



INSIGHTS REPORT:

The best of both worlds: Infusing dairy with Plant-based solutions

The plant-based trend has truly mainstreamed in recent years. No longer the sole domain of strict vegans and vegetarians, a whole new (and much larger!) consumer group of “flexitarians” (i.e. flexible vegetarians) has come to the forefront.

Rather than forgoing meat and dairy altogether, they are seeking to reduce their consumption of animal-based proteins for various reasons. In effect, flexitarians want products that are: “good for me, good for the planet.”

The rise of this new consumer group has led to an explosion of activity in the plant-based meat and dairy alternatives space. However, since these consumers are not sticking to a strict plant-based diet, a simple rationale exists: Why not reduce the content of animal-based proteins in your favorite product, rather than forgoing it altogether? After all there are taste, texture, and nutritional qualities, such as amino acid profile, that can as yet not be completely replicated in fully plant-based options. This sub-trend within “plant-based” has resulted in so-called “hybrid” products: first within meat/plant-based meat alternatives, and now within dairy/plant-based dairy alternatives. The trend towards hybrid dairy products began in the US, and has now started in Europe too.



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GROWING HYBRID DAIRY POTENTIAL



1 in 3 global consumers would not consider buying 100% plant-based alternatives “because of poor taste and texture.”

Source: 2021 Innova Market Insights global trends survey

There is both growing scientific support and consumer potential for supplementing cow milk with plant protein.

For example, a recent Ohio State University study published in the *Journal of Dairy Science*, highlighted how a blend of dairy and pea protein could result in opportunities for innovative nutritional dairy products.

Hybrid dairy has a clear place in tomorrow’s refrigerator. “Hybrid is about creating ‘the best of the two worlds’,” says Yannick Boulard, INFUSE by Cargill™ Account Manager. “It is about reaching consumers who are conscious about their consumption of animal-based proteins and want to boost their plant-based intake, but cannot fully commit. These consumers like the taste, texture and nutritional properties of dairy, and are not willing to compromise completely.”

NEW MARKET INNOVATION IN HYBRID DAIRY

The Laughing Cow Blends chickpeas and cheese spread with herbs

CLAIMS: Rich in protein. Perfect blend of deliciously creamy cheese and real plant-based ingredients.

INGREDIENTS: Skimmed milk, chickpea, sunflower oil, reduced fat emmentaler cheese (pasteurized milk, salt, culture, enzyme), milk protein concentrate, pea protein isolate, less than 2% of each: sodium polyphosphate, tricalcium phosphate, parsley, granulated garlic, carrageenan, citric acid, salt, spice.

Up and Go breakfast drink: Apple and cinnamon

CLAIMS: Made with wholegrain oats. High in fiber and calcium rich. High in protein. Packed with protein: 15g protein. Veggie friendly. Low in fat.

INGREDIENTS: Skimmed milk (reconstituted) (58%), water, wholegrain oat flour (3.2%), fructose, chicory inulin, milk protein, soy protein, sunflower oil, sugar, starch, acidity regulator (potassium citrate), stabilizers (cellulose, carboxy methyl cellulose, carrageenan), flavoring, minerals (calcium and sodium phosphate, iron), salt, vitamins (vitamin D, vitamin C, thiamin, riboflavin, niacin, vitamin B6, folic acid, vitamin B12).

Source: Innova Market Insights database, 2022



SPOTLIGHT






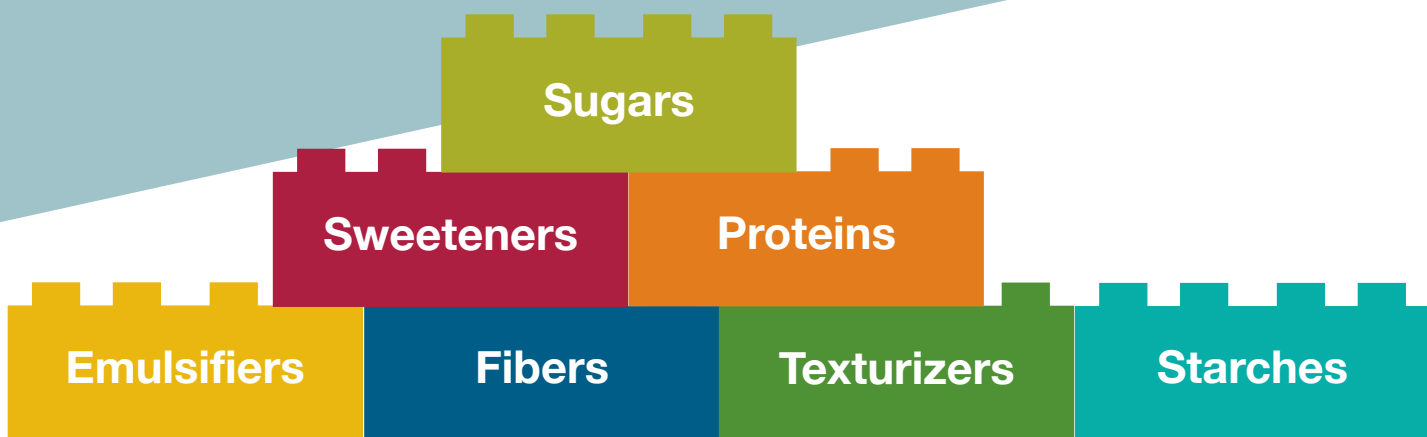
INFUSE by Cargill™ is the service offering model from Cargill Starches, Sweeteners & Texturizers EMEA.

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 EMEA:

 <p>An unwavering attention to providing on-trend solutions.</p>	 <p>A commitment to speed to market.</p>	 <p>Access to deep technical expertise to help create tailored ingredient blends.</p>
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MILKING OUR PORTFOLIO FOR HYBRID DAIRY CONCEPTS

As a true frontrunner for identifying trends and showcasing Cargill’s applications expertise, the INFUSE by Cargill™ team set out to create a set of three hybrid dairy concepts using various blends of proteins, texturizers and fibers:



Greeky Fusion Delight

A hybrid Greek-style fermented product



Creamy Fusion Delight

A hybrid chocolate creamy dessert



Icy Fusion Delight

A hybrid vanilla frozen dessert

All three recipes are based on a blend of cow milk, pea protein and vegetable fats, to deliver an optimal balance of nutritional profile, texture, and taste.

In each case the reduction in sugar and calories (through the lowering of the lactose content), and the increase in fiber, resulted in a Nutri-Score improvement.

For Philippe Barey, Principal Application Specialist, the three concepts truly demonstrate how balance can be achieved. “Vegetable proteins are not as well balanced in terms of nutritional profile, but by adding dairy products, we are compensating for this,” he notes. “In turn by adding the plant protein and selecting the right plant-based oils, we are improving the Nutri-Score, by reducing the sugar and saturated fat levels.”

SPOTLIGHT: PEA PROTEINS



Label-friendly:

- Produced from label-friendly yellow peas, which need no allergen declaration in Europe
- High quality ingredient
- Rated as one of the most healthy plant proteins*



Great sensory profile:

- Mild flavor, low off notes
- Suitable for various applications, incl non-dairy applications



Great functionality:

- Outstanding solubility, preventing sandy/ undesirable mouthfeel
- Combined with our texture portfolio, desired textures can be achieved from liquid, creamy to more gelled textures



*Cargill IngredientTracker™ 2021

#PLANTPROTEIN

GREEKY FUSION DELIGHT



Traditionally, the texture of yogurt is brought by the dairy protein network through fermentation; however, plant proteins and fats do not react in the same way, and do not bring a lot of texture.”

Fabien Bouron, Senior Dairy Technical Services Specialist

For illustration purposes we would like to highlight one of three concepts that we worked on: a hybrid alternative to Greek yogurt that delivers on the dairy experience in terms of taste and texture, while keeping the ferments alive, and improving the Nutri-Score.

Here the biggest challenge to overcome related to replicating the textural and processing characteristics of a fully dairy-based Greek yogurt.

In order to come as close as possible to the regular dairy recipe, the team worked on combining pea protein and designing a fiber and texturizer blend. Puris™ pea protein enables a balanced protein nutritional profile, and helps texture development while having a neutral taste profile.

- **Trilisse® 200:** This fiber blend of soluble corn fiber (dextrin) and chicory root fiber (inulin) compensates the loss of dry matter, ensuring the texture is not impacted.
- **Trilisse® AYS 0688 DF:** This texturizer blend of maize starch and UniPECTINE® pectin structures and stabilizes the yogurt, which helps to bind the water and brings viscosity. This provides an indulgent mouthfeel with shininess while avoiding syneresis.



The concept achieves a better Nutri-Score rating (B) when compared to the dairy references on the market (C), providing reduced saturated fat and source of protein claims.

RECIPE & NUTRITIONALS: GREEKY FUSION DELIGHT

INGREDIENTS	% on final product
Water	Up to 100
Skimmed milk	55.0
Cream 35%	10.5
Puris™ Pea 870 pea protein	1.9
Trilisse® AYS 0688 DF	2.0-2.5
Cargill fully refined coconut oil	1.4
Trilisse® 200	1.3
C*Gel® 03401 starch	0.5
Cultures	0.04

NUTRITIONALS	Dairy reference	Greeky Fusion Delight
Energy (kcal/100g)	106	87
Fats	8.4	5.2
<i>of which saturated</i>	5.54	3.8
Carbohydrates	4.5	5.8
<i>of which sugars</i>	4.5	3.2
Dietary fibers	0	1.0
Proteins	3.1	3.7
Salt	0.1	.01



WHAT'S NEXT

Our work into hybrid dairy is a perfect example of how the INFUSE by Cargill™ is delivering the “building blocks of product innovation,” by working on early trends, and showcasing our applications expertise.

For example, Fabien stresses that making the switch from full dairy to hybrid dairy dessert products does require significant expertise, due to the changes of the general viscosity of the mix. “Since you are lacking the dairy protein functionality, you have to really compensate for that with texturizers, and rely on applications expertise,” Fabien notes. “You cannot just make the switch – you need some technical competence and knowhow in order to be able to achieve this in the first place,” he adds. This is where INFUSE by Cargill™ experts come in.



We are infusing your products with both a broad portfolio, and the technical expertise required to achieve exceptional levels of technical performance for you, and amazing sensory experience for your consumer. Just as is the case for hybrid dairy, INFUSE by Cargill™ truly delivers the best of both worlds!”

Yannick Boulard, Dairy Business Development Manager



IN FUSE

by Cargill™



Let's discuss how we can
enable the success of your
next hybrid dairy launch.

Time to get INFUSED

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