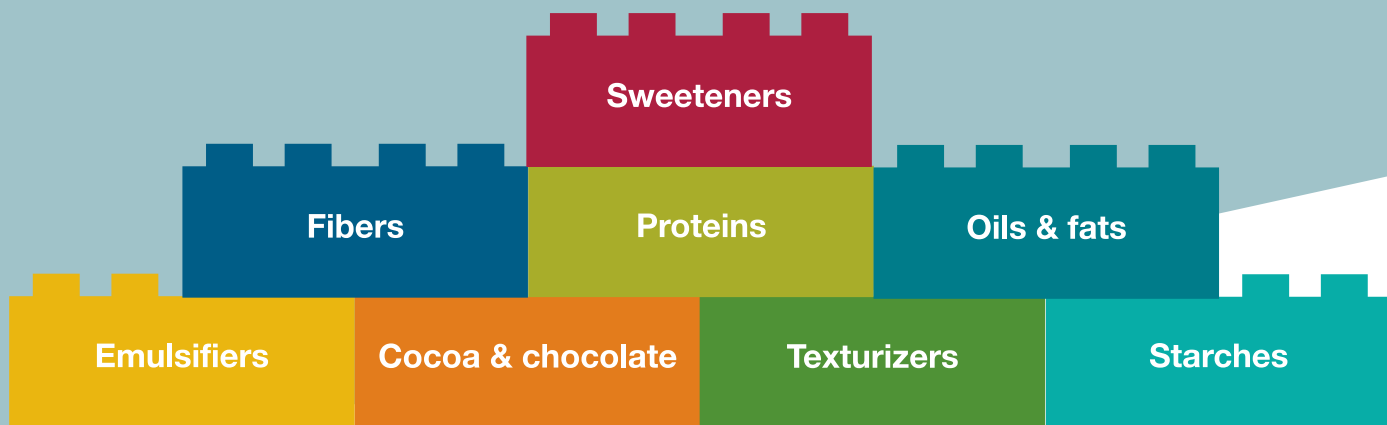
INFUSE by Cargill™ is the new service offering model from Cargill Starches, Sweeteners & Texturizers Europe.

It brings together the company’s extensive ingredient acumen to rapidly create tailor-made ingredient blends, helping customers speed up innovation and market launch.

Customers in Europe have been using Cargill’s functional systems for more than 40 years to achieve custom texturizing ingredient blends. INFUSE by Cargill™ expands on that work, adding sweetness and other specialty ingredients such as proteins and fibers, to address a broader array of customer formulation challenges.

Three pillars serve as the foundation for Cargill’s customer focus in Europe:

-  An unwavering attention to providing on-trend solutions.
-  A commitment to speed to market.
-  Access to deep technical expertise to help create tailored ingredient blends.



NO COMPROMISES: Designing beverages for health *and* indulgence

As a true frontrunner for identifying trends and showcasing Cargill’s application expertise, the INFUSE by Cargill™ team set out to create a set of two ‘Boosted Beverages’ — fortified plant-based concepts that blend health and indulgence, with innovations from across the Cargill portfolio.

Both concepts are made using solutions that are designed to replicate animal-based products’ functionality and drinking experience, and which are easy to use, without any modifications or special requirements.



EpiCor® postbiotic is a first-of-its-kind whole food ingredient that uses the natural power of fermentation. Thanks to its stability it can be flexibly formulated in a wide variety of applications such as iced teas, sports drinks, dairy alternative drinks, gummies, chocolate, yogurts, biscuits, soups and many more.”



Guilhem Jamin,
Product Specialist
Sweeteners & Proteins



Plant-boosted
protein shot



Plant-boosted
iced coffee

Both concepts are the beverage application debut for Cargill’s EpiCor® postbiotic ingredient. One of the concepts also features a Gerkens® Sweety cocoa powder, which recently won the Sensory Innovation Award at FiE 2022 in Paris. This cocoa powder makes it possible for beverage producers to hit the sweet spot for consumers who want it all: less sugar, natural reduction, and great taste.

The concepts are perfect examples of where INFUSE by Cargill™ applications knowhow comes into its own to make delicious and nutritious plant-based functional beverages a reality.



SPOTLIGHT: EPICOR® #1 POSTBIOTIC BRAND



Nutritional:

- Whole yeast fermentate made via specialized fermentation process
- Nutritious whole food with a unique fingerprint of metabolites*

* Proteins, peptides, antioxidants, polyphenols, organic acids, nucleotides, polysaccharides (beta glucans and mannans)



Applications:

- Daily recommendation of 500mg (for adults) shown through studies to be an efficacious dose
- EpiCor® can be easily formulated into most food and beverage products; our experts have successfully formulated EpiCor® into a variety of on-trend recipes



Versatility:

- Stability and consistency;
 - pH and heat stable (not a living organism)
 - It can withstand food & beverage processes
- Highly soluble in water (<75%)
- Long shelf life (3 years)
- Minimal impact on sensory attributes like taste, color and texture

These documents are designed to provide professionals within the food industry with an overview of the immunity and gut health attributes of Cargill’s EpiCor® Dried yeast fermentate produced by *Saccharomyces cerevisiae* and provide the current state of the research and studies which back this up. The contents of these documents are NOT intended to serve as the basis for any claims that professionals within the food industry may choose to consider on consumer food products for European jurisdictions, noting that currently no health claims for this product have been submitted nor approved under the EU Health & Nutrition Claims Regulation N° 1924/2006 and any claim that a product is intended for the prevention, curing or treatment of disease in humans would qualify the product as a medicine. © Cargill, Incorporated 2022

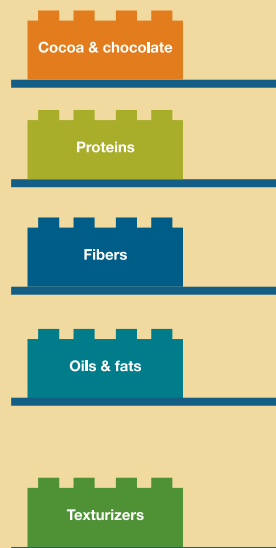
PLANT-BOOSTED PROTEIN SHOT



For illustration purposes we would like to highlight the Plant-boosted Shot. This ‘tiny magic bottle’ concept for a plant-based protein shot (65ml) is fully in line with the trend towards functional beverages and also demonstrates that health does not have to come at the expense of delicious taste and texture.

Since it’s a shot for health* and indulgence, we couldn’t go for a full sugar version. So instead we targeted achieving 30% sugar reduction in a natural way, with the specialty Sweety cocoa powder and without the use of any sweeteners or other ingredients. In this way, the product contains just 4.7% sugar when compared to the typical dosage of 7% sugar for this type of application. The concept, which meets the requirements for a vegan or vegetarian claim truly leverages INFUSE’s building blocks approach that enables the creation of a delicious and healthy concept:

- **Sweety®:** enables 30% sugar reduction in a natural way (without adding any sweeteners or artificial ingredients), without compromising on great taste or performance
- **Puris™ Pea protein:** provides protein enrichment and enables a “high in protein” claim
- **Cargill™ soluble fiber (dextrin):** enables a high fiber claim (> 3g per 100 kcal)
- **Cargill oil blend 1103:** a carefully selected vegetable oil blend rich in linoleic and linolenic acid that enables a source of ALA/omega-3 claim
- **Lygomme® QBN 330:** a texturizer blend that stabilizes the cocoa powder and plant protein to prevent sedimentation and that helps to bring desired indulgent properties such as mouthfeel and smoothness



The concept also achieves a Nutri-Score B (comparable or better versus dairy references on the market), providing 30% sugar reduction, high in fiber and protein claims and source of ALA/Omega-3. On top, the product contains the 500mg daily recommended dose of EpiCor®, and is low in saturated fats.** And above all, it’s oh so tasty! In summary: it’s a functional beverage powerhouse without compromise!



We are proud and honored that Gerken’s® Sweety cocoa powders won the prestigious **Fi Europe 2022 Sensory Innovation Award**. Years of R&D work, sensory expertise, and extensive consumer testing, have resulted in a product that both adults and kids love. To top it all off, the Sweety powders also won the hearts of the **FiE** panel of esteemed judges, recognizing the role cocoa can play in natural sugar reduction while keeping sensory delight front and center.”



Ellie Nikolova,
Commercial Marketing Manager
Cocoa Powder EMEA

*Low saturated fat (SFA + TFA > 0,75 g/100 ml & SFA + TFA < 10 energy)

**Reducing consumption of saturated fat contributes to the maintenance of normal blood cholesterol levels (linked to low SFA claim)



SPOTLIGHT: gerkens®
a Cargill brand

GERKENS® SWEETY COCOA POWDER



Market need:

- Sugar reduction is driving a new era of beverage innovation.
- There is more attention on ingredients and preference for natural solutions and “clean” label while still delivering on taste.



Game-changing solution:

- Sweety cocoa powders were developed for the beverage category to enable 30% sugar reduction, in a natural way (without adding any sweeteners or artificial ingredients) with no compromise on taste.
- Winner of the Sensory Innovation Award 2022 by Food Ingredients Europe (FIE).



Sensory excellence:

- R&D expertise and deep understanding of flavor formation.
- Sensory profiling through professionally trained panels.
- Consumer research with adults and kids in UK, DE and FR to validate overall liking and great chocolaty taste.

REDUCTION IN A NATURAL WAY

30% LESS SUGAR

JUST AS TASTY

gerkens®
a Cargill brand

FIE Food Ingredients Europe Innovation Awards 22
SENSORY INNOVATION WINNER

*Gerkens® Sweety Cocoa Powders:
Tasty Sugar Reduction
the Natural Way*

DELIVERING HEALTH INGREDIENT EFFICACY IN SUCH A SMALL SERVING

Julie De Vel, Beverage Applications Specialist, explains some of the challenges involved in creating this concept:



Plant-based proteins can bring off-taste, sandiness and graininess — so it’s a real challenge to maintain a good taste and mouthfeel, and create an indulgent product that is not too watery or grainy.”



Julie De Vel,
Beverage Applications Specialist

- **Delivering health ingredient efficacy in such a small serving size.** The 65ml concept means that developers had just one-third of the typical volume to work with, while still incorporating just enough plant-based protein to be able to achieve a “high protein” claim.
- **Masking plant proteins off-flavors.** This is where the technical expertise of applications specialists like Julie comes into play, particularly during the three crucial steps in processing: hydration (mixing), homogenization and then heat treatment. “By homogenizing the UHT treatment and having the protein well hydrated before adding all the other ingredients, we were able to achieve less sandiness, and deliver the mouthfeel that consumers desire,” she notes.
- **Creating an indulgent boost.** Julie had to ensure an efficacious dosage of EpiCor postbiotic (500mg) into the concept. This challenge was overcome through the considered incorporation of Gerkens® Sweety cocoa powders. “EpiCor® itself has an undeniable smell and flavor, and in such a shot it could give off too much of an aftertaste – but here it is well balanced thanks to the cocoa, with the sweetness of the drink masking this aftertaste,” Julie explains. “Gerkens® Sweety is easy to use, and has the same use as other cocoa powders – it really delivers a rich chocolaty taste, with a nice well-balanced sweetness level,” she adds.

RECIPE & NUTRITIONALS: PLANT-BOOSTED PROTEIN SHOT

Ingredients	% on final product
Water	85.45
Sugar	4.60
Puris™ Pea pea protein	3.20
Cargill Oil blend 1103	2.00
Cargill™ Soluble fiber CSF P80	1.70
Gerkens® SRB200 cocoa powder	1.70
EpiCor® Dried yeast fermentate	0.77
Calcium carbonate	0.31
Flavoring	0.12
Lygomme® QBN 330	0.08
Salt	0.07

Nutritionals (per 100 ml)	Dairy reference	INFUSE recipe
Energy kcal (298/251kJ)	71	60
Fats	2.5	2.4
<i>of which saturated</i>	0.4	0.4
Carbohydrates	7.6	5.3
<i>of which sugars</i>	6.97	4.69
Dietary fibers	2.17	2.15
Proteins	3.4	3.2
Salt	0.13	0.12
Omega-3	0.35	0.35



INFUSE

by Cargill™



Let's discuss how
INFUSE by Cargill™
can help you pack
a plant-boosted punch
into your beverages.

Time to get **INFUSED**

✉ Infusebycargill_solutions@Cargill.com

📍 www.cargill.com/infuse

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Cargill® Helping
the world
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