

Solutions for optimal dairy (alternative) performance

Dairy & Plant-based Dairy Alternatives



## Cargill, your partner for co-creating growth in Dairy & Plant-based Dairy Alternatives

Dairy products are complex formulations requiring the right mix of ingredients and expertise. Our broad range of (plant-based) ingredients including proteins, texturizers, oils & fats, sweeteners, cocoa and chocolate, fibers as well as functional systems are designed to inspire consumer pleasing solutions. Our worldclass technical expertise can help you leverage this broad portfolio to create deliciously satisfying products. Add in our reliable global supply chain, and you have all the tools you need to create winning (plant-based alternatives to) dairy.

### **Our secrets to your dairy alternatives success:**



### **Insights-driven innovation:**

Complement your insights with our research into market trends and consumer needs to develop consumer-pleasing products



### **Broad solutions portfolio:**

Leverage our broad Cargill ingredient portfolio and our partnership to deliver fully integrated solutions



### **Enhanced expertise:**

Tap into reliable, knowledgeable and highly skilled dairy & plant-based dairy alternative experts and state-of-the-art facilities that are close at hand

### Accelerated sustainability:

Advance your sustainability goals by leveraging our sustainability actions and commitments across the supply chain

### **Trusted supplier:**

Scale, grow and thrive thanks to global supply chains and alternative solutions to help manage your costs



# Texturizers

Texture is a vital part of product delivery as it determines how we experience a product: its flavor, appearance, texture, and mouthfeel. At Cargill, we couple our texture and emulsification solutions with our in-depth application and technical expertise, to address your most challenging formulation needs, and to deliver the palate-pleasing textures that keeps your customers coming back for more.

Product Type/Name	Features & Benefits	Applications
Starch		
<b>Functional Label-Friendly Starch:</b> Waxy Maize,Tapioca SimPure®	<ul> <li>Label-friendly</li> <li>Smooth, non-gelling texture bringing body and mouthfeel</li> <li>Great cold storage stability</li> </ul>	(Plant-based alternative to) yogurts, desserts and plant- based alternative to cheeses
Native Cook-Up Starch: Maize, Waxy Maize, Wheat, Tapioca C☆Gel®	<ul> <li>Label-friendly</li> <li>Good gelling</li> <li>Provides firm texture</li> <li>Prevents stickiness after grating / slicing</li> </ul>	Analogue cheese, dairy gelled desserts, plant-based alternatives to cheeses, plant- based gelled desserts
Native Instant Starch: Maize, Waxy Maize C☆Gel® Instant, C☆HiForm®	<ul> <li>Label-friendly</li> <li>Viscosity in cold process</li> </ul>	
Modified Cook-Up Starch: Maize, Waxy Maize, Tapioca C☆Tex®, C☆PolarTex®, C☆CreamTex®	<ul> <li>Wide range of textures</li> <li>Shelf life stability</li> <li>Water-binding</li> <li>Acid, heat &amp; shear tolerance</li> </ul>	Analogue cheese, yogurts, dairy desserts and plant-based alternatives to cheese, yogurt and plant-based desserts
C☆Set <sup>®</sup> , C☆Stretch <sup>®</sup>	Excellent gelling properties	_
Modified Instant Starch: Maize, Waxy Maize, Tapioca C☆Tex® Instant, C☆PolarTex® Instant, C☆HiForm®	<ul> <li>Viscosity in cold process</li> <li>Wide range of textures</li> <li>Shelf life stability</li> <li>Water-binding</li> <li>Acid, heat &amp; shear tolerance</li> </ul>	

## SimPure<sup>®</sup>

SimPure® starches help address consumers' desire for simple ingredients and familiar labels, at the same time giving manufacturers greater process tolerance, shelf life and storage stability.

• **Label-friendly** – naturederived, recognizable and simple ingredients

• **Broad functionality** – suitable for a wide range of consumer products, thanks to the broad portfolio with texturizing properties

**Body & mouthfeel** – enhances the flavors and textures of everyday products

Cargill.com/emea/

simpure

www



Product Type/Name	Features & Benefits	Applications
Dried Glucose & Maltodextrin		
<b>Dried glucose &amp; Maltodextrin</b> C☆Dry® MD, C☆Dry® Light, C☆Dry® GL, C☆NutriDry	<ul> <li>Body, mouthfeel, bulking agent</li> <li>Low relative sweetness</li> <li>Neutral taste</li> </ul>	(Plant-based) frozen desserts, flavored dairy and cocoa drinks, (plant-based alternatives to) yogurts, cheeses and creams
Pectin, Carrageenan, Xanthan Gum		
<b>Pectin</b> UniPECTINE <sup>®</sup>	<ul> <li>Label-friendly thickening and gelling agent</li> <li>Stabilizes proteins in acidic conditions</li> </ul>	Yogurts, processed cheese, acid dairy drinks, creams, frozen desserts, plant- based alternatives to yogurts, fermented creams, plant-based acid dairy drinks
Carrageenan Satiagel <sup>®</sup> , Satiagum <sup>®</sup> , Aubygel <sup>®</sup>	<ul> <li>Acts as a thickening and gelling agent</li> <li>Suspends and stabilizes fat, protein and cocoa particles</li> <li>Improves mouthfeel</li> </ul>	(Plant-based) desserts, dairy drinks, plant-based alternatives to cheeses
<b>Xanthan Gum</b> Satiaxane®	<ul> <li>Thickening, suspension and stabilizing agent</li> <li>Can be applied effectively at very low dosage</li> <li>Stability in acid conditions and under heat treatment</li> </ul>	Frozen desserts, plant-based desserts, plant-based alternative to cheeses
Seaweed Powder		
Seaweed Powder WavePure®	<ul> <li>Label-friendly</li> <li>Very limited color and flavor deviation, formulation and process versatility</li> <li>Brings great body and mouthfeel</li> </ul>	(Plant-based) dairy desserts, plant-based alternatives to dairy drinks
Lecithin		
Fluid Lecithin: Soy (GM/NGM)* and Sunflower Organic Soy Topcithin®, Leciprime®, Metarin®	<ul> <li>Label-friendly emulsifier</li> <li>Stabilizes emulsions and foams</li> <li>Reduces surface tension</li> <li>Non-GMO* available</li> </ul>	Dairy creams, plant-based alternatives to dairy drinks and plant-based alternatives to cheeses
Deoiled Lecithin: Soy( GM/NGM), Sunflower and Rapeseed Metarin <sup>®</sup> , Emulpur <sup>®</sup> , Emultop <sup>®</sup>	<ul> <li>Not a major allergen</li> <li>Available in different quality grades (Organic, FQ-MaxX infant, FQ-MaxX, Premium, Standard)</li> </ul>	

WavePure<sup>®</sup>

WavePure<sup>®</sup> is a seaweed powder range based on native seaweed obtained without any chemical modification. It's a unique ingredient with great mouthfeel properties that enables smooth and creamy textures, in category like gelled dairy desserts.

- **Label-friendly** nature-derived, simple and familiar plantbased ingredient, based on seaweed
- Nutritional boost low calorie content, rich in fiber and other naturally healthy elements (i.e. proteins, vitamins, & antioxidants)
- **No chemical modification** whole, not-transformed seaweed; all the natural components of the seaweed are kept intact

Cargill.com/food-bev/emea/texturizers/ seaweed-powder



\* There is no single definition of "non-GMO". Contact Cargill for source and processing information.



# Sweeteners

Cargill offers one of the broadest sweetness portfolios, ranging from full to no calorie options, to offer choice to customers and consumers. Whether you're creating an entirely new product or formulating for balanced nutrition, Cargill's broad range of nature-derived sweetness solutions can help you for sweet success.

#### Product Type/Name Features & Benefits **Applications High intensity sweeteners** (0 kcal/g, Sugar and calorie reduction, Sweetness adjustment) (Plant-based) frozen, neutral and • High Purity Reb A from the stevia leaf Stevia<sup>1</sup> fermented desserts, (plant-based · Cost-effective sugar reduction Truvia® alternative to) flavored dairy and · Clean, sweet taste cocoa drinks ViaTech® · Proprietary, synergistic blends of Steviol Glycosides designed for optimal taste and sweetness · Clean taste allows for deeper sugar reduction Reduces bitterness and licorice off-notes Low/no-calorie sweeteners<sup>1</sup> (2.4 kcal/g- 0 kcal/g, Bulk sweeteners, Sugar and calorie reduction, Tooth-friendly) Maltitol · Similar sweetness, cooling effect and (Plant-based) frozen, behavior to sucrose neutral and fermented Maltidex® desserts, (plant-based · Boosts fruity flavors alternative to) flavored Sorbitol Milder relative sweetness dairy and cocoa drinks Cost-effective C☆Sorbidex® Erythritol · Sweetness and taste profile close to sucrose · Synergistic with high-intensity sweeteners, Zerose® masks off-flavors · Adds smoothness and body Zero calories Good digestive tolerance <sup>1</sup> Polyols and steviol glycosides are permitted in most energy reduced foods or foods with no added sugars under "quantum satis" or conditions of use. Foods with over 10% polyol content mut carry a label "Excessive consumption may cause laxative effects" (EU Reg. 1333/2008 on food additives).



Product Type/Name	Features & Benefits	Applications
Full-calorie sweeteners (4 kca	I/g, Bulk sweeteners)	
<b>Glucose syrups</b> C☆Sweet®	<ul> <li>Low to moderate relative sweetness</li> <li>Medium to high viscosity, body and mouthfeel</li> <li>Helps to adjust sugar recrystallization</li> </ul>	(Plant-based) frozen des
Glucose-fructose syrup C☆TruSweet®	<ul> <li>Moderate to high relative sweetness</li> <li>Cost-effective sugar replacement</li> <li>Controlled browning &amp; freezing point depression</li> </ul>	_
Fructose syrup C☆TruSweet <sup>®</sup> 01795	<ul> <li>High relative sweetness enabling up to 30% sugar and calorie reduction, and more in combination with high intensity sweeteners</li> <li>Enhances freshness and boosts fruity flavors</li> </ul>	_
Dextrose C☆Dex®	<ul> <li>High relative sweetness, typical sweet taste</li> <li>Flavor enhancement</li> <li>Quick energy release</li> <li>Good solubility</li> <li>Monohydrate or anhydrous powder, variety of particle size distributions</li> </ul>	

## **Stevia**

Cargill scientists have spent over 300,000 hours studying the unique properties of the stevia leaf.

Our broad portfolio of stevia sweeteners, proven formulation expertise and deep market insights translate into your competitive advantage. A rigorous specification process ensures consistent product quality – regardless of growing season – for your end-products. Cargill's agricultural stevia program has been benchmarked at Silver level by Farm Sustainability Assessment (FSA) 3.0<sup>2</sup> – becoming the first stevia producer in the industry with our entire grower network evaluated that achieved this distinction.

Cargill.com/food-bev/emea/sweeteners/stevia

Cargill.com/sustainability/sustainable-stevia



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<sup>2</sup> FSA is a standardized reference developed by SAI Platform, a food-industry organization dedicated to advancing sustainable agriculture in the food chain. It's designed to help producers assess their sustainable practices and support manufacturers in sourcing sustainably grown products. ISO/TS 19657:2017 (https://www.iso.org/news/ref2254.html).









As consumers embrace a more proactive and preventative approach towards health, their attitudes are increasingly reflected in their food and beverage choices hence fiber is rising in popularity. Cargill's fibers are fully in line with today's trends towards sugar and calorie reduction, fiber enrichment, and label-friendliness.

• Enables minimum 30%

sugar reductionCalorie reductionNutri-Score improvement

Product Type/Name	Features & Benefits
Fibers	
<b>Soluble fiber</b> Cargill <sup>™</sup> soluble fiber	<ul> <li>Label-friendly</li> <li>Enables 'High in fiber'</li> <li>'Source of fiber' claims</li> </ul>

(Plant-based alternative to) dairy drinks, desserts, (plant-based alternatives to) yogurts, plant-based alternatives to cheese

**Applications** 



# Plant proteins

In food, proteins are an important nutritional source supplying the body with essential amino acids that it cannot synthesize on its own. Beyond nutrition, these affordable, plant-sourced proteins provide functional benefits makes them easy to incorporate into a variety of food and beverage products. We can help food & beverage manufacturers match protein choices to brand goals, resulting in a new generation of products that meet the diverse needs and desires of today's more discerning consumer.

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<pre>x5.7) on dry % min.) iity pility</pre>

## **Pea Protein**

### Versatile, functional, irresistible

Pea protein isolates are a good source of protein, produced from label-friendly yellow peas, which need no allergen declaration in Europe. Their nutritional value pairs well with broad functionalities:

- · Good solubility and stability at different pH
- Mild flavor versus other pea proteins
- $\cdot$  Great emulsification and whipping properties
- Texturizing properties: smooth, creamy and spoonable texture
- Excellent water holding capacity avoids staling during shelf life

Cargill's extensive portfolio, deep application knowledge and technical expertise enables us to support food manufacturers in answering various plant-based formulation challenges.

Cargill.com/emea/pea-proteins

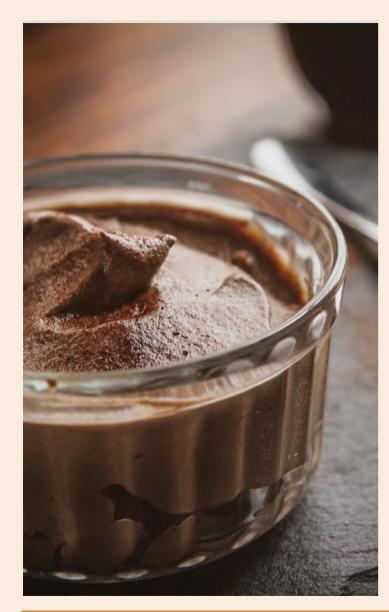


# Fats & oils

Vegetable oils & fats are essential in the creation of alternatives to dairy that deliver on sensory appeal. Finding the right mix is key to enabling optimal texture and organoleptic properties, and an improved nutritional profile. Our oils & fats portfolio for alternatives to dairy is in line with key trends around health, sustainability, label-friendliness, without compromising on sensorial properties that consumers expect.

Product Type/Name	Applicatons		Features & Benefits
	Dairy Alternatives	Dairy	
<b>Liquids</b> Sunflower, Rapeseed, Linseed, Corn, Soy	Plant-based alternatives to dairy drinks and desserts	Dairy desserts	<ul> <li>Low in saturated and high in mono- and polyunsaturated fatty acids</li> <li>Bring excellent sensorial properties.</li> <li>Solutions for various nutritional profile</li> </ul>
<b>Laurics</b> Coconut, Palm kernel	Plant-based alternative to cheese, plant-based alternative to creams and recombined creams	_	<ul> <li>Fully hydrogenated available</li> <li>Ensure high oxidative stability for long shelf life</li> <li>Bring excellent sensorial properties and flavor release</li> <li>For extra white colour experience</li> </ul>
<b>Fats</b> Palm-based solutions Fat-based milk powders	Plant based alternative to cheeses and creams, plant- based desserts, plant-based alternative to flavored dairy	Coffee whiteners and yogurt-based drinks	<ul> <li>Provide excellent structural properties</li> <li>Deliver the desired texture and mouthfeel</li> <li>Ensure high oxidative stability for long shelf life</li> </ul>
Blends Palm alternatives based on cocoa butter and/or liquid oils	and cocoa drinks		<ul> <li>Provide excellent structural properties</li> <li>Achieve desired texture and mouthfeel</li> <li>Reduced saturated fatty acids</li> </ul>





# Cocoa & chocolate

From bean to bar, Cargill's global portfolio of high quality cocoa and chocolate ingredients can help you create delicious dairy & dairy alternatives applications.

Product Type/Name	Features & Benefits	Applications
Chocolate		
<b>Standard</b> Milk, dark, white	<ul> <li>Liquid &amp; solid solutions</li> <li>Capability to produce chocolate recipes that comply with vegan certification</li> <li>Available with sustainable certification</li> </ul>	(Plant-based alternative to) desserts and dairy drinks
Caramel Selection	<ul> <li>White chocolate with caramelized ingredients</li> <li>Clean label- flavored with natural caramelized ingredients</li> <li>Four color &amp; flavor profiles</li> </ul>	-
Organic	<ul> <li>Organic claim chocolate</li> <li>Sourced from organic origins across the globe to limit local influences on supply stability</li> <li>Blended from different origins to ensure consistent flavor profiles</li> </ul>	-
<b>ExtraVeganZa</b> Vegan chocolate decorations & inclusions	<ul> <li>Sensorily outstanding vegan chocolate range with lighter color profile and vegan claim</li> <li>Based on sunflower syrup or rice syrup</li> <li>Available from 'suitable for vegan' to 'vegan with no detectable levels of dairy'*</li> </ul>	-
Cocoa powder		
Gerkens <sup>®</sup> cocoa	<ul> <li>A broad range of high-quality cocoa powders suitable for a variety of applications</li> <li>Two new, 30% sugar reduced cocoa powders, in a natural way (without adding any sweeteners or artificial ingredients)</li> <li>Available with a sustainable certification</li> <li>Available in organic</li> </ul>	
ExtraVeganZa	Two specialty cocoa powders to enhance the sensory appeal of plant-based alternatives to dairy drinks	
Coatings and fillings		
Customized plant-based compounds	<ul> <li>Made with plant-based ingredients for recipes that are also suitable for vegans</li> <li>No limit on dairy traces is offered*</li> <li>Dedicated 'No nut' production line</li> <li>Available with a sustainable certification</li> </ul>	Sh y

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\* Produced on our standard lines, dairy traces without max limitations.

# Functional ingredient blends

Blended ingredient solutions offer customers the ease of a solution that helps speed up their development and launch innovative products faster to market. By delivering such functional systems, Cargill can deliver on the core requirements for Dairy and Alternatives to dairy.

Among others, we offer functional ingredient systems under Trillise<sup>®</sup>, Flanogen<sup>®</sup> and Lygomme<sup>®</sup> label, that address a complex set of consumer demands, such as nutritional balance, label friendly, plant-based and other "free-from" formulation challenges.







## Cargill's Food Solutions

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creating