

# **Ingredients in dairy products**

## **Stabilizers and starch-based ingredients for organic dairy products**

## **Agenda**

- 1. Introduction to Procudan**
- 2. Stabilizers for organic dairy products (LBG)**
- 3. Organic starch based products for organic dairy products**
- 4. Summary and questions**

## A few words about Procudan.....



### Procudan A/S

- Established in 1901
- Family owned since 2006



- 40 employees in Kolding (DK) and Malmö (SE)
- Production of cheese wax
- International network: 20+ strategic partners and 100+ producers
- Provide raw material, ingredients, and packaging to food/pharma
- Certified according to
  - Food safety:ISO 22000
  - FSSC 22000 Food
  - FSSC 22000 Food Packaging
  - FSSC 22000 Transport & Storage



## Mission

We are experts in ingredients and packaging for food,  
**and we believe that value is co-created!**

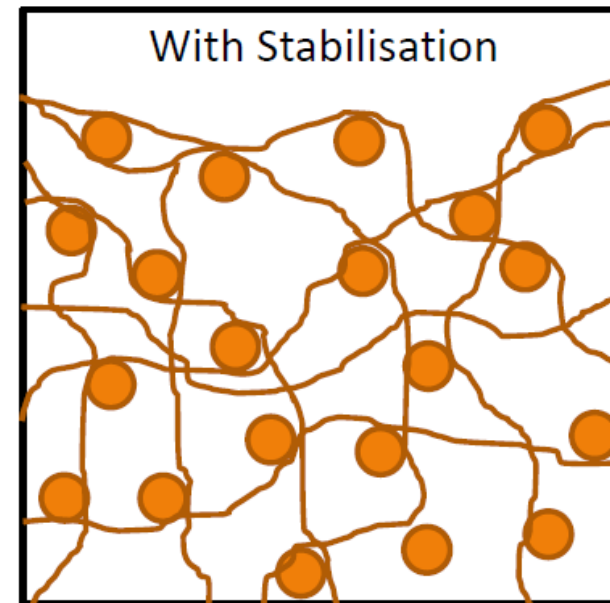
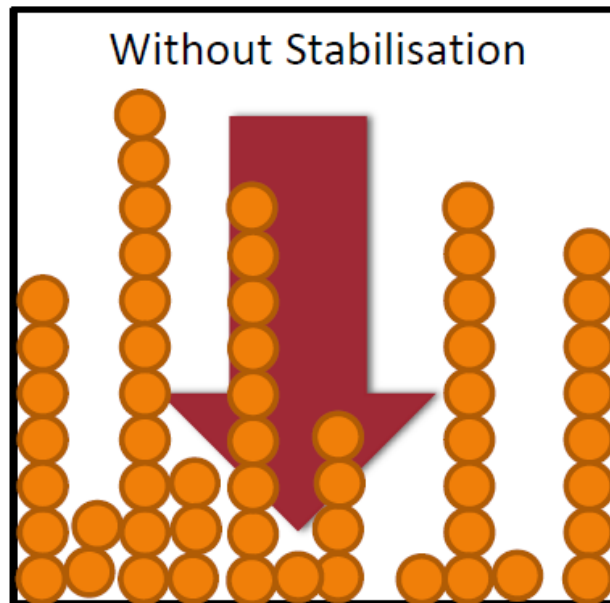


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## What are hydrocolloids?

Hydrocolloid is a collective name for natural or synthetic polymers, which are soluble or swellable in water.



## Why do we use hydrocolloids in food application?

- Mouthfeel and texture
- Improved processing properties
- Transport and storage stability
- Constant quality
- Development of new products



Texture modification

## Functionalities:

- Thickening
- Gelation
- Stabilisation

## **Hydrocolloids - in organic foods**

### **Approved in organic milk based products**

Reserve Polysaccharides: **Locust bean gum, Guar gum, Starch**

Structural Polysaccharides: **Pectin, Agar, Alginate, Carrageenan**

Exudates: **Gum Arabic**

Microbial Polysaccharides: **Xanthan gum**

### **Not allowed in organic foods:**

Modified Polysaccharides: Propylene glycol alginate, Starch derivatives, Amidated pectin, Cellulose derivatives



# Locust Bean Gum (LBG)

- Seeds of the Garob tree, Ceratonia Siliqua - minimum 10-15 year old trees
- Grow mainly in the Mediterranean area
- Resistant and grow easily arid area
- Sustainable growth, no fertilizers, pesticides, or irrigation systems – only water that comes from annual rain
- 100 % chemical free process - only mechanical treatment
- Available as **organic**
- Support locals in mediterranean area



## **Properties of Locust bean gum (LBG)**

- Soluble in hot water - 80-90° C
- Easy to handle in process - low viscosity at lower temperature
- High viscosity after swelling - 2200-3000 cps
- Milky appearance
- Thickener
- High synergistic interaction with other hydrocolloids -  
Kappa carrageenan and xanthan → gel formation

## Application of Locust Bean Gum (LBG)

- **Ice cream**
- Cakes
- Beverages
- Soups
- Sauces
- **Cream cheese**
- Mayonnaise



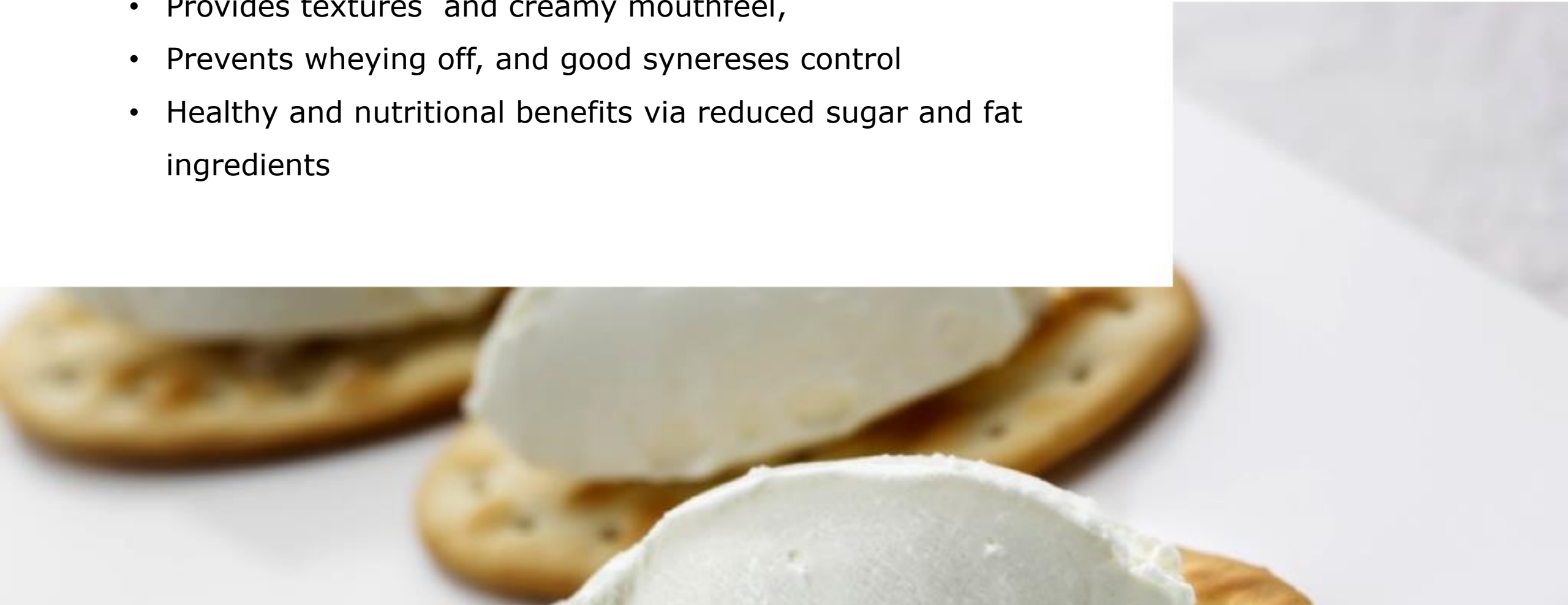
## Functionalities within Frozen Desserts

- Add body to frozen dessert
- Creaminess and smooth taste
- Heat/shock resistance to ice-cream



## Functionalities within Dairy product stabilization

- Provides textures and creamy mouthfeel,
- Prevents wheying off, and good synereses control
- Healthy and nutritional benefits via reduced sugar and fat ingredients




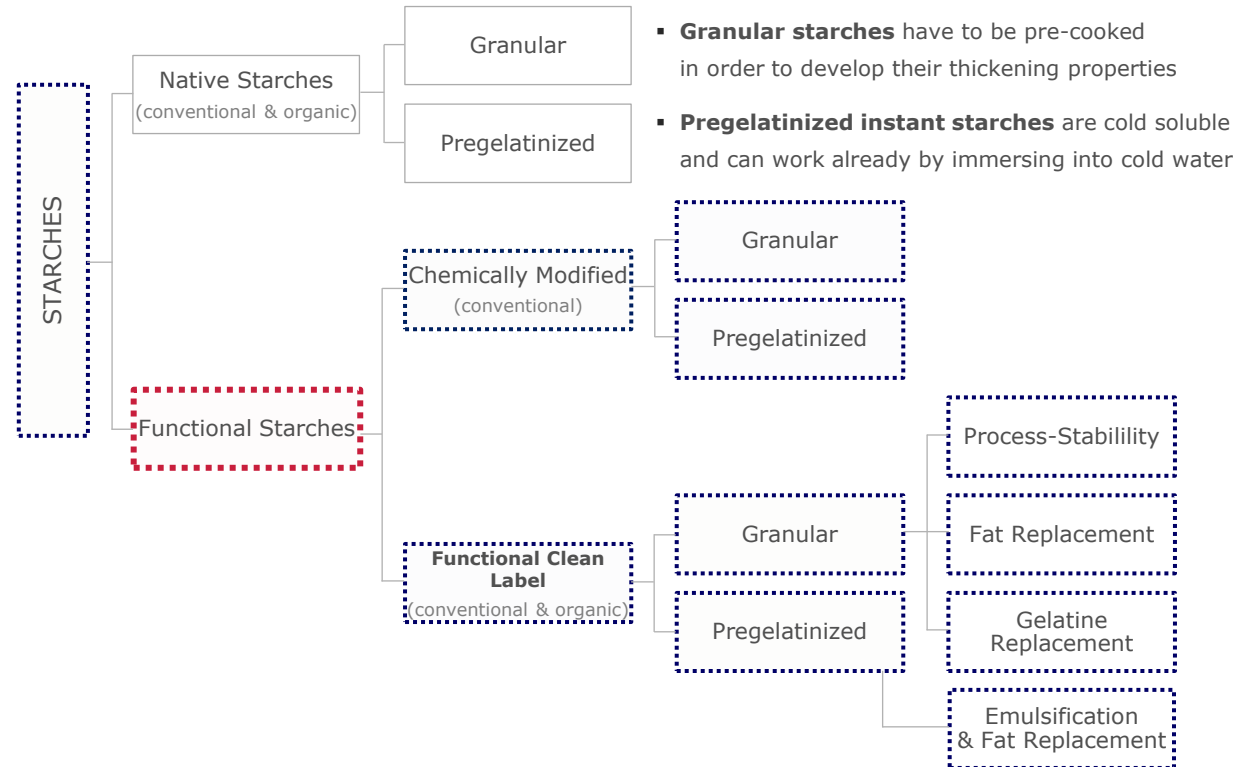
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# Classification of Starches

## FUNCTIONAL STARCHES

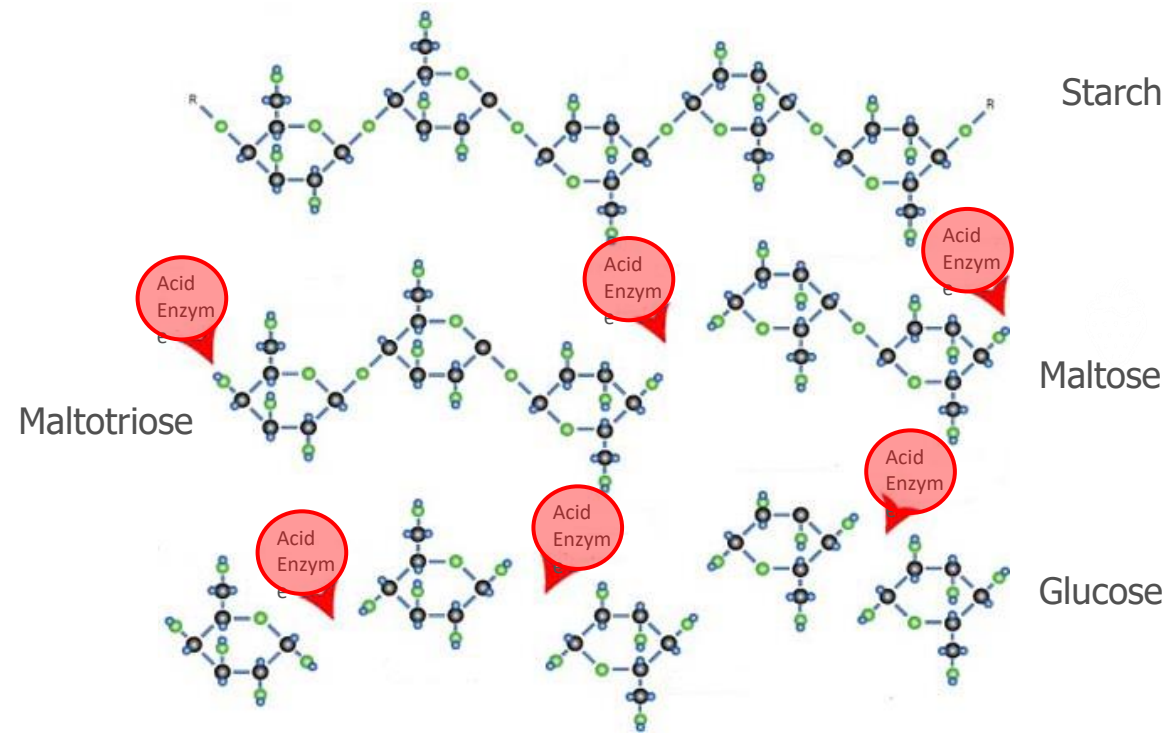
- Starches are based on organic or conventional **raw material**:
    - corn, waxy corn, potato or wheat
- 
- **Clean Label Starches**
  - Are alternatives to modified starches.
  - By physical treatment, starches are able to perform similar to chemically modified starches without applying any chemical process.
  - Process stability, shelf-life stability, texture profil.
  - Functional starches are being considered as food ingredient.
  - Available in conventional and organic quality



- **Granular starches** have to be pre-cooked in order to develop their thickening properties
- **Pregelatinized instant starches** are cold soluble and can work already by immersing into cold water

# Saccharification products

## Enzymatical degradation





DEXTROSE EQUIVALENT

## De indication

The choice of DE-value is depending on the individual formula and needed function of/in the final product.



\* The Maillard reaction is a chemical reaction between proteins (amino acids) and reducing sugars that gives browned food its distinctive flavor.

# Organic - Solutions for all categories



**Dairy**



**Sweets**



**Bakery**



**Ice Cream**



**Beverages**



**Snacks**



**Food Service**



**Convenience**



**Dips & Sauces**



**Infant & Special  
Nutrition**



**Sport**



**Retail**



**Cosmetics**



**Pharmaceuticals**

Find your individual  
solution  
with our [product finder!](#)



RELEVANT PRODUCTS FOR

## Category - Dairy



**THE natural UPGRADE**  
GIVE PERFECTION TO YOUR DAIRY PRODUCTS.

**Maltodextrins**

- enhanced mouthfeel
- improved viscosity
- reduced sugar

**Sweeteners**

- sweetness
- sweetness profile
- sugar reduction
- bulking

**Starches (native, clean label, functional)**

- enhanced creaminess
- improved texture and mouthfeel
  - stabilization
  - fat reduction
- binding & anti caking agent
- **improved storage stability**
- reduced splashing, color diffusion

SPONABLE YOGURT WITH FRUIT LAYER & CEREALS

RELEVANT PRODUCTS FOR

## Category – Ice cream



The background image is a top-down view of various ice cream products on a white marble surface. In the center, there is a text overlay that reads "THE natural UPGRADE" in a mix of serif and sans-serif fonts, with "natural" in a script font. Below this, it says "GIVE PERFECTION TO YOUR ICE CREAM." To the right, there is a small graphic of a number "4" with the text "DAIRY ICE CREAM WITH FRUIT" underneath it. Three light blue rounded rectangular callout boxes are overlaid on the image, each containing a category name and a list of benefits.

**Maltodextrins & Dextrose**

- enhanced mouthfeel
- improved viscosity
- reduced sugar
- control of freezing point

**Sweeteners**

- sweetness
- sweetness profile
- sugar reduction
- bulking
- crystallization

**Starches  
(native, clean label,  
functional)**

- improved storage stability
- reduced splashing, color diffusion
  - enhanced creaminess
- improved texture and mouthfeel
  - stabilization
  - melting control
  - fat reduction

RELEVANT PRODUCTS FOR

## Category – Infant & special nutrition



FOOD APPLICATIONS

## Dairy products – containing starch based products



FOOD APPLICATIONS

## Vegan products- Containing starch based products



## Starch based products

### Labelling Options

- Available declaration:
  - Starch
  - Corn starch
  - Potato starch
  - Wheat starch
  - Potato fiber
  - Potato flakes
  - Dextrose
  - Maltodextrins
  - Corn syrup
- Possible Claims:
  - No e-codes
  - No additives
  - Organic
  - Vegan
  - Gluten Free
  - Clean Label
  - Natural
  - Halal
  - Kosher
  - Zero waste product





## Thank you to our partners



**For further information, please see  
[www.procudan.dk](http://www.procudan.dk)**

**or contact**

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