



*ALLAND* & *ROBERT*

*Since 1884*

**ACACIA GUM BENEFITS FOR DAIRY  
& PLANT-BASED SUBSTITUTES**



**Mélanie DROFF**  
R&D Project Manager / Engineer



**Justine PIEFORT-PHILOCLES**  
R&D Project Manager / Engineer

Activité

Conversation

Équipes

Appels

Fichiers

...

M

02:37

Mute icon circled in red

Video icon

More options icon

Hand icon

Chat icon circled in red

Participants icon

Call icon

Mel (Invité)

Applications

Aide

info@allandetrobert.fr

Conversation de la réunion

Mélanie DROFF a rejoint la réunion.

Mélanie DROFF a renommé la réunion en Meeting.

Mel (Invité) a rejoint la réunion.

Saisissez un message

Send message button

# Agenda

ALLAND & ROBERT

About Alland & Robert

2/ Dairy and dairy substitutes

4/ Yogurts

6/ Ice creams

8/ Creams & cheeses

1/ What is Acacia gum?

3/ Milks

5/ Textured desserts

7/ Powdered forms

Conclusion

# Who is Alland & Robert?

ALLAND & ROBERT

## KEY FIGURES

**MANUFACTURED in France !** 

**1884**

**Foundation**  
of the company

**3**

**Spraydrying towers**

**6<sup>TH</sup>**

**Generation**  
family company

**70**

**Countries**  
Alland & Robert  
sells to

**100**

**Employees**  
in 2019

**95%**

**Export**



1

# What is Acacia gum?

# Acacia gum sourcing

ALLAND & ROBERT

## A NATURAL RESOURCE

**...SOURCED SUSTAINABLY DIRECTLY FROM NATURE...**

**Exudate  
of African  
wild Acacia  
trees**



**World production :**

60 000 MT  
/year



HAND MADE  
HARVEST IN THE  
GUM BELT



PREVENT  
DESERTIFICATION



PROVIDE REVENUES  
TO LOCAL  
POPULATIONS



## TREE FRIENDLY HARVEST

# What is Acacia gum?

ALLAND & ROBERT

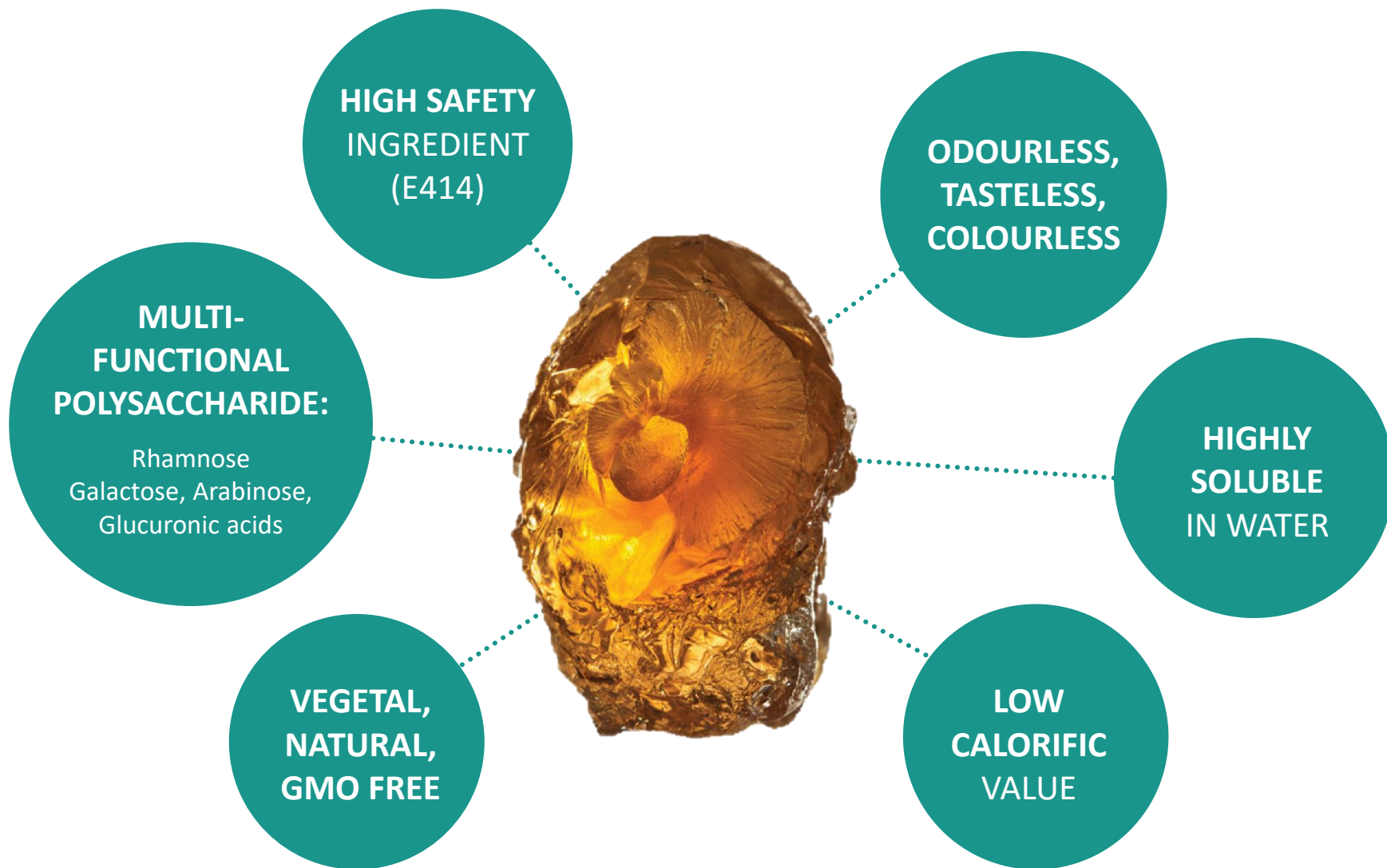
...WITH STRONG RELATIONSHIPS WITH FARMERS TO ENSURE THE HIGHEST  
RAW MATERIAL QUALITY

**NO**  
CHEMICALS  
PESTICIDES  
GMOs  
PRESERVATIVE

**100%**  
VEGETAL, GLUTEN FREE  
AND ALLERGEN FREE  
.....  
FULL TRACEABILITY  
THROUGH ORGANIC  
CERTIFICATION



# What is Acacia gum?

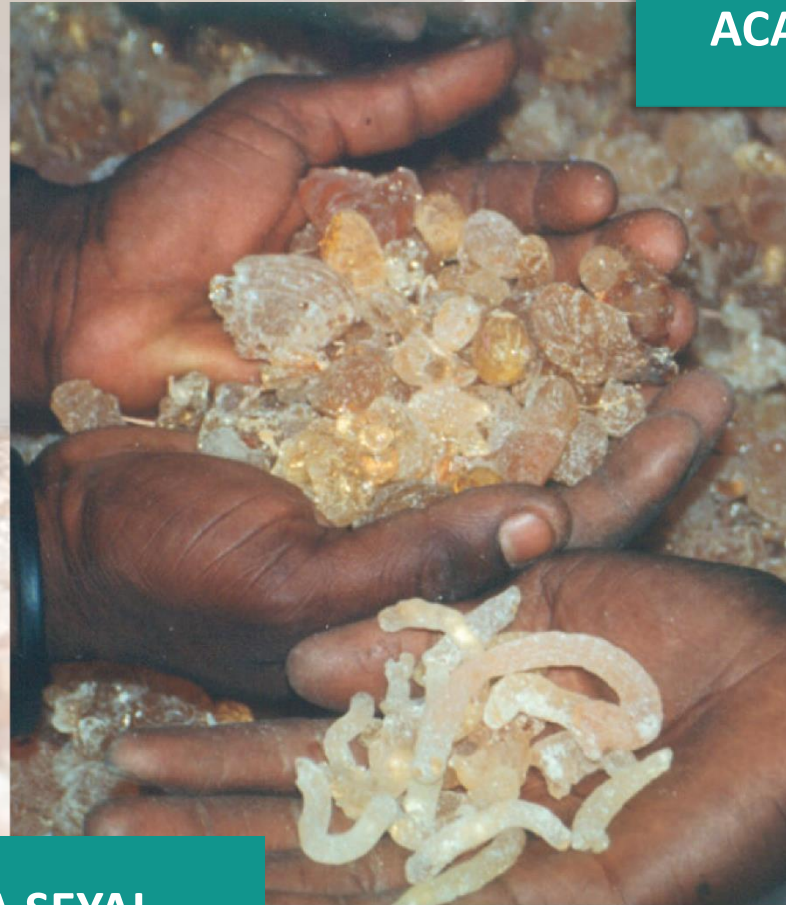


# What is Acacia gum?

ALLAND & ROBERT

THERE ARE 2 GRADES OF ACACIA GUM WITH IDENTICAL LABELLING

ACACIA SENEGAL

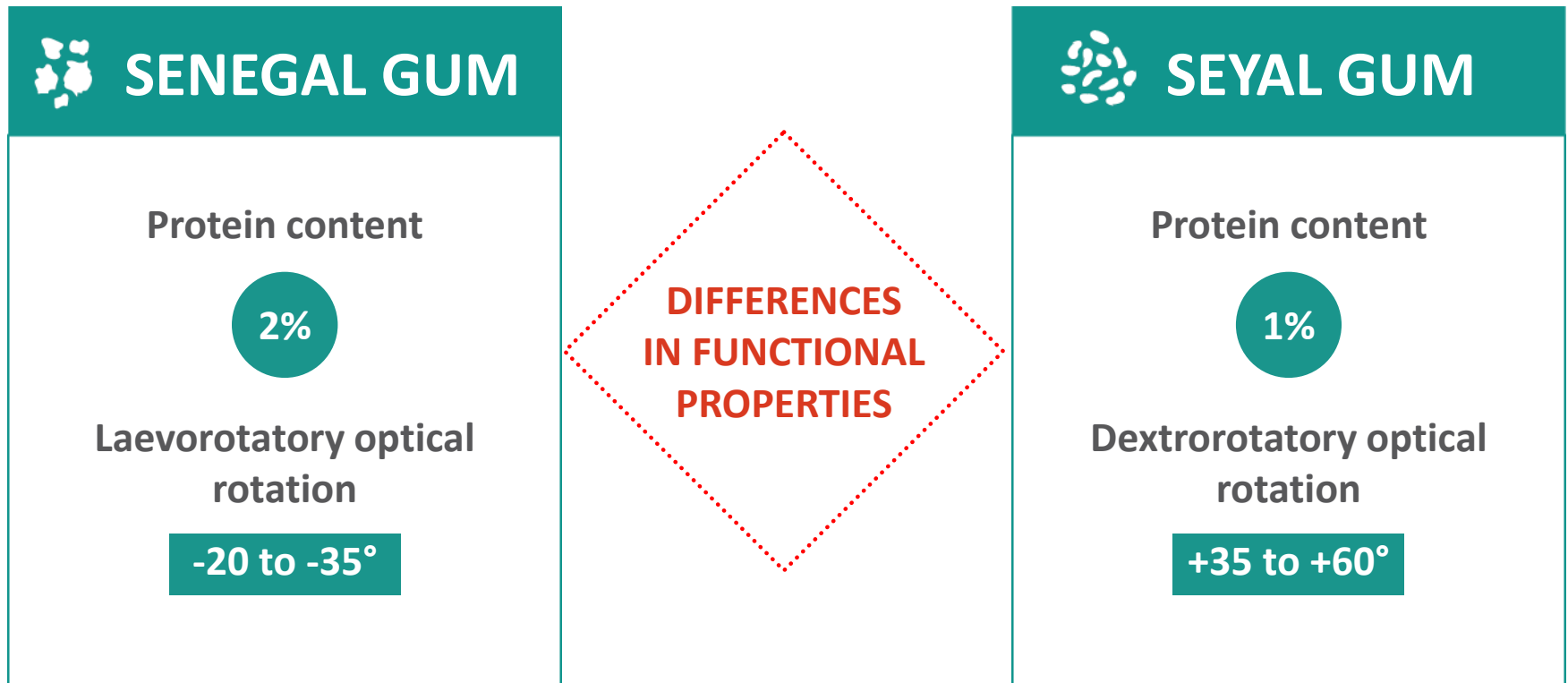


ACACIA SEYAL



# What is Acacia gum?

## SAME LABELLING BUT DIFFERENT FUNCTIONAL PROPERTIES



# What is Acacia gum?

## ACACIA GUM CHEMICAL STRUCTURE

### SUGARS

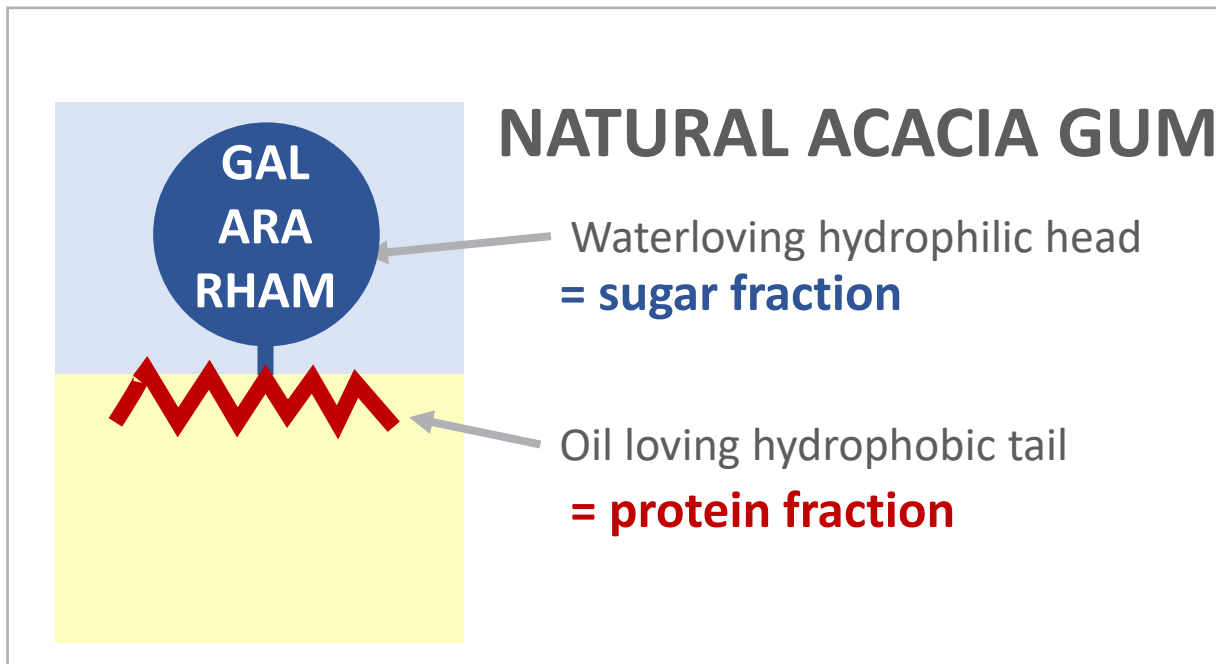
| Component                       | A. Senegal            | A. Seyal |
|---------------------------------|-----------------------|----------|
| Galactose (%molar)              | 34.9                  | 32.9     |
| Arabinose (%molar)              | 31.7                  | 53.1     |
| Rhamnose (%molar)               | 16.3                  | 2.7      |
| Glucuronic acid (%molar)        | Negative charges 16.3 | 6.1      |
| 4-O-Me-Glucuronic acid (%molar) | 0.8                   | 5.2      |

Same sugars but in different proportions → optical rotation

More negative charges in Acacia senegal → behaviour in products

# What is Acacia gum?

THE EMULSIFIER MAKES THE BRIDGE BETWEEN THE OIL AND THE WATER





# What is Acacia gum?

## INTERESTING FUNCTIONALITIES FOR DAIRY & DAIRY SUBSTITUTE PRODUCTS

### Thickener & Stabilizer



- Milk
- Yogurt
- Textured dessert
- Ice cream
- Powdered form
- Cream
- Cheese

### Water retention



- Yogurt
- Textured dessert
- Ice cream
- Cream
- Cheese

### Mouthfeel improvement



- Milk
- Yogurt
- Powdered form

### Emulsion & Encapsulation



(flavour, colour, nutrient)

- Milk
- Yogurt
- Textured dessert
- Ice cream
- Cream
- Cheese

**Nutritional  
advantage = FIBER  
INGREDIENT**

# What is Acacia gum?

ALLAND & ROBERT

## FIBER ENRICHMENT

ACACIA GUM  
IS A SOLUBLE FIBER.



Alland & Robert guarantees  
**a minimum fiber content of 90%**

*(measures according to the international method  
AOAC 985-29) for its products*

**Acacia Fiber 381 and Acacia Fiber 396.**

Fiber enrichment with acacia gum  
**can allow nutritional allegations**  
**according to the dosage** (« source of » /  
« enriched in fibers ») **and the regulation**  
**of every country.**

### AS A FIBER, ACACIA GUM OFFERS SEVERAL ADVANTAGES

RESISTANCE  
TO ACIDITY  
AND HEAT

LOW  
CALORIFIC  
VALUE

VERY LOW  
GLYCEMIC  
INDEX

NO SIDE EFFECT,  
DISCOMFORT  
OR STOMACH  
ISSUES

PH COMPATIBLE  
WITH MILK  
PROTEINS

SCIENTIFICALLY  
RECOGNIZED  
PREBIOTIC  
EFFECTS

NEUTRAL  
TASTE WITH  
VERY LOW  
VISCOSITY

POSITIVE  
EFFECT  
ON RHEOLOGY

NON  
CARIOGENIC  
EFFECT

2

## Dairy and dairy substitutes

# Dairy and dairy substitutes

Mintel

## MINTEL'S PERSPECTIVES: What consumers want and why

The COVID-19 pandemic: consumers **pay greater attention to their health** and seek ways to protect it by adopting '**preventative health**' measures such as **strengthening their immune system**.

→ **Healthy nutrition** has become a **key focus area**.

**Digestive health** is increasingly recognized as being an **integral contributor to overall health and wellbeing**. Scientific research finds **links between the gut microbiome** and aspects of health including **mental health, skin health and obesity**.

Dairy already has **global recognition** as an **important natural source of nutrition**. It is also a **valuable base ingredient for additional functional health ingredients**. There is consumer demand for **even more nutritious versions of dairy products** although taste should not be compromised.

**Embrace the clean label trend**: Consumers want **natural dairy products free from artificial, non-natural additives** which may be used as stabilizers, thickeners and preservatives.

→ **Innovation in the dairy industry** is driven by consumers' interest in **functional health dairy products, ethical eating** and the **clean label trend**.

→ **Acacia gum** is in line with these trends and customers' expectations as a **NATURAL and CLEAN LABEL fiber**.



# Dairy and dairy substitutes

## DIGESTIVE HEALTH

### Digestive health is a priority for consumers and an opportunity for dairy

Many consumers are continuing to struggle with digestive issues and brands can help by offering solutions such as added fibres, pre- and probiotics.

#### IMPORTANCE OF FERMENTED FOODS

38%

of UK consumers agree that it's important to include fermented food/drink in your diet

#### USE OF FUNCTIONAL FOODS

43%

of Indonesian\* adults would ideally like their diet to support digestive/gut health

#### MILK WITH FIBRE

46%

of Chinese consumers would be interested in trying flavoured milk with added fibre

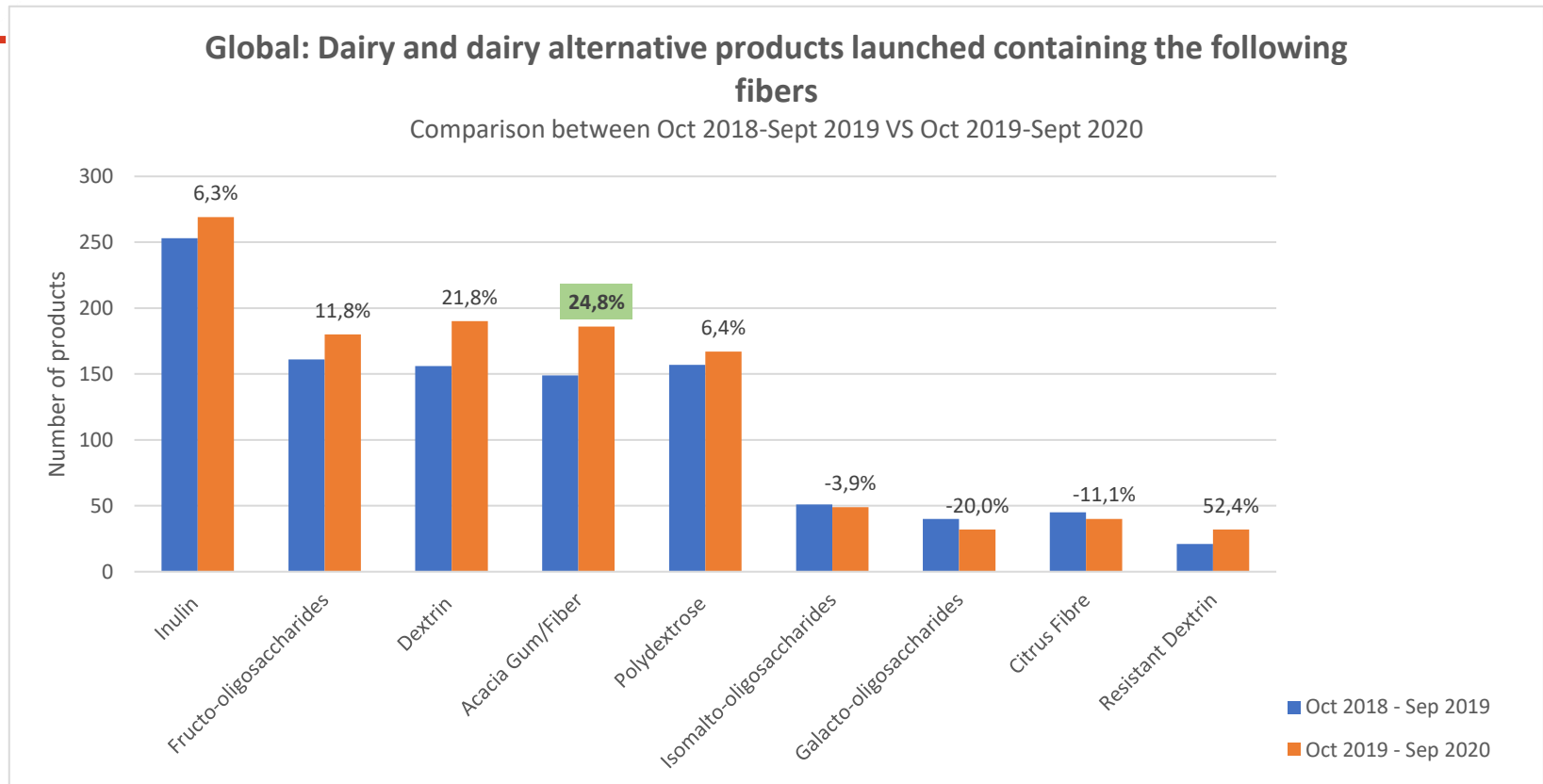
*Base: 1,398 internet users aged 16+ who eat/drink and buy yogurt/yogurt drinks; 1,000 internet users aged 18+; 2,971 internet users aged 20-49 who have drunk milk and flavoured milk in the last three months*

*Source: Lightspeed/Mintel; Dynata/Mintel; KuRunData/Mintel*



Read on [mintel.com](https://www.mintel.com)

## FIBER USAGES



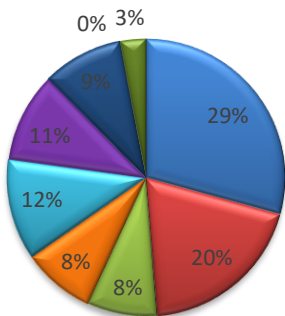
> Important growth for Acacia gum/fiber usage.

> Inulin appears in more products than acacia gum but there are some drawbacks using this fiber.

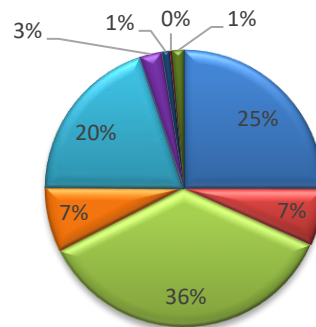
# Dairy and dairy substitutes

## FIBER USAGES (between Oct 2015 and Sept 2020)

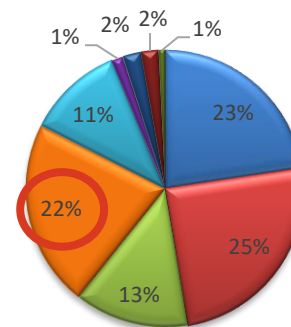
White Milk



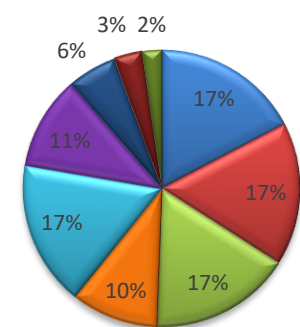
Flavoured Milk



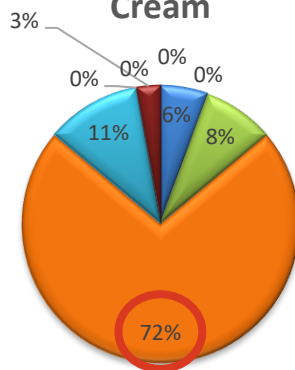
Spoonable Yogurt



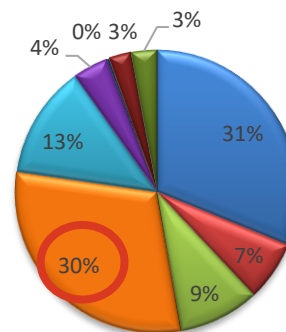
Drinking Yogurt



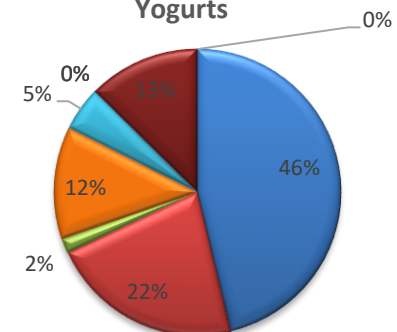
Cream



Plant Based Drinks



Plant Based Spoonable Yogurts



■ Inulin

■ Fructo-oligosaccharides

■ Dextrin

■ Acacia Gum/Fiber

■ Polydextrose

■ Isomalto-oligosaccharides

■ Galacto-oligosaccharides

■ Citrus Fibre

■ Resistant Dextrin

## ACACIA FIBER COMPARED TO OTHER COMMON SOLUBLE FIBERS

| Disadvantages                           |            |              |                              |                    |                                       |
|-----------------------------------------|------------|--------------|------------------------------|--------------------|---------------------------------------|
| Common fibers used in the food industry | Discomfort | Side effects | Synthetic unnatural additive | Chemically treated | Viscosity addition to the end product |
| <b>Acacia fiber</b>                     |            |              |                              |                    |                                       |
| Inulin/fructo/galacto-oligosaccharides  | •          | •            |                              |                    |                                       |
| Lactulose                               | •          | •            |                              |                    |                                       |
| Polydextrose                            | •          | •            | •                            |                    |                                       |
| Resistant starches and Maltodextrins    |            |              | •                            | •                  |                                       |
| Pectins                                 |            |              |                              |                    | •                                     |
| Gellan/xanthan gum                      |            |              |                              |                    | •                                     |
| Modified cellulose                      |            |              | •                            | •                  | •                                     |
| Galactomannans (guar/locust/bean gum)   |            |              |                              |                    | •                                     |
| Alginates                               |            |              |                              |                    | •                                     |

## MINTEL'S PERSPECTIVES ON PLANT-BASED DAIRY ALTERNATIVES

MINTEL

■ Plant-based dairy alternatives are no longer niche – major dairy manufacturers are also exploring this category and **compete to innovate plant-based dairy alternatives**.

➔ For example, The **Groupe Danone** has a pending **patent** which covers a plant-based **allergen-free coffee creamer** composition prepared from vegetable oil, **acacia Senegal gum**, xanthan gum, tragacanth or gellan. The composition is substantially free of sunflower lecithin and of nut components.

■ Consumers are increasingly aware of the industrial dairy production impact on the environment and animal welfare => they are looking for product alternatives. Plant-based dairy alternatives are not only **good for the environment** but are also one of the best options for **individuals with milk allergies/intolerance**.

45%

of Polish consumers agree that [swapping dairy-based yogurt](#) alternatives helps the environment

■ Opportunities for companies/brands are: to communicate their **commitment to environment and sustainability**, to highlight **functional benefits such as for gut health**.

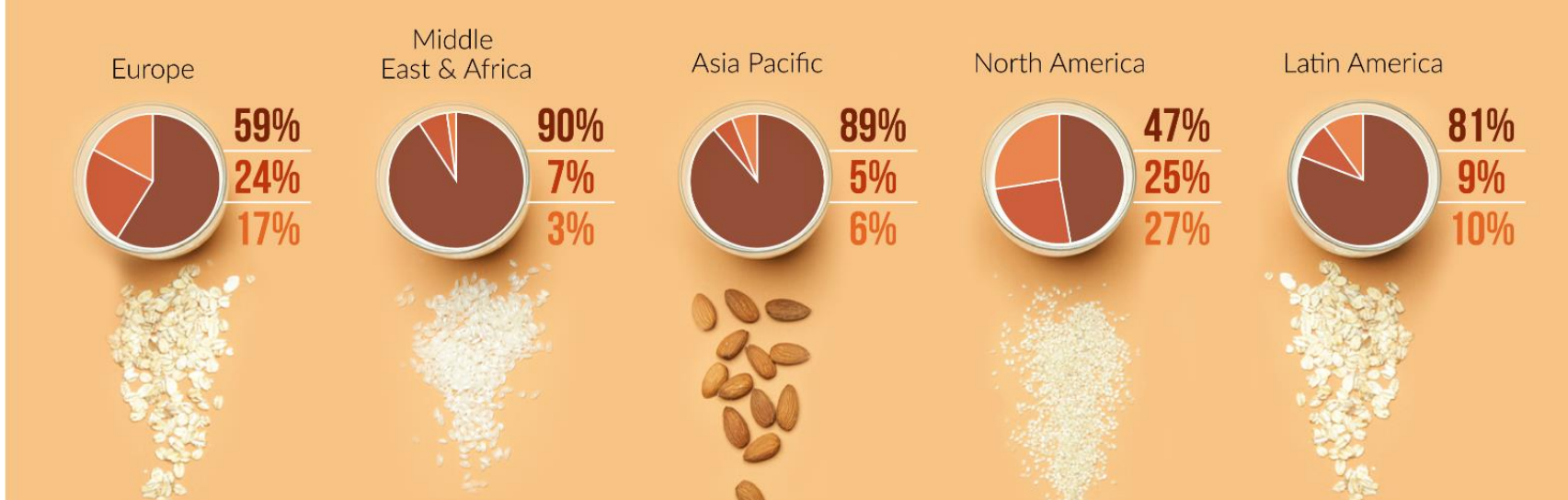
➔ **Acacia gum is in compliance with these companies/brands' opportunities.**



## MINTEL'S PERSPECTIVES ON PLANT-BASED DAIRY ALTERNATIVES

Global: share of launches, by sub category, April 2019-March 2020

● Plant-based drinks ● Plant-based spoonable yogurt ● Plant-based ice cream & frozen yogurt



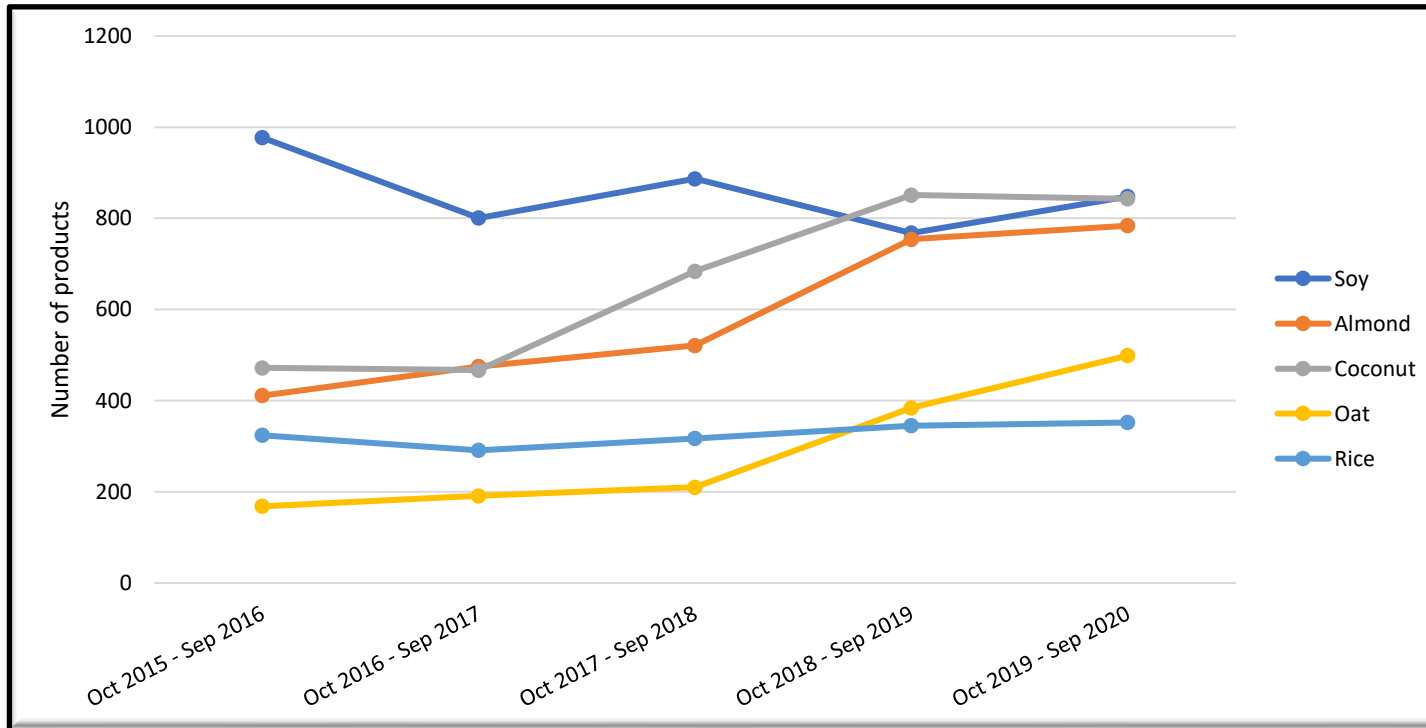
> Plant-based products have become prevalent in the past years everywhere in the world.

> **Plant-based drinks** still represent the **majority of launches**, especially in Middle East & Africa, Asia Pacific and Latin America.

> **Plant-based yogurts and ice creams** are taking more and more parts in Europe and North America.

# Dairy and dairy substitutes

## PLANT-BASED INGREDIENTS



### Evolution between 2015 & 2020

|         |        |
|---------|--------|
| Soy     | -13,2% |
| Almond  | 90,8%  |
| Coconut | 78,6%  |
| Oat     | 197,0% |
| Rice    | 8,6%   |

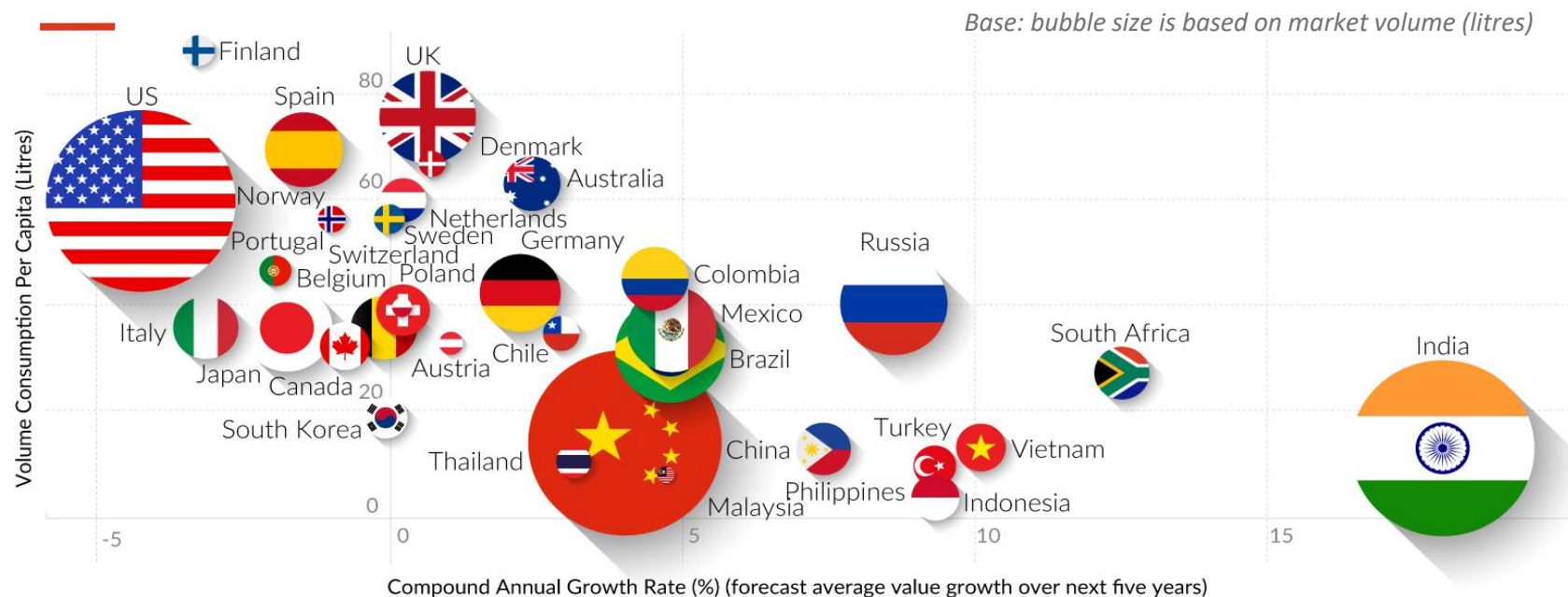
> **Soy decreased** over the past 5 years and shares its first position with coconut, followed by almond.

> **Oatmilk popularity is growing very quickly:** its taste, health benefits and superior sustainability has made it the next big plant-based alternative.

3

Milks

## GLOBAL MARKET OVERVIEW – Regular milk



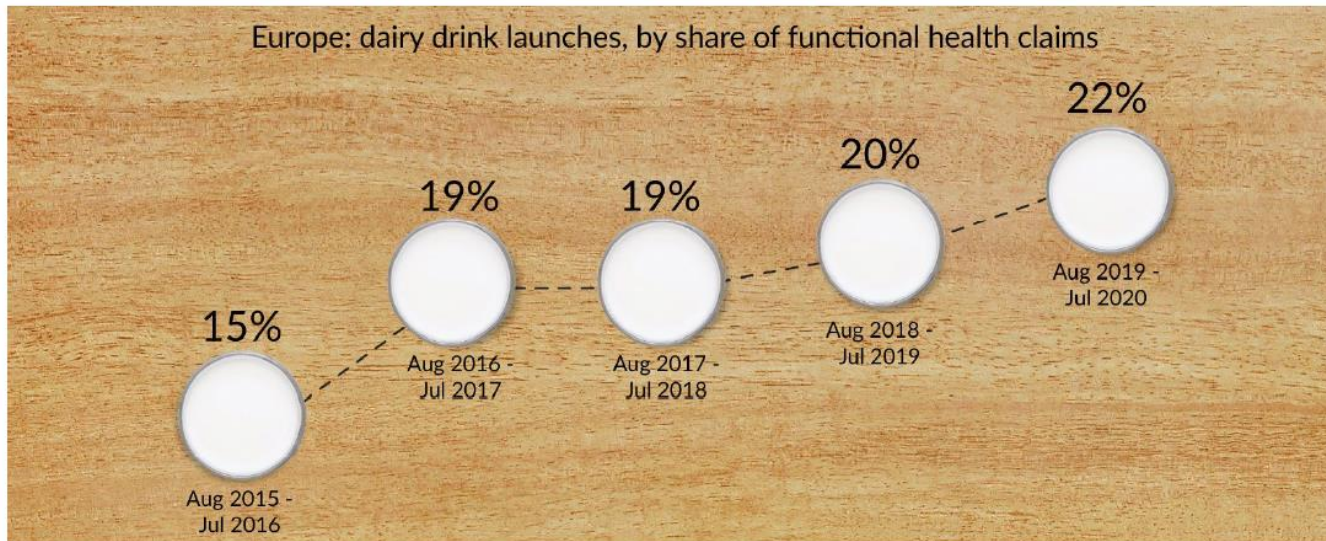
> Very **dynamic** market

> **3 major** markets due to high volumes: **USA, China and India**. But **Indian market** is also expected to see **considerable value growth** over the **next 5 years**

> Numerous very promising markets in **APAC regions, Turkey, South Africa and South America**

> **European markets** show very **significant volume consumption per capita**

## EUROPE MARKET OVERVIEW – Regular milk



Source: Mintel GNPD

- Thanks to intrinsic nutrients' benefits or enrichment
- Functional claims:

Digestive

Bone health

Energy

Prebiotic

Probiotic

Immune system

➔ Acacia gum is in compliance with these trends and claims.



## ACACIA GUM USES IN REGULAR, PLANT-BASED AND FLAVOURED MILKS

### > Emulsification of oil droplets

### ■ Flavours, colours or components for nutritional enrichment purposes

- Nutrition improvement of animal-based milks
- Nutritional lack of plant-based milks (e.g. no  $\text{Ca}^{2+}$ )

### > Stabilizes and prevents from disruption phenomenon

### > Improves mouthfeel and brings texture

- e.g. Chocolate milks

### > Fiber enrichment

Vitamins:  
D3, B2,  
B12, E, A,  
C,..

Minerals:  
Calcium,  
Zinc, Iron,  
Magnesium,..

Anti  
plant

Digestive  
health

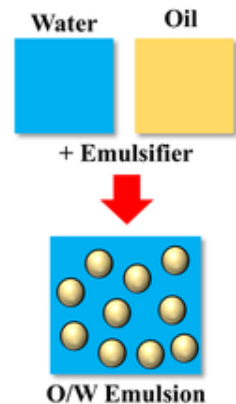
## SPECIFIC ACACIA GUM USES IN PLANT-BASED MILKS

### > Acacia Gum tensioactive properties in plant-based milks fabrication

- Doesn't exist in a natural form
- Formation of oil in water emulsion
- Homogenization of oil bodies, water and **emulsifiers** with specific equipment

Isolated from plant seed (beans or nuts)

Natural polysaccharides such as Acacia Gum

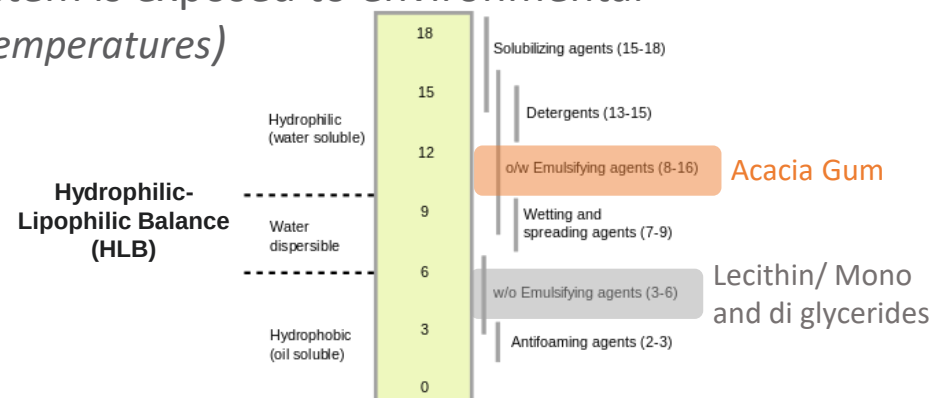


### > Acacia Gum complies with required characteristics of final product

- Bland flavour, light colour and low viscosity
- Stability during shelf life and when the system is exposed to environmental stresses (*pH changes, salts, ingredients, and temperatures*)

*Lecithin/ Mono-di glycerides stabilize **water in oil** system → Carry over from ingredients such as hazelnut or almond paste*

***Doesn't take part in final product stabilization***



## STUDY ON THE ACACIA GUM/KARAYA BLEND IMPACT IN UNSTABLE PLANT-BASED MILKS

### TRIALS DONE IN OUR APPLICATION LABORATORY

| Ingredients                                            | %          |
|--------------------------------------------------------|------------|
| Plant-based milk ( <i>Coconut, oat, soy, rice,..</i> ) | Up to 100  |
| Syndeo ( <i>Acacia Gum/Karaya mix</i> )                | 0,2 to 0,5 |

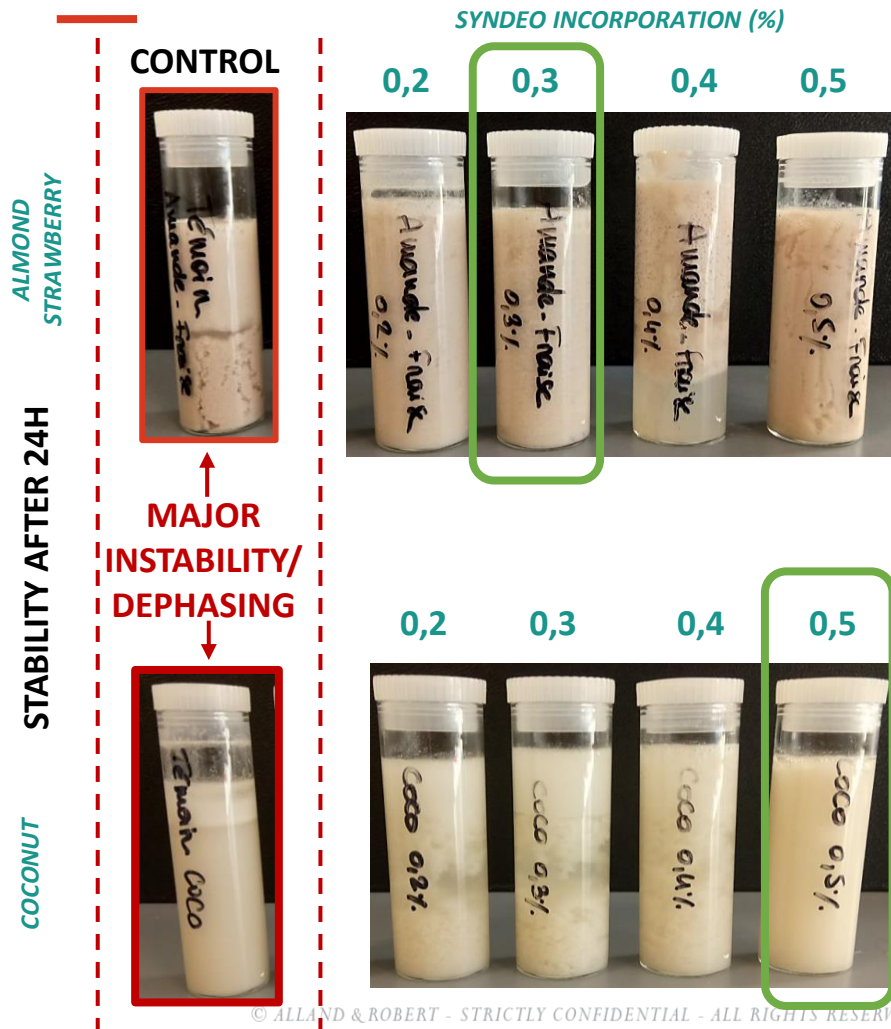
### PROCESS:

- Add the Syndeo to the beverage
- Blend for 4 minutes with a mixer
- Pour the mix into small containers
- Leave cool for stability evaluation over the time

### OUR OBJECTIVES:

- Improve stability of unstable plant-based milks
- Do not change the beverage sensory profile and global appreciation
- Evidence the use of Acacia Gum in store-bought plant-based milks as stabilizer

## STUDY ON THE BLEND ACACIA GUM/KARAYA IMPACT IN UNSTABLE PLANT-BASED MILKS



### Optimization of incorporation to reach stability:

|                   |        |
|-------------------|--------|
| Spelt             | 0.15 % |
| Oat               | 0.30 % |
| Almond-Strawberry | 0.30 % |
| Soy               | 0.40 % |
| Rice              | 0.40 % |
| Coconut           | 0.50 % |

## INTEREST IN SYNDEO: COMBINAISON OF ACACIA GUM AND KARAYA

### Acacia Gum / Karaya gums blend = 100% vegetal

- To combine texture, stabilizing properties, and water retention
- Resistant to heat, microwaves and thawing, stable on a wide range of pH
- Stabilization of vegetal based milks
- Suspending agent in beverages and alcohol drinks
- Stabilization of flavours/colours



Syndeo® is an innovative range of blends of natural and vegetal hydrocolloids that can be used as a functional additive in food and drinks. Thanks to Alland & Robert expertise and research on natural plant exudates, Syndeo® will bring stabilizing and texturing properties to food and beverages, fulfilling especially new needs regarding texture improvement.

The hydrocolloids used in Syndeo® are natural plant exudates that are vegetal and clean label friendly:

- 100% all natural and vegetal gum exudates coming from trees
- Non starch polysaccharides, GMO-free products with constant traceability
- Soluble fiber with no additives, preservatives or allergens
- The blends combine stabilizing, texturing and emulsifying properties for a multifunctional and efficient additive.

#### SYNDEO® BENEFITS

- Transparent aspect and neutral color
- Excellent resistance to micro-waves, freeze and thaw, ideal for ready-to-eat meals and sauces
- High viscosity for a significant texturant effect
- No texture modification at 65°C
- Stable on a wide pH range
- No sugar content, can be used in no-added sugar or sugar-free recipes
- Can be dispersed at both cold and hot temperatures.
- Provide great particulate suspension properties
- Efficient at very low dosage (less than 1%)

#### FUNCTIONAL PROPERTIES OF THE SYNDEO® RANGE

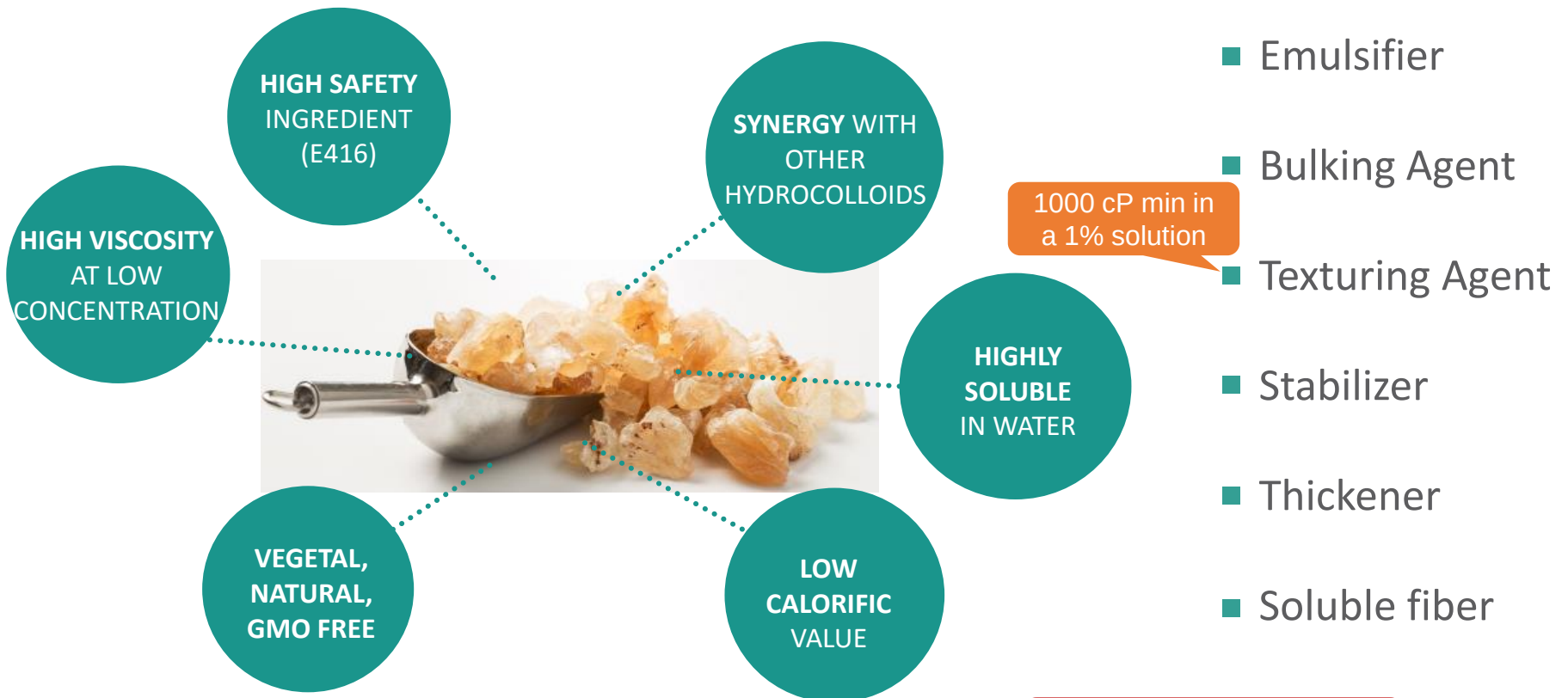
|                                                                                                         |                                                                                                          |                                                                                                             |
|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|  Stabilizing agent |  Mouthfeel improver |  Freeze/thaw stability |
|  Thickening agent  |  Texturizing agent  |  Syneresis avoidance   |
|  Emulsifying agent |  Moisture retention |                                                                                                             |

#### USES IN THE FOOD & BEVERAGES INDUSTRIES





## ANOTHER NATURAL INGREDIENT OF INTEREST



**No Acceptable Daily Intake specified (FAO / WHO JECFA, 1988)**

**Please check your own country legislation**

## PRODUCT EXAMPLES: Milks – Dairy

ACACIA GUM  
declared as **stabilizer**

**Combination** with other  
hydrocolloids



| Delicious Milk with Calcium                                                                  | Whole Milk Chocolate Milk                                                                             |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Japan                                                                                        | USA                                                                                                   |
| Meiji, Japan                                                                                 | Clover Stornetta Farms, USA                                                                           |
| Meiji Oishii                                                                                 | Clover Sonoma                                                                                         |
| Raw milk (more than 50%), skimmed condensed milk, calcium carbonate, stabiliser (gum arabic) | Milk, sugar, cocoa (processed) (alkali), gum acacia, guar gum, gellan gum, natural flavor, vitamin D3 |



## PRODUCT EXAMPLES: Milks – Dairy

ACACIA GUM  
introduced **with flavour**

ACACIA GUM  
declared as **stabilizer**



| Chocolate Flavored UHT Milk with 0% Lactose                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Chocolate Milk Drink                                                                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Brazil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Nigeria                                                                                                                                                                                       |
| Lacticínios Tirol, Brazil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Vital Pharmaceuticals, UK                                                                                                                                                                     |
| Tirol Tirolzinho                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Vivo                                                                                                                                                                                          |
| Whey, reconstituted whey, pasteurized milk, sugar, milk cream, alkaline cocoa powder, stabilizer/thickener (carboxymethyl cellulose, microcrystalline cellulose, dextrose, processed Eucheuma seaweed, carrageenan), dry malt extract, vitamins (biotin, niacinamide, pantothenic acid, vitamin B1, vitamin B12, vitamin B2, vitamin B6, vitamin C, maltodextrin), <b>nature identical vanilla flavor</b> (maltodextrin, flavoring, <b>thickener (arabic gum)</b> ), stabilizers salt (sodium citrate, sodium triphosphate, sodium diphosphate, monosodium phosphate), enzyme (lactase), nature identical hazelnut flavor | Whole milk powder, skimmed milk powder, sugar, acesulfame-K, aspartame, cocoa powder, malt extract, water, chocolate flavour, citric acid, potassium sorbate, <b>stabilisers (E412, E414)</b> |



## PRODUCT EXAMPLES: Milks – Dairy

ACACIA GUM  
declared as **stabilizer**



| Fresh Rayeb Drink                                                                                                              | Low Sugar Formula UHT Milk with Malt Extract                                                                                                                                                                                                                             |
|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Egypt                                                                                                                          | Thailand                                                                                                                                                                                                                                                                 |
| Danone, Egypt                                                                                                                  | Dairy Plus, Thailand                                                                                                                                                                                                                                                     |
| Danone                                                                                                                         | Dutch Mill Dmalt Malt Gold                                                                                                                                                                                                                                               |
| Pasteurised modified natural cow's milk, milk whey, <b>arabic gum (E414)</b> , natural food stabiliser (E440), lactic cultures | Cow's milk (25%), malt extract (5%), full cream milk powder (4%), non fat milk powder (2%), sugar (1%), vitamins and minerals (0.159%), emulsifier (INS 471, INS 452(i)), <b>stabiliser</b> (INS 460(i), INS 407, <b>INS 414</b> , INS 466), acidity regulator (INS 525) |



## PRODUCT EXAMPLES: Milks – Dairy

ACACIA GUM  
introduced **with minerals**

ACACIA GUM  
introduced **with flavour**



| Fresh Daily Milk                                                                                                                                                                                                                                                                | 1% Low Fat X-Tra Protein Milk                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| South Korea                                                                                                                                                                                                                                                                     | Puerto Rico                                                                                                                                                                                                                                                                                                                          |
| Paris Croissant, South Korea                                                                                                                                                                                                                                                    | Suiza Dairy, Puerto Rico                                                                                                                                                                                                                                                                                                             |
| Paris Baguette Achim&                                                                                                                                                                                                                                                           | Dutch Mill Dmalt Malt Gold                                                                                                                                                                                                                                                                                                           |
| Raw milk (99.13%) (1 grade A milk), calcium carbonate mixed formulation (0.855%) (calcium carbonate, soy dietary fibre), ferric ammonium citrate, <b>vitamin D3 mixed formulation</b> (vitamin D3, <b>gum arabic</b> , sugar, corn starch, MCT oil, silicon dioxide, vitamin E) | Low fat milk, milk protein concentrate (pasteurized skim milk), gellan gum, guar gum, mono- and diglycerides of fatty acids (emulsifier, stabilizer), <b>natural sweet cream flavor</b> ( <b>gum acacia</b> , maltodextrin), sucralose, liquid lactase enzyme (glycerol, water, beta-galactosidase), vitamin D3, vitamin A palmitate |





## PRODUCT EXAMPLES: Milk based beverages – Dairy

ACACIA GUM  
declared as **clouding agent**

ACACIA GUM  
declared as **emulsifier**

| Peach & Mango Flavoured Dairy Fruit Mix                                                                                                                                                                                                                                                                                                                                                                               | Lemon Flavoured Sherbet with Milk                                                                                                                                                                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| South Africa                                                                                                                                                                                                                                                                                                                                                                                                          | Algeria                                                                                                                                                                                                                                  |
| Clover, South Africa                                                                                                                                                                                                                                                                                                                                                                                                  | Ramdy, Algeria                                                                                                                                                                                                                           |
| Clover Tropika                                                                                                                                                                                                                                                                                                                                                                                                        | None                                                                                                                                                                                                                                     |
| Water, sugar, skim milk (cow's milk), recombined skim milk (cow's milk), reconstituted orange juice, stabiliser (carboxymethyl cellulose (E466)), citric acid (E330), <b>clouding agent (E414, E445)</b> , flavourings, antifoaming agent (E900), acidity regulator (E331), non-nutritive sweetener (sucrose E955), colourants (E104, E110, E124), preservatives (sodium benzoate, sodium metabisulfite (E211, E223)) | Treated water, sugar, skimmed milk powder, lemon flavour, food additives ( <b>emulsifier (INS 414)</b> , thickener (INS 445, INS 466, INS 412), preservative (INS 211), colour (INS 102, INS 131, INS 140), acidity regulator (INS 330)) |



## PRODUCT EXAMPLES: Milk based beverages – Dairy

ACACIA GUM  
introduced with coloring

| Banana Milk Drink                                                                                                                                                                                                                                                                                                                                                                                                               | Apple Milk                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Taiwan, China                                                                                                                                                                                                                                                                                                                                                                                                                   | Taiwan, China                                                                                                                                                                                                                 |
| Tung Shaing Foods, Taiwan                                                                                                                                                                                                                                                                                                                                                                                                       | Standard Foods, Taiwan                                                                                                                                                                                                        |
| Rico                                                                                                                                                                                                                                                                                                                                                                                                                            | Fresh Delight                                                                                                                                                                                                                 |
| Water, sugar, whole milk powder, acetylated distarch adipate, banana juice, skim milk powder, flavouring, xanthan gum, glycerin fatty acid ester, sucrose fatty acid esters, <b>beta carotene</b> (glucose syrup, maltodextrin, <b>arabic gum</b> , sunflower oil, L-ascorbyl palmitate (antioxidant), vitamin C (antioxidant), silicon dioxide, vitamin E (antioxidant), beta carotene (artificial), salt, sodium bicarbonate) | Water, sucrose, milk powder, fresh milk, sodium carboxymethyl cellulose, flavouring, citric acid, malic acid, apple juice concentrate, sodium citrate, <b>carotene</b> ( <b>arabic gum</b> , safflower seed oil, phytic acid) |



## PRODUCT EXAMPLES: Condensed milks – Dairy

ACACIA GUM  
declared as stabilizer



| Mango Flavoured Sweetened Condensed Milk                                                                                                                                                                                                                                                                                                                                                                              | Vegetable Fat Filled Sweetened Condensed Milk                                                                                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Thailand                                                                                                                                                                                                                                                                                                                                                                                                              | Ghana                                                                                                                                                                          |
| F&N Dairies, Thailand                                                                                                                                                                                                                                                                                                                                                                                                 | Marijampoles Pieno Konservai, Lithuania                                                                                                                                        |
| Tea Pot                                                                                                                                                                                                                                                                                                                                                                                                               | Markomilk                                                                                                                                                                      |
| Sugar (47.8%), palm oil (9.3%), maltodextrin (7.0%), whey powder (5.8%), fresh milk (5%), milk powder (3.5%), mango powder (0.5%), vitamin (0.003%), added nature identical flavour, natural colour (INS 160a(i)), artificial colour (INS 171), thickener (INS 422), acidity regulator (INS 330), antioxidant (INS 300), stabiliser (INS 407, INS 415, INS 460(i), INS 466, INS 414), anticaking agent (INS 341(iii)) | Milk origin matter (46%) (whey, skimmed milk, buttermilk), sugar (46%), palm oil (8%), stabiliser (E415, E414, E332, E339), emulsifiers (E471, soy lecithin), cream flavouring |





## PRODUCT EXAMPLES: Milks – Plant-based

with  
Acacia fiber



| Oat Coconut Milk                                                                                                                                                                                                                                               | Oat Based Smoothie with Mango & Citrus                                                                                                                                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| New Zealand                                                                                                                                                                                                                                                    | Norway                                                                                                                                                                                                                                                                                               |
| Little Island, New Zealand                                                                                                                                                                                                                                     | O. Kavli, Sweden                                                                                                                                                                                                                                                                                     |
| Little Island Coconut Creamery                                                                                                                                                                                                                                 | Planti                                                                                                                                                                                                                                                                                               |
| Organic oat milk (85%) (filtered artisan water, oat flour (5%)), organic coconut milk (14%) (filtered artisan water, organic coconut cream), mineral (plant calcium), <b>stabilisers (organic acacia fibre, organic carob bean gum, gellan gum)</b> , sea salt | Water, mango (15%), orange juice (9.8%), oatmeal (7.5%), lemon juice (5.2%), <b>acacia fibre</b> , rapeseed oil, emulsifier (E472e), natural flavouring, stabilizer (sodium alginate), salt, maize starch, calcium phosphate, malic acid, vitamins (vitamin D2, riboflavin, folic acid, vitamin B12) |





## PRODUCT EXAMPLES: Milks – Plant-based

“high in fibre”

3g/100g

with  
Acacia fiber

“a good source  
of fiber”

1.3g/100g



| Sunny Oat Snack Drink                                                                                                                           | Original Organic Plant Protein Milk                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Finland                                                                                                                                         | USA                                                                                                                                                                                                                                     |
| Ravintoraisio, Finland                                                                                                                          | Suja Life, USA                                                                                                                                                                                                                          |
| Elovena                                                                                                                                         | Suja                                                                                                                                                                                                                                    |
| Water, oat flake (10%), sea buckthorn (7%), sugar, rapeseed oil, <b>vegetable fibre (acacia fibre)</b> , thickener (pectin), flavour, vitamin C | Water, organic pea protein, organic cane sugar, organic sunflower seed butter, organic flax seeds, <b>organic acacia fiber</b> , organic vanilla extract, calcium phosphate, gellan gum, vegan vitamin D2 (botanical Agaricus bisporus) |







## PRODUCT EXAMPLES: Milks – Plant-based

with  
*Acacia fiber*



| Cold Milled Almond Milk                                                                                                                     | Choco-Banana Protein Cashewmilk                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| South Africa                                                                                                                                | Canada                                                                                                                                                                                                                                           |
| Soma Food, South Africa                                                                                                                     | Jus Dose, Canada                                                                                                                                                                                                                                 |
| Soma.                                                                                                                                       | Dose Nothing Else                                                                                                                                                                                                                                |
| Purified water, almonds, dates, <b>acacia fibre</b> , pea protein, vanilla extract, sunflower lecithin, carob bean gum, Himalayan pink salt | Cashewmilk (filtered water, cashews), organic plant-based protein (organic pea protein, organic sprouted brown rice protein, organic flax seeds), banana, cacao powder, maple syrup, sea salt, <b>acacia fiber</b> , natural flavour, monk fruit |





## PRODUCT EXAMPLES: Milks – Plant-based

Combination with  
gellan gum

ACACIA GUM  
declared as stabilizer



| Cold Brew Coffee with Chocolate Oatmilk                                                                                                                                                                                                                                                                    | Low Sugar Soy Milk with Japanese Rice Germ                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| USA                                                                                                                                                                                                                                                                                                        | Thailand                                                                                                                                                                                                                                             |
| Stumptown Coffee Roasters, USA                                                                                                                                                                                                                                                                             | Dutch Mill, Thailand                                                                                                                                                                                                                                 |
| Stumptown Coffee Roasters                                                                                                                                                                                                                                                                                  | Dutch Mill Dna GABA                                                                                                                                                                                                                                  |
| Oatmilk (water, oats), cold brew coffee (water, coffee), 2% or less of (low erucic acid rapeseed oil, cane sugar, cocoa powder processed (alkali), dipotassium phosphate, <b>gum acacia</b> , <b>gellan gum</b> , calcium carbonate, tricalcium phosphate, sea salt, natural flavors, dicalcium phosphate) | Soy milk (94%), sugar (3.0%), Japanese rice germ (1.4%), palm oil (0.6%), coconut oil (0.3%), vitamin and mineral premix (0.015%), <b>stabiliser</b> (INS 460(i), INS 466, INS 407, <b>INS 414</b> ), emulsifier (INS 471), added artificial flavour |





## PRODUCT EXAMPLES: Milks – Plant-based

Combination with other hydrocolloids



| Utterly Original Dairy-Free Plant-Based Drink                            | Semi Skimmed Plant-Based Drink                                                                                                                                                                    |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Malaysia                                                                 | Brazil                                                                                                                                                                                            |
| Metier Food, Malaysia                                                    | NotCo Brasil Distribuição e Comércio de Produtos Alimentícios, Brazil                                                                                                                             |
| Snappea                                                                  | X NotCo Not Milk                                                                                                                                                                                  |
| Pea protein, cane sugar, sunflower oil, acacia gum, gellan gum, minerals | Water, pea protein, sugar, chicory fiber, pineapple, coconut oil, sunflower oil, natural flavorings, salt, cabbage, vitamin D2, vitamins B12, dipotassium phosphate, gum arabic, gellan gum, EDTA |





## PRODUCT EXAMPLES: Milks – Plant-based

Combination with other hydrocolloids

| Black Bean Calcium Soy Milk                                                                                                                                                                                                                                                                                                               | Soy Milk                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| South Korea                                                                                                                                                                                                                                                                                                                               | South Korea                                                                                                                                                                                                                                              |
| GS Retail, South Korea                                                                                                                                                                                                                                                                                                                    | Daesang Life Science, South Korea                                                                                                                                                                                                                        |
| Real Price                                                                                                                                                                                                                                                                                                                                | Daesang Wellife The                                                                                                                                                                                                                                      |
| Raw soy milk (soybean solid (7%), soybean), purified water, fructose, small black bean extract (solid (7%)), rice bran oil, dextrin, oligosaccharide, black sesame seed paste, nutritional enhancer, dried yeast powder (D3), emulsifier, refined salt, <b>gum arabic</b> , acidity regulator, <b>xanthan gum</b> , artificial flavouring | Raw soybean milk (70%) (soybean, soybean solid (7%)), purified water, white sugar, soy milk, calcium carbonate, soybean lecithin, refined salt, artificial flavouring, emulsifier, fortifying nutrient, <b>arabic gum</b> , corn starch, MCT oil, silica |





## PRODUCT EXAMPLES: Milks – Plant-based

Combination with  
gellan gum



| Chocolate Flavor Almond Drink                                                                                                                                                                                                                                                                                      | Coconut Unsweetened Fortified Almond Beverage                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chile                                                                                                                                                                                                                                                                                                              | Canada                                                                                                                                                                                                                                |
| Wal-Mart, Chile                                                                                                                                                                                                                                                                                                    | Aliments Natura Foods, Canada                                                                                                                                                                                                         |
| Great Value Organic                                                                                                                                                                                                                                                                                                | Natur-a                                                                                                                                                                                                                               |
| Filtered water, almond base (water, almond (1.5%)), organic sugar, organic cocoa powder, <b>arabic gum</b> , tricalcium phosphate, organic sunflower oil, sea salt, <b>gellan gum</b> , sunflower lecithin, zinc oxide, riboflavin, vitamin A palmitate, ergocalciferol (vitamin D2), cyanocobalamin (vitamin B12) | Almond base (filtered water, almonds), coconut cream, calcium carbonate, <b>acacia gum</b> , potassium citrate, sea salt, natural flavors, <b>gellan gum</b> , zinc gluconate, vitamin A acetate, vitamin B12, riboflavin, vitamin D2 |







## PRODUCT EXAMPLES: Milks – Plant-based

Combination with other hydrocolloids

ACACIA GUM declared as stabilizer



| Organic Dairy-Free Half & Half                                                                                                                            | Macadamia Milk                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mexico                                                                                                                                                    | Thailand                                                                                                                                                                                                                                                                          |
| Forager Project, USA                                                                                                                                      | Nam Prik Maesri, Thailand                                                                                                                                                                                                                                                         |
| Forager Project                                                                                                                                           | Max Grinta                                                                                                                                                                                                                                                                        |
| Cashewmilk (water, cashews), coconut cream, dates, sunflower lecithin, tricalcium phosphate, <b>acacia</b> , <b>gellan gum</b> , natural flavor, sea salt | Mineral water, macadamia milk (83.5%), cashew milk (11.0%), corn soluble fiber (3.0%), organic coconut flower nectar (1.35%), pea protein (0.57%), 1,3/1,6 beta-glucan (0.03%), <b>stabiliser (arabic gum (INS 414))</b> , xanthan gum (INS 415)), added nature identical flavour |





## PRODUCT EXAMPLES: Milks – Plant-based

ACACIA GUM  
declared as **stabilizer**

ACACIA GUM  
declared as **emulsifier**



| Coconut Drink                                                                                                                                                                                                                                                                                                                                                                                                                                          | Plain Camargue Rice Drink                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Poland                                                                                                                                                                                                                                                                                                                                                                                                                                                 | France                                                                                                                                                                                          |
| Koko Dairy Free, UK                                                                                                                                                                                                                                                                                                                                                                                                                                    | Nutrition & Nature, France                                                                                                                                                                      |
| Koko Dairy Free                                                                                                                                                                                                                                                                                                                                                                                                                                        | Soy                                                                                                                                                                                             |
| Water, coconut milk (8%), grape juice concentrate, rapeseed oil, faba beans protein, calcium phosphate, calcium carbonate, <b>stabilisers</b> (gellan gum, <b>acacia gum</b> ), emulsifier (sunflower lecithin, rapeseed lecithin), maltodextrin, potassium phosphate, salt, coconut oil, natural flavour, ascorbic acid, magnesium oxide, vitamin E, folic acid, zinc sulfate, vitamin A, vitamin B12, vitamin B2, vitamin D2, iron, potassium iodide | Water, brown rice from Camargue* (15.9%), deodorised sunflower oil*, rice cream* (0.5%), <b>emulsifier (gum arabic*)</b> , stabiliser (xanthan gum), sea salt<br>*organically grown ingredients |





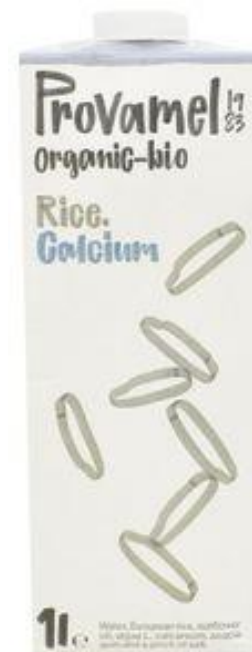
## PRODUCT EXAMPLES: Milks – Plant-based

ACACIA GUM  
declared as **thickener**

ACACIA GUM  
declared as **emulsifier**



| Rice Drink with Calcium                                                                                                                                                     | Organic Rice and Calcium Drink                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| France                                                                                                                                                                      | Belgium                                                                                                                                                                                    |
| Lima, Belgium                                                                                                                                                               | Provamel, Belgium                                                                                                                                                                          |
| Lima                                                                                                                                                                        | Provamel                                                                                                                                                                                   |
| Water, rice* (12%), sunflower oil*,<br>Lithothamnium calcareum seaweed (0.2%),<br><b>thickener</b> (xanthan gum, <b>acacia gum</b> ), sea<br>salt<br>* from organic farming | Rice base* (water, rice* (14.7%)), sunflower<br>oil*, calcified seaweed (Lithothamnium<br>calcareum) (0.4%), <b>stabiliser</b> ( <b>acacia gum</b> ),<br>sea salt<br>*from organic farming |





## PRODUCT EXAMPLES: Milks – Plant-based

ACACIA GUM  
introduced with vitamins

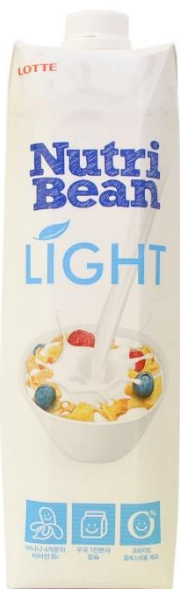
| Dietary Fiber Soy Milk                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Black Soy Milk                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| South Korea                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | South Korea                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Lotte Shopping, South Korea                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Hanmi Medicare, South Korea                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Choice L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Hanmi Medicare Jeonduyu It Soybeans                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Soy liquid (70%) (soy solid (>7%), soy), purified water, refined sugar, corn germ oil, calcium carbonate mixed formulation (calcium carbonate, soybean polysaccharides), indigestible maltodextrin (0.3%), lentil powder (0.2%), fructooligosaccharide, refined salt, synthetic flavours (peanut flavour, milk flavour), glycerin ester of fatty acid, l-carnitine (0.03%), <b>dry vitamin D3</b> (vitamin D3, dl-alpha tocopherol, medium-chain triglyceride, <b>acacia gum</b> , sucrose, corn starch) | Whole soy milk (90%) (soy solids (6%)), fructooligosaccharide, crystalline fructose, purified water, corn kernel oil, black soy extract (0.35%) (black soy (55%), solids (50%)), black sesame paste, calcium carbonate, peanut paste (peanut), sea salt, lecithin (soy), calcium mixed formulation (tribasic calcium phosphate, gum arabic), mixed nut paste (peanut, walnut, pine nut), black rice extract, <b>vitamin D3 mixed formulation</b> (vitamin D3, alpha tocopherol, MCT oil, <b>arabic gum</b> , corn starch, sucrose) |





## PRODUCT EXAMPLES: Milks – Plant-based

ACACIA GUM  
introduced with minerals



| Soy Milk                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Light Flavour Soybean Milk                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| South Korea                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | South Korea                                                                                                                                                                                                                                                                                                                                                         |
| Lotte Chilsung Beverage, South Korea                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Maeil Dairies, South Korea                                                                                                                                                                                                                                                                                                                                          |
| Lotte Nutri Bean Light                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Maeil Calcium Soy Milk                                                                                                                                                                                                                                                                                                                                              |
| Soy liquid (40%) (soy, soy solid (more than 7%)), purified water, white sugar, grains paste (0.6%) (brown rice, barley, roasted brown rice, wholemeal, glutinous rice, germinated brown rice, pumpkin, sweet potato), high oleic acid sunflower oil, calcium mixed formulation (purified water, calcium carbonate, arabic gum, emulsifier), emulsifier, synthetic flavouring agent (roasted soy flavour), refined salt, sodium hydrogen carbonate, vitamin B2, phosphate sodium esters | Undiluted soy liquid (94%) (soy solid (8%)), sugar, vegetable oil, mixed formulation 1 (1.1%) (tricalcium phosphate, gum arabic, glycerin ester of fatty acid, purified water), brown rice starch syrup, glycerin ester of fatty acid, purified water, salt, artificial peanut flavour, mixed formulation 2 (vitamin D3, ethyl cellulose, maltodextrin, tocopherol) |







## PRODUCT EXAMPLES: Milks – Plant-based

ACACIA GUM  
introduced with vitamins

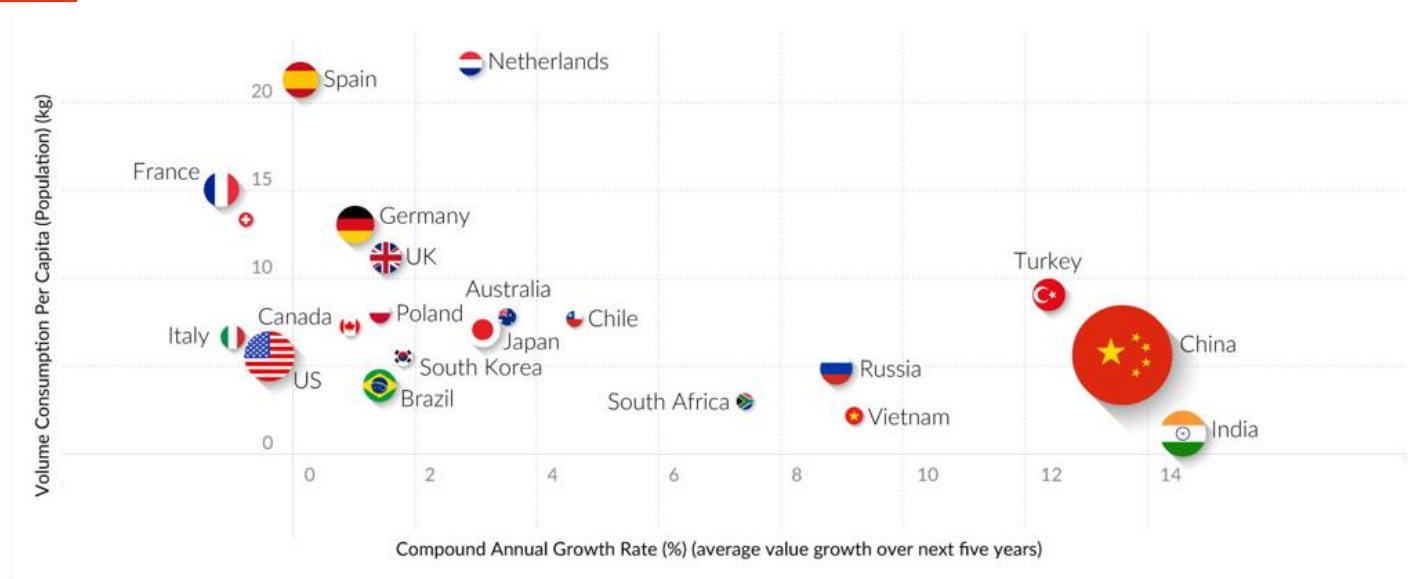
| Rice Milk with Brown Rice Germ                                                                                                                                                                                                                                                                                                                                                                                                                               | High Protein Soy Milk                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| South Korea                                                                                                                                                                                                                                                                                                                                                                                                                                                  | South Korea                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Erom, South Korea                                                                                                                                                                                                                                                                                                                                                                                                                                            | Dr. Chung's Food, South Korea                                                                                                                                                                                                                                                                                                                                                                                                          |
| Erom Farmers Dream                                                                                                                                                                                                                                                                                                                                                                                                                                           | Dr. Chung's Food Vegemil                                                                                                                                                                                                                                                                                                                                                                                                               |
| Brown rice extract (80%) (solids (5.25%)), purified water, brown sugar, other processed ingredient (chestnut extract paste), brown rice oil, rice bran powder (0.265%), calcium carbonate, sea salt, gellan gum, vitamin E acetate mixed formulation (dl-alpha-tocopheryl acetate, modified starch, maltodextrin, silicon dioxide), <b>vitamin A acetate mixed formulation</b> (vitamin A acetate, vitamin E, maltodextrin, corn starch, <b>gum arabic</b> ) | Undiluted soy milk (93%) (soy bean), sugar, soy protein isolate, 16 grain powder (barley, unpolished rice, corn, rice, whole wheat, buckwheat), mixed formulation (calcium carbonate, polysaccharide), <b>mixed formulation (vitamin D, vitamin E, gum arabic, sugar, cornstarch, processed fat, silicon dioxide), L-arginine, fortifying nutrient, refined salt, emulsifier, gellan gum, artificial grain flavour, purified water</b> |



4

Yogurts

## GLOBAL RETAIL MARKET OVERVIEW (Dairy yogurts)



Base: bubble size is based on market volume (kg); CAGR is based on market growth in value over the next five years in local currency

Source: [Mintel Market Sizes](#)



Read on [mintel.com](#)

- > **European markets** maintain the **highest consumption** of dairy yogurts.
- > The most important **value growth** is expected to come from **Turkey, China and India**.
- > **Vietnam, Russia and South Africa** are supposed to grow by at least 7%.

## BIBLIOGRAPHY

Some scientific publications have demonstrated that, when Acacia gum is added to yogurts (dairy), it can have the following benefits:

- > **Promotes the lactic bacteria viability** => important parameter because a yogurt is supposed to have a certain amount of alive lactic bacteria during its shelflife
- > **Increases water holding capacity** so it decreases the syneresis
- > **Improves organoleptic profile leading to better consumers' appreciation**

## BIBLIOGRAPHY

### > Lactic bacteria viability

Enumeration of the 3 lactic bacteria added to the yogurt during its shelflife: *Lactobacillus acidophilus*, *Bifidobacterium bifidum* and *Streptococcus thermophilus*.

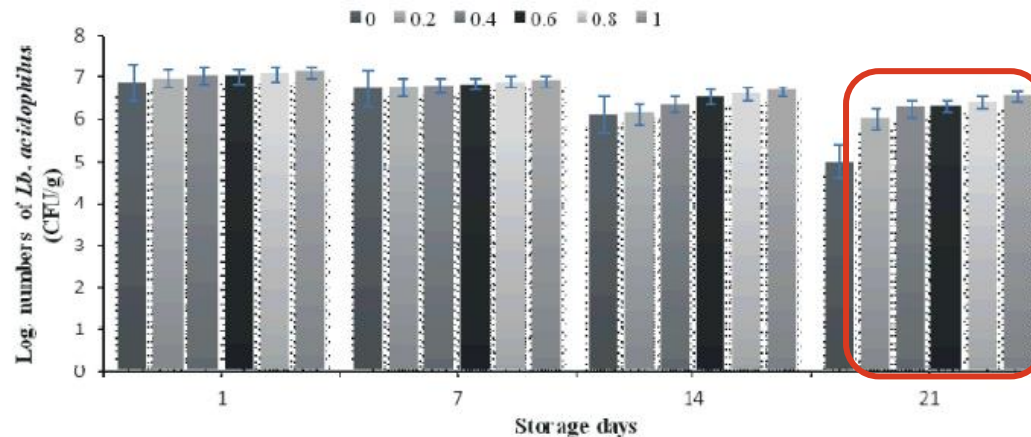


Fig. 3: Viability of *Lactobacillus acidophilus* LA-5 in yogurt with GA concentrations (0.0, 0.2, 0.4, 0.6, 0.8, 1.0%) after fermentation and storage days

➔ Alive bacteria decrease over time BUT this decrease is less important when acacia gum is added.

Gum Arabic Uses as Prebiotic in Yogurt Production and Study Effects on Physical, Chemical Properties and Survivability of Probiotic Bacteria During Cold Storage. 2016. Alaa Kareem Niamah, Shayma Thyab Gddoa Al-Sahlany and Alaa Jabbar Al-Manhel



## BIBLIOGRAPHY

### > Water retention: measured thanks to 3 different ways

**Water holding capacity:**  $\% \text{WHC} = 1 - [\text{Weight of whey after centrifugation} / \text{Weight of yogurt}] \times 100$

**Susceptibility to syneresis:**  $\% \text{STS} = [\text{Whey volume through a filter paper} / \text{Yogurt volume}] \times 100$

**Whey drainage:**  $\text{WD (mL)} = \text{Volume of whey off in mL for 100mL of yogurt}$

Table 2: The % WHC, % STS and WD values of yogurt with GA concentrations (0, 0.2, 0.4, 0.6, 0.8 and 1%) after fermentation and storage days

| Yogurt samples  | % WHC*             |                    |                    |                    | % STS*             |                    |                    |                    | WD* (ml)          |                    |                   |                   |
|-----------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|-------------------|-------------------|
|                 | 1                  | 7                  | 14                 | 21                 | 1                  | 7                  | 14                 | 21                 | 1                 | 7                  | 14                | 21                |
| 0% gum Arabic   | 40.02 <sup>a</sup> | 38.08 <sup>a</sup> | 35.33 <sup>a</sup> | 31.00 <sup>a</sup> | 84.00 <sup>a</sup> | 88.00 <sup>f</sup> | 91.00 <sup>a</sup> | 92.00 <sup>a</sup> | 1.60 <sup>d</sup> | 2.80 <sup>c</sup>  | 3.50 <sup>a</sup> | 5.20 <sup>a</sup> |
| 0.2% gum Arabic | 43.10 <sup>d</sup> | 40.00 <sup>d</sup> | 39.05 <sup>d</sup> | 37.55 <sup>d</sup> | 82.00 <sup>a</sup> | 85.00 <sup>a</sup> | 87.00 <sup>d</sup> | 90.00 <sup>a</sup> | 1.00 <sup>c</sup> | 1.90 <sup>ab</sup> | 2.80 <sup>d</sup> | 4.70 <sup>d</sup> |
| 0.4% gum Arabic | 44.00 <sup>d</sup> | 42.80 <sup>d</sup> | 40.20 <sup>d</sup> | 38.61 <sup>d</sup> | 78.00 <sup>d</sup> | 80.00 <sup>d</sup> | 81.00 <sup>c</sup> | 83.00 <sup>d</sup> | 1.00 <sup>c</sup> | 1.50 <sup>b</sup>  | 2.50 <sup>c</sup> | 4.30 <sup>d</sup> |
| 0.6% gum Arabic | 47.20 <sup>c</sup> | 45.90 <sup>c</sup> | 44.00 <sup>c</sup> | 42.50 <sup>c</sup> | 75.00 <sup>c</sup> | 77.00 <sup>c</sup> | 79.00 <sup>c</sup> | 80.00 <sup>c</sup> | 0.50 <sup>b</sup> | 1.30 <sup>b</sup>  | 2.40 <sup>c</sup> | 4.00 <sup>c</sup> |
| 0.8% gum Arabic | 50.11 <sup>b</sup> | 49.00 <sup>b</sup> | 48.03 <sup>b</sup> | 46.30 <sup>b</sup> | 71.00 <sup>b</sup> | 74.00 <sup>b</sup> | 75.00 <sup>b</sup> | 77.00 <sup>b</sup> | 0.00 <sup>a</sup> | 0.60 <sup>a</sup>  | 1.40 <sup>b</sup> | 2.00 <sup>b</sup> |
| 1% gum Arabic   | 54.00 <sup>a</sup> | 53.11 <sup>a</sup> | 52.01 <sup>a</sup> | 50.50 <sup>a</sup> | 68.00 <sup>a</sup> | 69.00 <sup>a</sup> | 70.00 <sup>a</sup> | 71.00 <sup>a</sup> | 0.00 <sup>a</sup> | 0.30 <sup>a</sup>  | 1.00 <sup>a</sup> | 1.20 <sup>a</sup> |

WHC: water holding capacity, STS: susceptibility to syneresis, WD: Whey drainage, • : p= 0.05,

➔ 1% Acacia gum is efficient to obtain a better water retention into yogurts.

## STUDY ON ACACIA GUM/FIBER IMPACT IN DAIRY YOGURTS

### TRIALS DONE IN OUR APPLICATION LABORATORY

| Ingredients                              | %                                             |
|------------------------------------------|-----------------------------------------------|
| Semi-skimmed milk -<br>pasteurized       | Up to 100%                                    |
| Lactic bacteria                          | 0,2                                           |
| Acacia fiber or inulin or<br>polydextose | Added in quantity to<br>obtain 3 or 6% fibers |

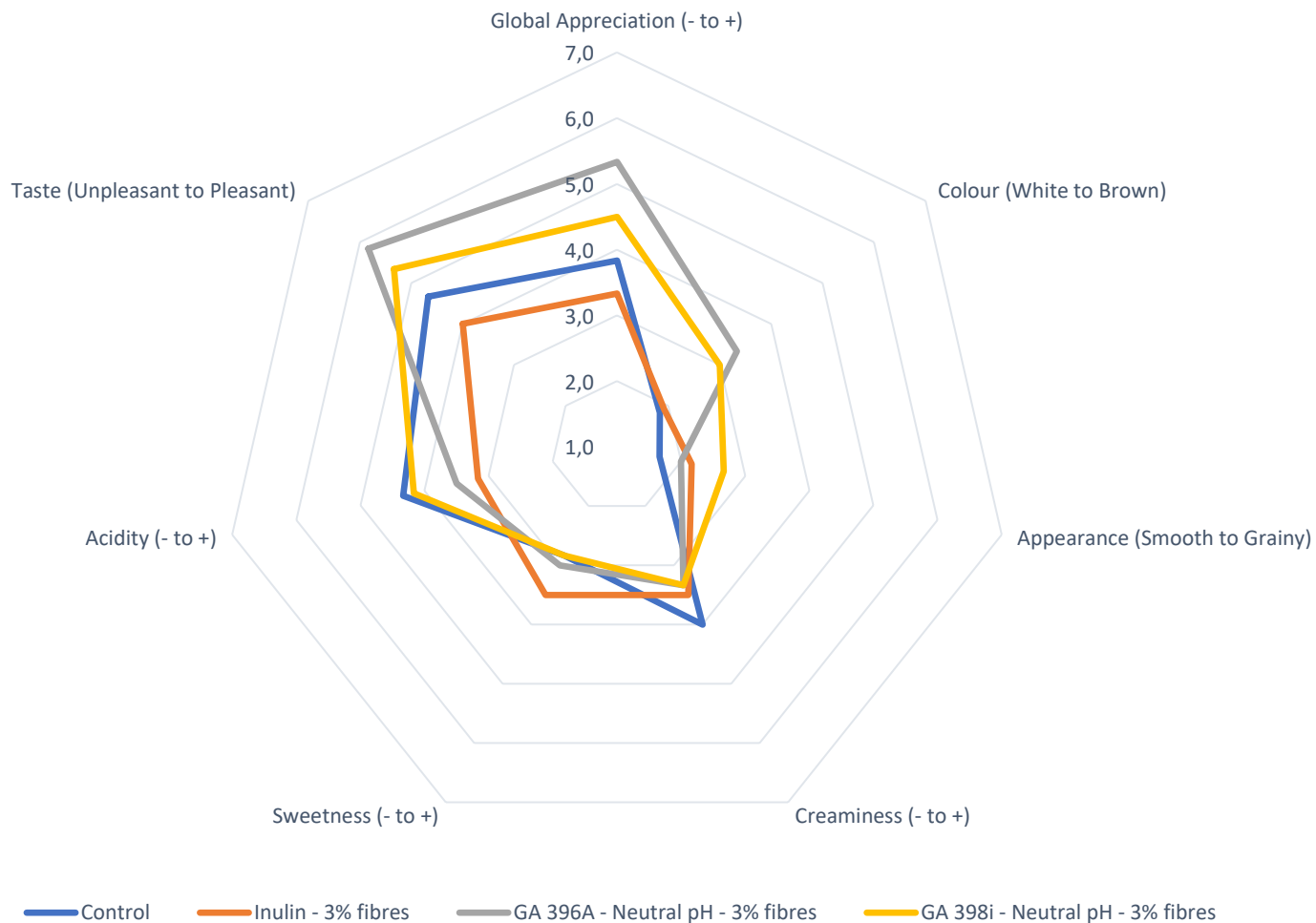
### PROCESS:

- Heat the milk up to 44°C
- Add the lactic bacteria and the fibers
- Blend for 5 minutes
- Pour the mix into yogurt containers
- Incubate them for 8 hours at 44°C
- Store them in the fridge

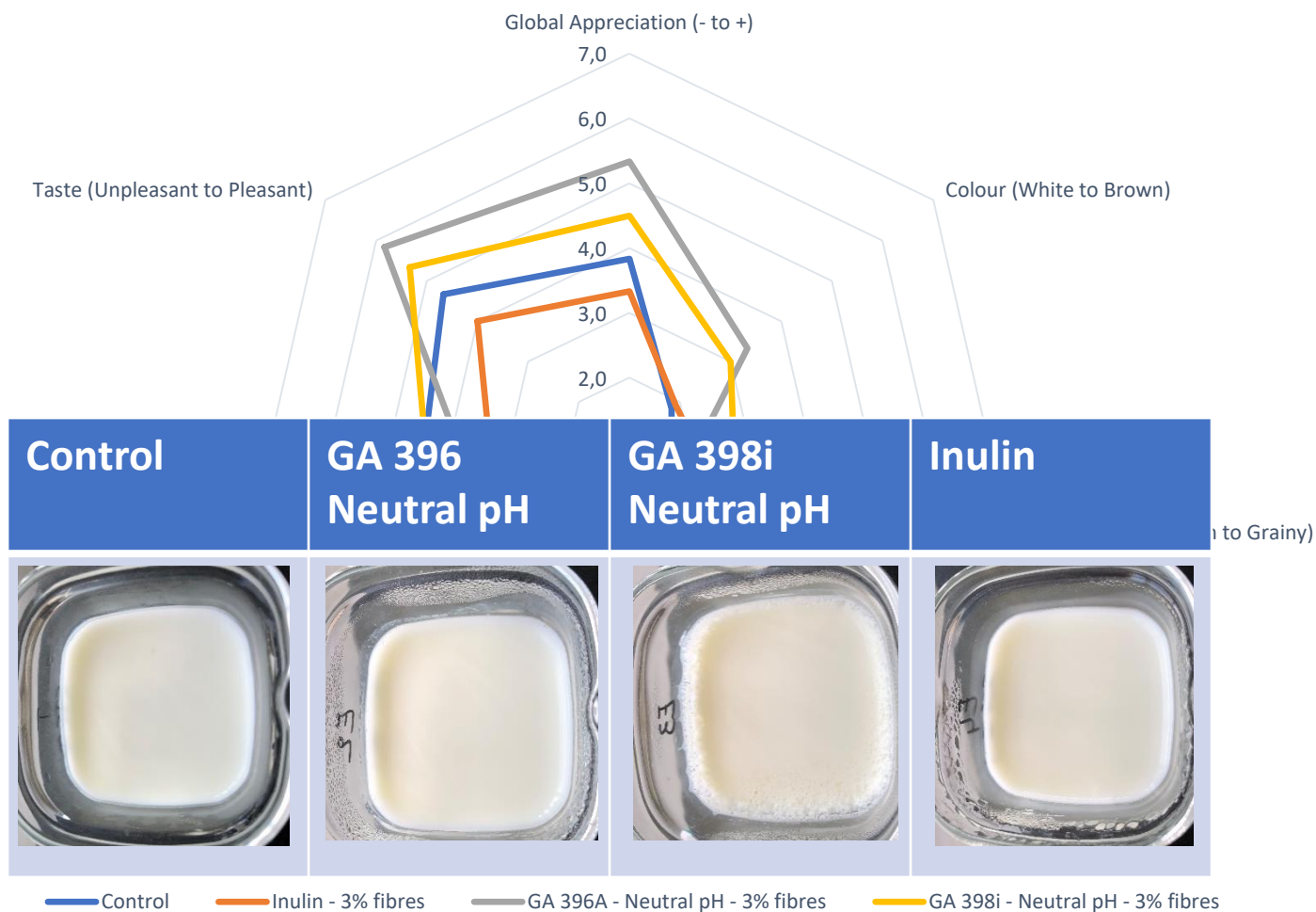
### OUR OBJECTIVES:

- Add fibers
- Improve the yogurt texture
- Increase the taste and global appreciation
- Minimize the impact in terms of colour

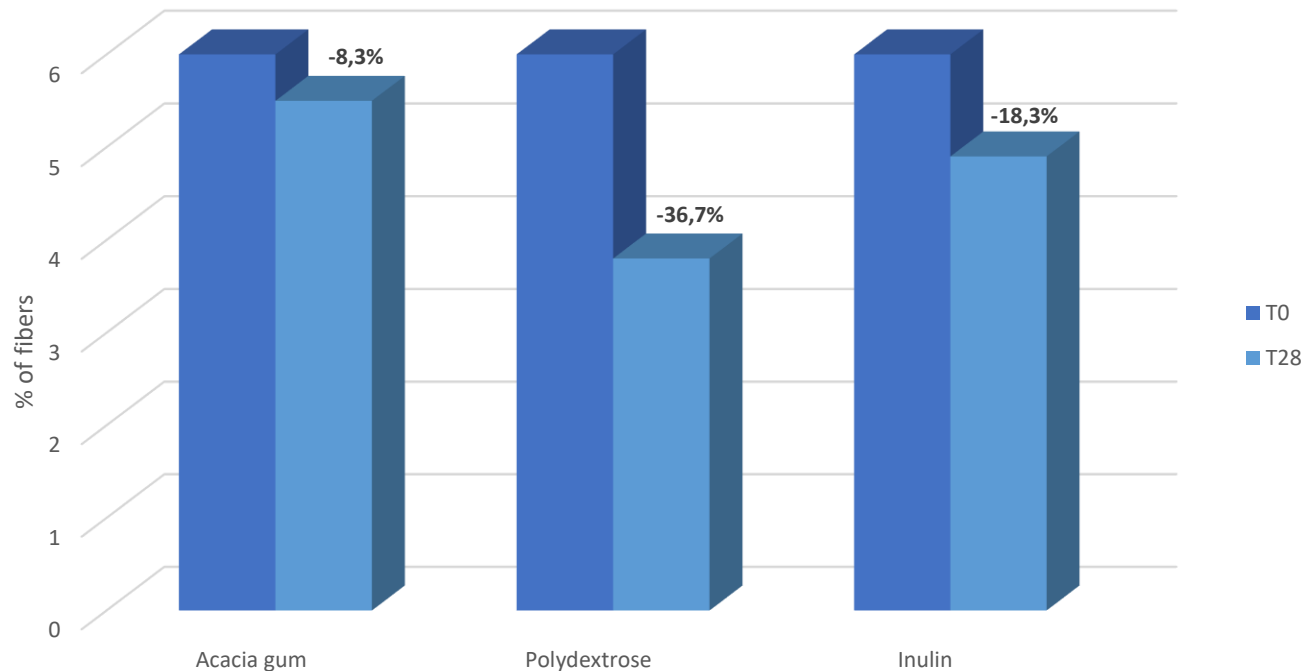
## SENSORY EVALUATION



## SENSORY EVALUATION



## FIBER CONTENT EVOLUTION DURING SHELF LIFE



> Fibers from polydextrose decreased by 36.7% during the shelf life (28 days), whereas Inulin decreased by 18.3% and Acacia gum by 8.3%.

> **Polydextrose and Inulin** are **highly fermentescible** => for a claim, industrials will need to add more of them to keep the claim accurate until the end of the shelflife



## PRODUCT EXAMPLES: Yogurts – Dairy

With  
Acacia fiber

“The product constitutes a source of fibre, and provides balance for the intestinal flora.”

3g/100g fibres



| Yogurt Dessert with Pumpkin Seeds, Cranberry & Muesli                                                                                                                                                                                                                                                                                                                                                                                                                                             | Kiwi Flavour Premium Fresh Cream Yogurt                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Greece                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | South Korea                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Danone, Greece                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Seoul Milk, South Korea                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Activia Mix & Go                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Seoul Milk Gualdeumbook                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Yogurt dessert (88.2%) (skim milk (85.2%), milk proteins (6.8%), cream milk (4.4%), sugar, lactic ferments) muesli pumpkin seed and dried cranberry preparation (11.8%) (oats flakes (54.2%), oligofructose, sugar, dried cranberry (8%) (sugar, cranberries, sunflower oil), toasted almonds, pumpkin seeds (4%), crunchy cereal flakes (3.7%) (rice, extruded oat flour, wheat fibre, barley malt, salt), flour (wheat flour, rye flour), <b>acacia fibres</b> , dextrose, sunflower oil, salt) | Raw milk (43.3655%), milk cream (18.2%), skim milk powder (1.68%), kiwi syrup (30%) (sweetened kiwi (46.4%), white sugar, nata de coco, amidated pectin, modified starch), white sugar, <b>acacia dietary fibre (organic)</b> , fibre oligo, gelatin (pork), mixed formulation (modified starch, amidated pectin, glucose, sunflower oil), synthetic flavouring agent (milk flavour, fresh cream flavour), bifido bacterium lactobacillus (0.000581%), lactobacillus complex |



## PRODUCT EXAMPLES: Yogurts – Dairy

Combination with other hydrocolloids

| Honey, Vanilla, Cinnamon & Orange Greek-Style Yogurt                                                                                                                                                                                                                                                                                                                                          | Yogurt with Blueberries                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| USA                                                                                                                                                                                                                                                                                                                                                                                           | Russia (produced in Latvia)                                                                                                                                                                                                   |
| Hain Celestial Group, USA                                                                                                                                                                                                                                                                                                                                                                     | Tukuma Piens, Latvia                                                                                                                                                                                                          |
| The Greek Gods                                                                                                                                                                                                                                                                                                                                                                                | Baltais Eko                                                                                                                                                                                                                   |
| Cultured pasteurized grade A milk, evaporated cane syrup, cream, honey powder, vanilla extract, natural flavor, water, pectin, spice, citric acid, <b>gum arabic</b> , <b>xanthan gum</b> , live cultures, active cultures ( <i>S. thermophilus</i> , <i>B. lactis</i> , <i>L. acidophilus</i> , <i>L. casei</i> , <i>L. rhamnosus</i> , <i>Lactobacillus lactis</i> , <i>L. bulgaricus</i> ) | Pasteurized milk, fruit filling 12% (sugar, blueberry (35%), water, corn starch, natural flavours (blueberry flavour)), sugar, corn starch, food, <b>gelatin</b> , <b>gum acacia</b> , starter yogurt, lactic micro-organisms |



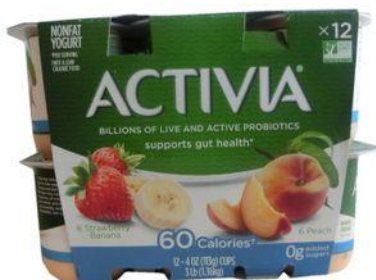
# Yogurts

## PRODUCT EXAMPLES: Yogurts – Dairy

Combination with other hydrocolloids

ACACIA GUM declared as stabilizer

| Strawberry and Banana & Peach Non-Fat Yogurt                                                                                                                                                                                                                                                                                                                                                                           | Banana & Dulce de Leche Yogurt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| USA                                                                                                                                                                                                                                                                                                                                                                                                                    | Argentina                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Danone, USA                                                                                                                                                                                                                                                                                                                                                                                                            | Danone, Argentina                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Activia                                                                                                                                                                                                                                                                                                                                                                                                                | La Serenisima Danonino Polar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Cultured non fat milk, strawberries, water, modified food starch, less than 1% (banana puree, natural flavor, carmine (for color), <b>kosher gelatin</b> , <b>acacia gum</b> , <b>pectin</b> , <b>xanthan gum</b> , inulin, sucralose, acesulfame potassium, calcium lactate, malic acid, live cultures (L. bulgaricus (2), L. lactis, S. thermophilus), live and active probiotic (B. lactis dn 173-010/cncm i-2494)) | Pasteurized whole milk, banana and dulce de leche preparation (sugar, banana, dulce de leche, calcium citrate, thickener (modified corn starch)), ferrous gluconate, zinc gluconate, vitamins (vitamin A, vitamin D), folic acid, sweetener (sorbitol syrup), artificial banana flavoring, <b>stabilizers (gum arabic</b> , xanthan gum), acidulant (citric acid), natural color (caramel colour), preservative (potassium sorbate), sugar, skim milk powder, cream, corn starch, milk protein, stabilizer (gelatin), lactic cultures |



## PRODUCT EXAMPLES: Yogurts – Dairy

ACACIA GUM  
declared as **thickener**

| Bulgarian Yogurt with Mashed Fruit                                                                                                                                                                                                                                                                 | Mango-Orange Flavoured Yoghurt                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Spain                                                                                                                                                                                                                                                                                              | Finland                                                                                                                                                                |
| Scamark, France                                                                                                                                                                                                                                                                                    | SOK, Finland                                                                                                                                                           |
| Marque Repère Délisé                                                                                                                                                                                                                                                                               | Rainbow                                                                                                                                                                |
| Whole milk, sugar, fruits (strawberry purée or raspberry purée or blackberry purée), milk proteins, grape juice, modified corn starch, <b>thickeners (E414, E415)</b> , colourant (E120), acidity regulators (E330, E331), tricalcium phosphate, calcium citrate, lactic acid, flavours, vitamin D | Pasteurised milk, sugar, mango, milk protein, orange, modified starch, <b>thickener (E414)</b> , flavourings, colour (E160C), acidity regulator (E330), yogurt culture |



## PRODUCT EXAMPLES: Yogurts – Dairy

ACACIA GUM  
introduced with flavour



### Vanilla Yogurt with Passion Fruit Jelly

Brazil

Lactícínios Tirol, Brazil

Tirol

Pasteurized milk, passion fruit jelly (sugar, passion fruit pulp (seeds), modified starch, aroma identical to natural passion fruit, acidulant lactic acid, preservative potassium sorbate), sugar, whole milk powder, stabilizer/thickener (gelatin, starch, guar gum INS 412), vanilla flavor (maltodextrin, flavoring, thickener (gum arabic)), milk yeast

## PRODUCT EXAMPLES: Drinking yogurts – Dairy

With  
Acacia fiber

| Apple Flavour Drinking Yogurt                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2030 Fit Drinking Yogurt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| South Korea                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | South Korea                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Seoul Milk, South Korea                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Namyang Dairy Products, South Korea                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Seoul Milk Duo Ahn                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Namyang Bulgaris                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Raw milk (72%), purified water, sugar, apple juice concentrate (3%) (solid (more than 70%), juice (20%)), skim milk powder (2.15%), polydextrose (2.1%), oligosaccharide (1.1%), glucose, isolated milk protein, pectin, <b>acacia dietary fibre (0.05%)</b> , milk enhancer, egg yolk powder, artificial apple flavour, lactic acid bacteria (0.0066669%) (Bifidobacterium longum, Duolac lactic acid bacteria (>=100 million per bottle)), enzymatically modified stevia, lactic acid bacteria (0.0023%) | Raw milk, purified water, oligosaccharide, mixed skimmed milk powder, prune juice concentrate (1.5%) (solids (70%)), fructose, chicory fibre, dextrin, Fibresol-2 (indigestible maltodextrin), <b>acacia fibre</b> , milk protein powder, pectin, fish collagen, microbiome synergy complex, artificial flavour, bacteria enhancer (0.025%), enzymatically modified stevia, lactose, Bifidus enhancer (0.01%), L. rhamnosus PL60 (100 million/150ml), Lactobacillus complex (200 billion/150ml), L. rhamnosus GG (500 million/150 ml), Lactobacillus bifidus (100 million/150 ml) |

“Specially designed for women in their 20s and 30s with irregular eating habits to support the intestinal health [...] It contains [...] dietary fibres such as chicory fibre, **acacia fibre** and indigestible maltodextrin for regularity”.





## PRODUCT EXAMPLES: Drinking yogurts – Dairy

ACACIA GUM  
declared as **stabilizer**

Combination with other  
hydrocolloids



| Peach Flavoured Yogurt Drink                                                                                                                                                                                                                                                                          | Freezable Grape Flavoured Yogurt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Germany                                                                                                                                                                                                                                                                                               | South Korea                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| FrieslandCampina, Germany                                                                                                                                                                                                                                                                             | Seoul Milk, South Korea                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Fruttis Yogho! Yogho!                                                                                                                                                                                                                                                                                 | Freezable Grape Flavoured Yogurt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Whey product (50%), skimmed milk yogurt (30%), water, sugar, thickeners (pectins, guar gum), peach juice from concentrate (1%), invert sugar syrup, <b>stabiliser (gum arabic)</b> , acidifier (lactic acid, citric acid), preservative (potassium sorbate), dye (genuine carmine, carotene), flavour | Raw milk (40.5%), skimmed milk powder (4.9%), purified water, grape jelly syrup (15%) (liquid fructose, pineapple juice concentrate (16.67%) (solid (72%)), alginic acid jelly, green grape juice concentrate (3.64%) (solid (68%)), grape juice concentrate (3.65%) (solid (68%)), artificial grape flavour), milk cream, polydextrose, liquid fructose, mixed formulation (glycerin ester of fatty acid, <b>arabic gum</b> , <b>pectin</b> , <b>carrageenan</b> , <b>guar gum</b> ), pectin, fish collagen, zinc mixed formulation (zinc oxide, L-Lysine monohydrochloride, glycine, vitamin C), enzymatically modified stevia (natural sweetener), lactobacillus (0.003%) |



## PRODUCT EXAMPLES: Drinking yogurts – Dairy

ACACIA GUM  
declared as **thickener**

| Bio Yogurt with Fibre, Kiwi, Feijoa and Flaxseeds                                                                                                                                                                                              | Cantaloupe Flavoured Drink                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Russia                                                                                                                                                                                                                                         | Vietnam (produced in South Korea)                                                                                                                                                                                                                                                           |
| EFKO, Russia                                                                                                                                                                                                                                   | Seoheung, South Korea                                                                                                                                                                                                                                                                       |
| Sloboda Zhivaya Eda                                                                                                                                                                                                                            | Paldo Pororo                                                                                                                                                                                                                                                                                |
| Normalised milk, fruit filler (sugar, water, feijoa, kiwi, flaxseed, wheat fibre, natural <b>thickeners</b> (citric pectin, <b>gum arabic</b> ), lemon juice), sugar, inulin (dietary fibres, soluble fibres), yogurt leaven, L.casei bacteria | Water, maltodextrin, corn syrup, sugar, soluble fibre, natural cantaloupe juice (5%), yogurt cultures, skim milk powder, acidity regulators (INS 327, INS 331(iii), INS 330), <b>thickeners</b> (INS 414, INS 407, INS 412, INS 418), vitamin C, vitamin B1, cantaloupe flavour, cow's milk |





## PRODUCT EXAMPLES: Yogurts – Plant-based

With  
Acacia fiber

| Coconut Yoghurt with Mango and Peach                                                                                                                                                                                                                                                              | Coconut Milk Plain Yogurt                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hungary                                                                                                                                                                                                                                                                                           | Czech Republic                                                                                                                                                               |
| Vegan Health, Hungary                                                                                                                                                                                                                                                                             | Magda, Poland                                                                                                                                                                |
| All In Natural Food                                                                                                                                                                                                                                                                               | Planton                                                                                                                                                                      |
| Coconut milk (coconut extract, water), peach, mango, natural apple extract, arrowroot, <b>acacia fiber</b> , prebiotics (fructooligosaccharide), live culture mixture (bifidobacterium, L. acidophilus, L. rhamnosus, L. reuteri, Lactobacillus bulgaricus, Streptococcus thermophilus, L. Casei) | Fermented coconut product (90.5%) (water, coconut milk extract, tapioca maltodextrin, <b>acacia fiber</b> ), sugar, starch, broad beans protein concentrate, yoghurt culture |





## PRODUCT EXAMPLES: Yogurts – Plant-based

With  
Acacia fiber

| Vegan Porridge                                                                                                                                                                                       | Prune Flaxseeds Yogurt                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Poland                                                                                                                                                                                               | UK                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Mazowiecka Spolka Mleczarska, Poland                                                                                                                                                                 | Danone                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Nutri Vege                                                                                                                                                                                           | Activia Activia Dairy Free Oat Based                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Coconut pulp extract (72%) (water, coconut extract, maltodextrin, <b>acacia fibre</b> ), water, sugar, starch, broad bean protein, oat flakes (1.2%), oat (1.2%), natural flavour, bacteria cultures | Oat base (74%) (water, oat syrup (7%)), dried prune (5%), stabilisers (modified starch, pectin), cane sugar, <b>dietary fibre (acacia gum)</b> , starches (tapioca starch, potato starch), flaxseeds (1%), sunflower oil, concentrated lemon juice, pea protein, calcium phosphate, caramelised sugar syrup, dairy free live cultures (Bifidobacterium spp, Streptococcus thermophilus, Lactobacillus bulgaricus, Lactococcus lactis), natural flavourings |





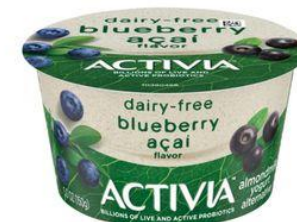
## PRODUCT EXAMPLES: Yogurts – Plant-based

Combination with other hydrocolloids

“Source of fibre ”



| Passionfruit Dairy Free Oat Yogurt with Probiotics                                                                                                                                                                                                                                        | Dairy-Free Blueberry Açai Flavor Almondmilk Yogurt Alternative                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Australie                                                                                                                                                                                                                                                                                 | USA                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Danone Murray Goulburn, Australia                                                                                                                                                                                                                                                         | Danone, USA                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Activia Probiotics                                                                                                                                                                                                                                                                        | Activia                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Oat milk (water, oats (7%)), passionfruit (5%), sugar, cashews, starch (tapioca starch, rice starch), pea protein, <b>acacia gum</b> , natural flavour, vegan cultures (Bifidobacterium animalis subsp. lactis, Streptococcus thermophilus, Lactobacillus bulgaricus, Lactococcus lactis) | Almond milk (filtered water, almonds), cane sugar, tapioca starch, fava bean protein, blueberries, less than 1% of ( <b>acacia gum</b> , acai puree, tapioca dextrose, natural flavors, <b>pectin</b> , fruit juice concentrate (for color), vegetable juice concentrate (for color), citric acid, sodium citrate, live cultures (L. bulgaricus (2), L. lactis, S. thermophilus), live and active probiotic (B. lactis DN 173-010 BV/CNCM I-2494)) |





## PRODUCT EXAMPLES: Yogurts – Plant-based

ACACIA GUM  
declared as **thickener**

| Mango and Passionfruit Coconut Product                                                                                                                                                                                                                                                                                                                                                                                                             | Dairy Free Vanilla Oat Yogurt                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Russia                                                                                                                                                                                                                                                                                                                                                                                                                                             | UK                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Velle, Russia                                                                                                                                                                                                                                                                                                                                                                                                                                      | Danone, UK                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Coco Velle                                                                                                                                                                                                                                                                                                                                                                                                                                         | Light & Free                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Coconut base (water, coconut (coconut chips), sugar, rice flour, <b>thickeners</b> (tapioca starch, <b>arabic gum</b> , tara gum, cassia gum), natural flavour, leaven (probiotic cultures) (Lactobacillus acidophilus, Bifidobacterium)), mango and passionfruit filling (mango puree, coconut jelly pieces (nata de coco), water, sugar, passion fruit juice, thickener (pectin), natural flavours, concentrated lemon juice, colour (carotene)) | Oat base (90%) (water, oat syrup), modified maize starch, starches (tapioca starch, potato starch), <b>acacia gum</b> , tricalcium citrate (calcium), pea protein isolate, acidity regulators (citric acid, sodium citrate), stabiliser (carrageenan), bourbon vanilla powder, natural vanilla flavouring (other natural flavourings), natural flavourings, sweeteners (acesulfame K, sucralose), dairy-free cultures (S. thermophilus, L. bulgaricus, L. lactis) |







## PRODUCT EXAMPLES: Drinking yogurts – Plant-based

ACACIA GUM  
declared as **thickener**

Combination with other  
hydrocolloids

| Coconut and Cherry Fermented Drink                                                                                                                                                                                                                                                                                                                                   | Mango Probiotic Dairy Free Yogurt                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Russia                                                                                                                                                                                                                                                                                                                                                               | USA                                                                                                                                                                                                                                                                                                                                          |
| Velle, Russia                                                                                                                                                                                                                                                                                                                                                        | Califia Farms, USA                                                                                                                                                                                                                                                                                                                           |
| Coco Velle                                                                                                                                                                                                                                                                                                                                                           | Califia Farms                                                                                                                                                                                                                                                                                                                                |
| Coconut base (water, coconut (coconut chips), rice flour, sugar, <b>thickeners</b> (gum arabic, tara gum, cassia gum), natural flavor, ferment (probiotic cultures) (Lactobacillus acidophilus, bifidobacterium)), cherry filling (water, sugar, puree, cherry, natural flavor, concentrated lemon juice, cherry juice, thickener (pectin), colourant (anthocyanin)) | Almond milk (water, almonds), mango puree, concentrate, sugar, coconut cream, passionfruit juice concentrate, oat fiber, <b>locust bean gum</b> , natural flavors, <b>acacia gum</b> , lemon juice concentrate, <b>pectin</b> , sea salt, <b>gellan gum</b> , live active cultures (Bifidobacterium (BB-12), S. thermophilus, L. bulgaricus) |



5

## Textured desserts

## ACACIA GUM REQUIRED FUNCTIONALITIES

### > CONTRIBUTION TO TEXTURE AND PRODUCT STABILITY

- Used as thickener or firming agent
- Combination with other hydrocolloids: xanthan, pectin, guar gum, locust bean gum, etc.
- Allows product stability over time during its storage
  - > Decreases syneresis
  - > Improves water retention

### > ENCAPSULATION OF FLAVOURS, COLOURS, NUTRIENTS, etc.:

### > FIBER ENRICHMENT

# Acacia Gum in textured dessert



## STUDY ON ACACIA GUM IMPACT IN PANNA COTTAS

### TRIALS DONE IN OUR APPLICATION LABORATORY

#### PROCESS:

- > Mix the agar-agar and the acacia gum with the sugar
- > Place the ingredients in kitchen food processor bowl, starting with the milk and cream
- > Heat for 5 minutes à 95°C, at speed 4 (*time and speed to be adapted depending on the food processor used*)
- > Pour out into small glasses and leave to cool
- > Keep in the fridge for around 3 hours

For a more consistent distribution

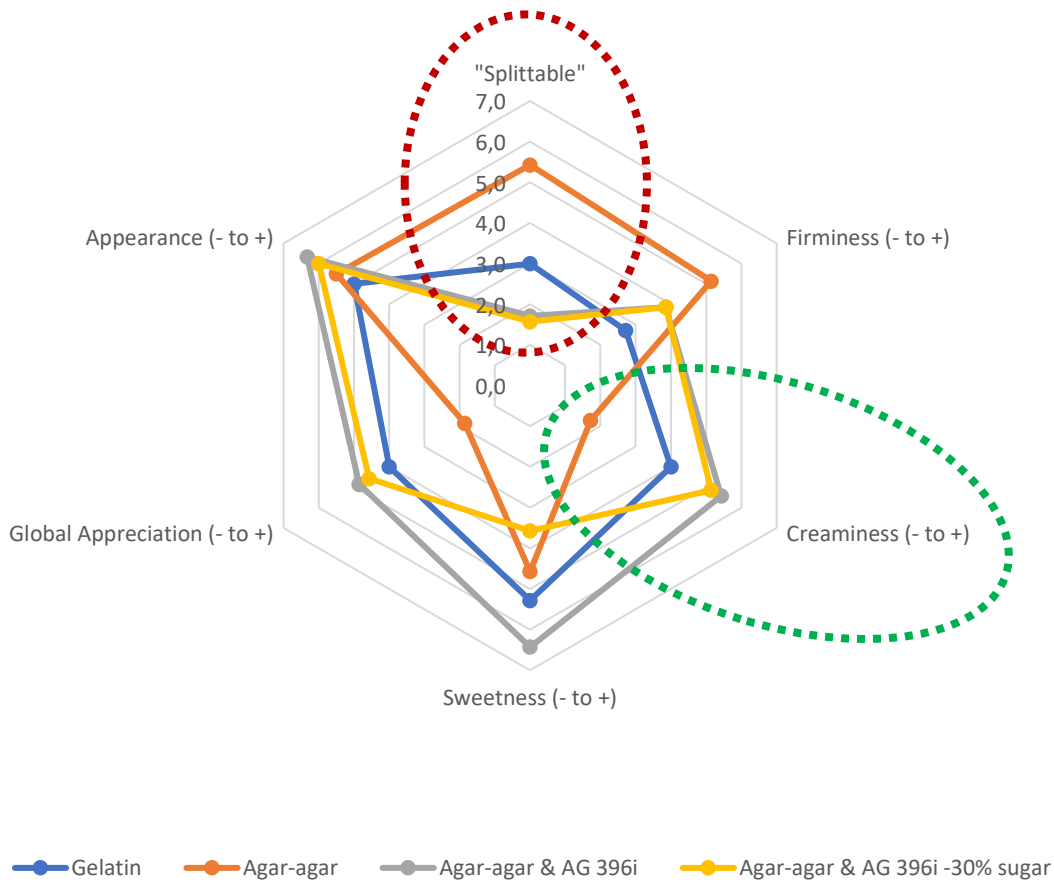
High temperature required for agar-agar solubilization and gelation

| Ingredients            | %          |
|------------------------|------------|
| Whole milk             | 44.1       |
| Full cream             | 42.6       |
| Sugar                  | 10.7       |
| Agar-agar              | 0.4        |
| <b>Acacia Gum 396I</b> | <b>2.2</b> |

### OUR OBJECTIVES:

- Gelatin replacement
- Maintain consumers' enjoyment: taste, texture, appearance
- Combine Acacia Gum with other natural hydrocolloids

## SENSORY EVALUATION: PANNA COTTAS



- Synergy between Acacia Gum and Agar-agar
- Less « splittable » than Agar-agar alone
- Acacia Gum addition improves the creaminess, even with a 30% sugar reduction
- Good appearance and high appreciation → Acacia Gum improves shine
- Sweetness increase → allows a sugar reduction without impacting the texture and appreciation

Vegan panna cottas recipes developed with commercial vegan creams and milks

Soy

Almond

Rice

Coconut

# Textured desserts

ALLAND & ROBERT

## PRODUCT EXAMPLES: Sundaes - Dairy

ACACIA GUM  
declared as **stabilizer**

Combination with other  
hydrocolloids

| Strawberry & Raspberry Sundae                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Strawberry Dream Walking Sundae                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | USA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Marks & Spencer, UK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Fresh & Easy Neighborhood Market, USA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| M&S; Food Count on Us                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Fresh And Easy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <p>Skimmed milk, raspberry compote (23%) (raspberries, water, sugar, glucose syrup, cornflour, gelling agent (pectin), acidity regulator (citric acid), flavouring, colour (anthocyanins (from grapes))), strawberry puree (8%), sugar, whipping cream (milk), dried skimmed milk, fructose, cocoa butter, maltodextrin, emulsifier (E472b, soya lecithin, E471), beef gelatine, dried whole milk, chicory fibre, gelling agent (pectin), <b>stabiliser</b> (xanthan gum, guar gum, carrageenan, <b>gum arabic</b>), acidity regulator (citric acid), cornflour, flavourings, colour (beetroot red, E120, anthocyanins (from radish)), dextrose</p> | <p>Cream (pasteurized cream, carrageenan), sugar, strawberries, white chocolate (sugar, cocoa butter, milk, soy lecithin, vanilla extract), bleached enriched flour (wheatflour, malted barley flour, niacin, reduced iron, thiamin mononitrate, riboflavin, folic acid), milk, cream cheese (pasteurized cultured milk, cream, salt, xanthan, carob bean, and/or guar gum), egg yolks, eggs, canola oil, butter (cream, natural flavor, annatto (for color)), cocoa (processed with alkali), roasted almonds (almond, canola, safflower, and/or almond oil), low fat cultured buttermilk (nonfat milk, nonfat milk powder, salt), vanilla extract, semi-sweet chocolate (Belgian chocolate liquor, sugar, cocoa butter, soy lecithin, vanilla extract), semi-sweet chocolate (sugar, unsweetened chocolate, cocoa butter, soy lecithin, vanilla extract), walnuts, corn starch, <b>gum acacia</b>, <b>pectin</b>, invert sugar, water, rice starch, salt, baking powder (sodium acid pyrophosphate, baking soda, corn starch, monocalcium phosphate), <b>xanthan gum</b>, <b>guar gum</b>, citric acid, mono- and diglycerides, soy lecithin, <b>carob bean gum</b></p> |





# Textured desserts

## PRODUCT EXAMPLES: Puddings – Dairy

Organic

Combination with other hydrocolloids

| Vanilla Pudding                                                                                                                                                                     | Vanilla Flavored Pudding                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| USA                                                                                                                                                                                 | Mexico                                                                                                                                                                                                                                                                                                                                                   |
| European Gourmet Bakery, USA                                                                                                                                                        | Comercializadora de Lácteos y Derivados, Mexico                                                                                                                                                                                                                                                                                                          |
| European Gourmet Bakery Organics                                                                                                                                                    | Lala                                                                                                                                                                                                                                                                                                                                                     |
| Organic whole milk, organic sugar, organic cornstarch, organic vanilla flavor, organic non fat dry milk powder, cultured organic non fat dry milk powder, <b>organic arabic gum</b> | Partially skimmed cow's milk, pasteurized cow's cream, skimmed milk powder, grenadine, corn syrup solids, titanium dioxide, modified starch, <b>gum arabic</b> , silicium dioxide, <b>xanthan gum</b> , sodium citrate, sodium tripolyphosphate, potassium sorbate, acesulfame K (22mg/100g), artificial flavors, yellow 5 (tartrazine), yellow 6, nisin |



# Textured desserts

## PRODUCT EXAMPLES: Chocolate mousses – Dairy

Combination with other hydrocolloids

ACACIA GUM declared as thickener

| Belgian Chocolate Mousse                                                                                                                                                                                                                                | Chocolate Mousse                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| USA                                                                                                                                                                                                                                                     | Italy                                                                                                                                                                                                                                                                                                                     |
| Fresh & Easy Neighborhood Market, USA                                                                                                                                                                                                                   | Fattoria Scaldasole, Italy                                                                                                                                                                                                                                                                                                |
| Fresh & Easy                                                                                                                                                                                                                                            | Fattoria Scaldasole I Dessert Bio                                                                                                                                                                                                                                                                                         |
| Cream (cream, carrageenan), dark chocolate (Belgian chocolate liquor, sugar, cocoa butter, soy lecithin, vanilla extract), milk, sugar, egg yolk, canola oil, vanilla extract, <b>acacia gum</b> , <b>pectin</b> , <b>xanthan gum</b> , <b>guar gum</b> | Glucose syrup*, cream* (21.5%), water, cane sugar*, chocolate* (5%) (cocoa mass*, sugar*, cocoa butter*, emulsifier (soy lecithin), vanilla extract*), low fat cocoa* (4%), alcohol* (1.5%), eggs, milk proteins*, <b>thickener</b> (carrageenan, <b>acacia gum*</b> , xanthan gum, beef gelatine)<br>*organic ingredient |



## PRODUCT EXAMPLES: Tiramisu – Dairy

ACACIA GUM  
declared as **thickener**

| Classic Tiramisu                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Tiramisu Dessert with Sweeteners                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Germany                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Ukraine                                                                                                                                                                                                                                                                                                              |
| Lidl, Germany                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Ofudservis, Ukraine                                                                                                                                                                                                                                                                                                  |
| Milbona Bio Organic                                                                                                                                                                                                                                                                                                                                                                                                                                                            | O!                                                                                                                                                                                                                                                                                                                   |
| Glucose syrup*, reconstituted skim milk*, mascarpone cheese* (16%) (cream*, acidity regulator (lactic acid)), ladyfinger biscuit* (9%) (wheat flour*, whole egg*, raw cane sugar*, milk protein*, baking agent (sodium carbonate, ammonium carbonate)), raw cane sugar*, whole egg*, ethyl alcohol* (2.2%), low fat cocoa powder* (1.2%), instant coffee* (1.0%), milk protein*, <b>thickener</b> (carrageenan, xanthan gum, <b>gum arabic</b> *)<br>*from organic agriculture | Sour cream (15%), mascarpone cheese (purified water, erythritol, cream protein isolate (95%), milk proteins, stevia extract, <b>thickener (gum arabic)</b> , natural food flavour, natural preservative (nisin), eggs), sweetener (erythritol), coffee, cocoa (1%), soybean isolate, konjac flour, potassium sorbate |



# Textured desserts

## PRODUCT EXAMPLES: Cheesecakes – Dairy

ACACIA GUM  
declared as **thickener**

ACACIA GUM  
declared as **firming agent**

| Passionfruit Cheesecake                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Golden Cheesecake                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Norway                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Estonia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Meny, Norway                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Gustav Cafe, Estonia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Meny                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Gustav                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p>Cake (sugar, cream, cream cheese (pasteurised milk, pasteurised cream), salt, stabiliser (E410, E412), souring culture), oatmeal, dairy butter, yogurt, water, passionfruit juice, whole milk, orange juice, vegetable oil (sunflower oil, shea oil, coconut oil), wheat flour (barley malt), whole wheat flour, raspberry puree, glucose syrup, modified maize starch (E1414), vanilla aroma, vanilla seed, vanilla extract, pork gelatine, thickening agent (E415, E440, E466), emulsifier (E471, E472b), acidity regulator (E330), aroma, preservative (E202), lactic acid culture, rennet, demerara sugar, syrup, raising agent (E500), salt, toppings (fruit, sugar, cocoa paste, cocoa butter, cocoa powder, powdered milk, lactose, whey powder, milk protein, rice flour, salt, vegetable oil (palm oil, palm kernel oil, coconut oil, canola oil), butter oil (milk), glucose syrup, water, wheat gluten, wheat malt flour, emulsifier (E322, soy lecithin and/or sunflower lecithin, E471), vanilla flavour, glycerol, <b>firming agent (E414, E440, E476)</b>, acidity regulating agent (E330), colour (E100, E120, E133, E151, E153, E155, E160c, E162, E163, E170, E171, E172), extract (spirulina extract, spinach extract, carrot extract, carthamus extract), antioxidant (E304, E306), surface treatment (E904), preservatives (E202))</p> | <p>White currants (20%), cream cheese (18%), cream, sugar, raspberries, orange jam (oranges, glucose syrup, thickener (modified starch), acidity regulator (citric acid), salt), egg, wheat flour, firming agent (gelatin), gel powder (sugar, acidity regulators (citric acid, sodium citrate, potassium phosphate), firming agents (carrageenan, pectin), <b>thickeners</b> (locust bean flour, <b>gum arabic</b>), dextrose, flavourings), dark chocolate (cocoa mass, sugar, cocoa butter, emulsifier (soy lecithin), natural vanilla flavouring), vanilla flavouring</p> |



## PRODUCT EXAMPLES: Textured desserts – Dairy

ACACIA GUM  
declared as **thickener**

| Moccacino Dessert                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Verrine Coffee Dessert                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Penny Market, Czech Republic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Spain                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Selection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Lidl, Spain                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Czech Republic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Deluxe                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <p>Reconstituted skimmed milk, glucose syrup, coconut oil, cream (11%), dried milk protein, sugar, alcohol, egg yolk, skimmed milk powder, stabilizer (sorbitol), fiber (inulin), coffee beans in chocolate (0.8%) (dark chocolate (86%) (cocoa mass, sugar, cocoa butter, emulsifier (soya lecithin)), roasted coffee beans (7%), cocoa powder (0.15%), cocoa butter, <b>thickener (gum arabic)</b>, polishing agents (shellac)), pork gelatin, emulsifiers (mono- and diglycerides of fatty acids), esters of mono- and diglycerides of fatty acids (lactic acid), soluble coffee (0.5%), thickening agent (agar, tara gum, xanthan gum), corn starch, dried egg white, milk chocolate (0.3%) (sugar, cocoa butter, dried whole milk, cocoa butter, emulsifier (soy lecithin), natural vanilla flavour), aroma</p> | <p>Coffee flavoured cream (71.4%) (skimmed milk (70%), cream, sugar, modified starch, flavour, starch, thickener (carrageenan), colourant (caustic sulphite caramel), acidity regulator (sodium citrate)), whipped cream (21.4%) (cream (84.6%) (22% minimum fat), sugar, gelatin, emulsifiers (mono- and diglycerides of fatty acids, acetic acid esters of mono- and diglycerides of fatty acids, lactic acid esters of monoglycerides and diglycerides), skimmed milk powder, flavour), coffee sauce (5.7%) (water, sugar, caramel (glucose syrup, sugar, water), coffee extract, <b>thickener (arabic gum, xanthan gum)</b>, preservative (potassium sorbate)), chocolate chips (1.4%) (sugar, cocoa mass, cocoa butter, emulsifier (soya lecithin), natural vanilla flavour)</p> |



# Textured desserts

ALLAND & ROBERT

## PRODUCT EXAMPLES: Textured desserts – Dairy

ACACIA GUM  
declared as **thickener**

ACACIA GUM  
declared as  
**emulsifier**

| Billionaire's Dessert                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Cappuccino Dessert with Coffee Cream, Milk Cream and Cocoa Sauce                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Marks & Spencer, UK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Croatia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Marks & Spencer The Collection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | I.F.F., Italy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| UK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Premium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Chocolate and salted, caramel sauce (33%) (sugar, water, dried whole milk, cocoa butter, cocoa mass, double cream (milk), butter (milk), sweetened condensed skimmed milk (skimmed milk, sugar, lactose (milk)), salt, cornflour, emulsifier (E471), soya lecithin, flavourings, caramelised sugar), whipping cream (milk), whole milk, sugar, wheatflour (gluten (wheatflour, calcium carbonate, iron, niacin, thiamin)), Belgian milk chocolate (3.5%) (sugar, dried whole milk, cocoa butter, cocoa mass, emulsifier (soya lecithin), vanilla extract), Belgian dark chocolate (3.5%) (cocoa mass, sugar, cocoa butter, emulsifier (soya lecithin), vanilla extract), butterscotch pieces (sugar, glucose syrup, brown sugar, palm oil, shea kernel oil, unsalted butter (milk), skimmed milk, salt, emulsifier (soya lecithin), sunflower lecithin, flavouring, lactose (milk)), glucose syrup, single cream (milk), palm oil, rapeseed oil, humectant (glycerol), fat reduced cocoa powder, cocoa butter, dried whole milk, stabiliser (carrageenan), beef gelatine, salt, dextrose, raising agent (sodium bicarbonate), flavouring, colour (plain caramel, E171, E172), gelling agent (pectin), <b>emulsifier (gum arabic)</b> , cornflour | Skimmed milk, glucose syrup, vegetable oil (coconut oil), cream (milk) (8.9%), dry glucose syrup, sugar, milk proteins, water, egg yolk, ethanol, gelatin (pork), skimmed milk powder, emulsifier (mono- and diglycerides of fatty acids), powdered cocoa, chocolate coated coffee beans (0.5%) (chocolate (86%) (cocoa mass, sugar, cocoa butter, emulsifier (lecithin (soy))), flavourings), roasted coffee beans, powdered cocoa, cocoa butter, <b>thickener (arabic gum)</b> , coating agent (shellac)), cocoa (0.5%) (cocoa, cocoa butter, dextrose, corn starch, sugar, vegetable fat (palm fat, coconut fat)), thickeners (carrageenan, xanthan gum, agar), instant coffee (0.4%), egg white powder, lemon fibres, natural cream flavour |





# Textured desserts

## PRODUCT EXAMPLES: Lemon meringue cakes – Dairy

ACACIA GUM  
declared as **thickener**

| Lemon Meringue Tart Dessert                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Lemon Meringue Cake                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| France                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Germany                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Senoble, France                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Lidl, Germany                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Senoble                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Duc De Coeur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Lemon cream 56% (skimmed milk, sugar, lemon juice (9.8%), cream (milk), modified starch, thickeners (pectin, E415, E452), acidifier (citric acid), natural flavouring, colourings (carotenoid, annatto, curcumin), fruit preservative (potassium sorbate)), meringue (31%) (fresh egg white (40.8%), glucose syrup, dextrose, sugar, beef gelatine, modified starch, acidifier (citric acid), stabiliser (E415), flavouring), biscuit (13%) (wheat flour, sugar, patisserie butter (milk), egg, salt, malt (barley), egg white, raising agents (E503, E500, E450), skimmed milk powder, stabiliser (sorbitol), colourings (E150c, carotenoid), <b>thickener (acacia gum)</b> ) | Skimmed milk, sugar, barn egg white (12.7%), glucose syrup, wheat flour, lemon juice from concentrate (5.6%), cream, dextrose, butter, modified starch, whole barn egg (0.3%), barley malt, <b>thickener</b> (pectin, xanthan gum, polyphosphate, <b>arabic gum</b> ), acidifier (citric acid), natural flavourings, colouring (carotenes, annatto, simple caramel), beef gelatine, flavouring, table salt, raising agent (ammonium carbonate, sodium carbonate, diphosphates), powdered skimmed milk, stabilizer (sorbitol), preservative (potassium sorbate) |





## PRODUCT EXAMPLES: Textured desserts – Plant-based

ACACIA GUM  
declared as **thickener**

| Praline Flavoured 100% Vegetable Rice Dessert                                                                                                                                                                                                                                                  | Velvety Almond & Chocolate Surprise Dessert                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| France                                                                                                                                                                                                                                                                                         | UK                                                                                                                                                                                                                                                                                                                                                                                                 |
| Laiterie Le Gall, France                                                                                                                                                                                                                                                                       | Tesco, UK                                                                                                                                                                                                                                                                                                                                                                                          |
| Grandeur Nature                                                                                                                                                                                                                                                                                | Tesco                                                                                                                                                                                                                                                                                                                                                                                              |
| Water, rice powder* (15%) (rice syrup*, rice starch*, rice flour*, <b>thickening agent (arabic gum)</b> , stabiliser (carrageenans)), praline* (5.5%) (sugar*, almond* (1.4%), hazelnut* (1.4%)), sugar*, copra oil*, algae (Lithothamnium calcareum)<br>*ingredients from organic agriculture | Glucose syrup, water, coconut oil, almonds (6%), sugar, dextrose, pasteurised egg yolk, corn starch, cocoa powder, sorbitol syrup, alcohol, <b>thickeners</b> (agar, tara gum, xanthan gum, <b>acacia</b> ), emulsifiers (mono- and diglycerides of fatty acids, soya lecithins), cocoa mass, lemon fibre, roasted coffee bean, cocoa butter, palm kernel oil, flavouring, glazing agent (shellac) |



# Textured desserts



## PRODUCT EXAMPLES: Textured desserts – Plant-based

ACACIA GUM  
declared as **thickener**

| Praline Flavoured Rice Dessert                                                                                                                                                                                                         | Dairy Free Butterscotch Pudding                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| France                                                                                                                                                                                                                                 | USA                                                                                                                                                                                                                     |
| June, France                                                                                                                                                                                                                           | WayFare, USA                                                                                                                                                                                                            |
| June                                                                                                                                                                                                                                   | Wayfare                                                                                                                                                                                                                 |
| Water, rice powder (15%) (rice syrup, rice starch, rice flour, <b>thickener (arabic gum)</b> , stabiliser (carrageenans)), praline (5.5%) (sugar, almond (1.4%), hazelnut (1.4%)), sugar, copra oil, seaweed (Lithothamnium calcareum) | Dairy free base (water, organic butter beans, organic oats), organic cane sugar, coconut oil, natural flavors, cultured dextrose, <b>gum arabic</b> , sea salt, sunflower lecithin, calcium citrate, konjac root powder |





## PRODUCT EXAMPLES: Textured desserts – Plant-based

With  
*Acacia fiber*

### Chocolate Flavoured Almond and Oat Dessert

France

Triballat Noyal, France

Sojasun

Water, sugar, soya\* (4.3%), texturing agents (GMO free modified corn starch, pectin), oat (3%), almond (2%), chocolate powder (2%), **acacia fibre**, natural flavouring, calcium salts, salt

\* GMO free ingredient

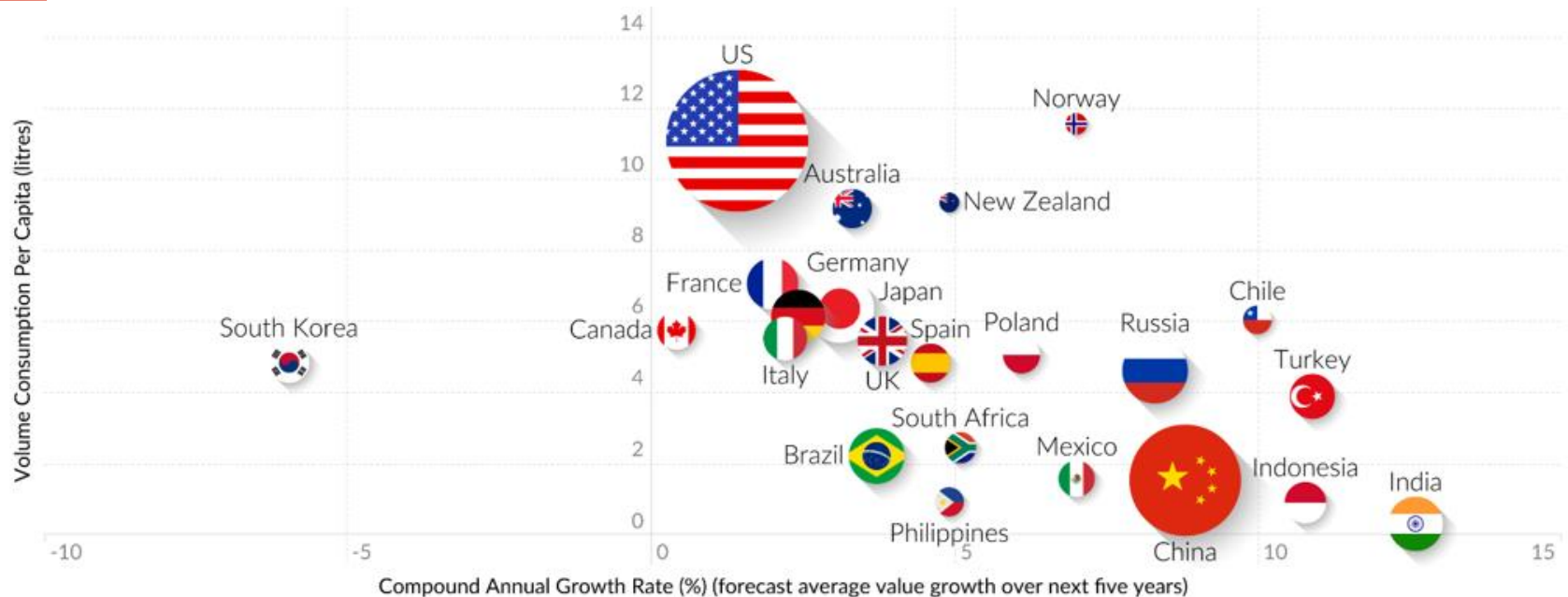


6

Ice creams

## GLOBAL RETAIL MARKET OVERVIEW

MINTEL



Base: bubble size is based on market volume (litres)

- > **US** is the **largest retail market** for ice cream
- > The majority of **European markets** are forecast to see **solid growth**
- > **Value growth** is expected to come from **Asian markets**



## ICE CREAMS BRANDS ARE TARGETING HEALTH CONSCIOUS CONSUMERS

MINTEL

- In the USA, Ice cream is well placed to help consumers managing their emotional wellbeing
- Consumers are also seeking out for more healthful options to meet their evolving dietary requirements
  - > Use of fruit and vegetable content
  - > Incorporation of functional ingredients
  - > High-protein and low-calorie options

FAVOURITE INDULGENCE

45%

of frozen treat consumers in the US say that ice cream and frozen novelties are their [favourite indulgence](#)



Recommended by nutritionists



28g of protein



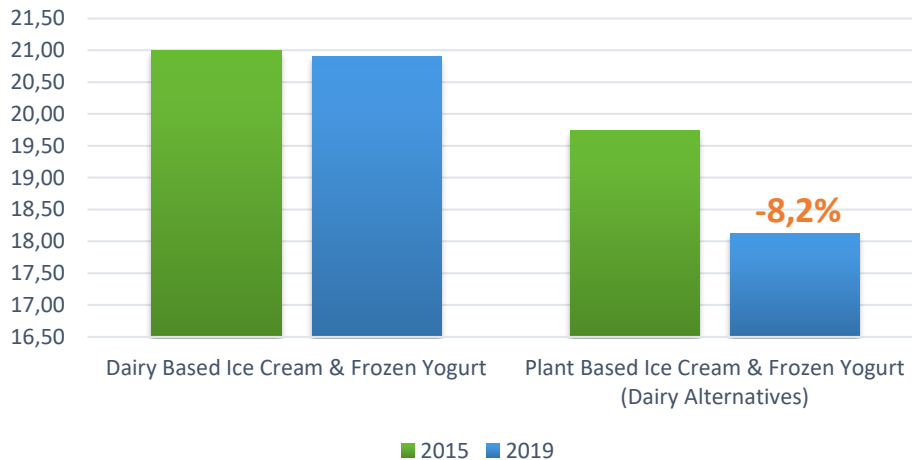
Dietary fibre

Base: US:1,828 internet users aged 18+ who purchased a frozen treat in the last 6 months;

Source: Lightspeed/Mintel

## ICE CREAMS BRANDS ARE TARGETING HEALTH CONSCIOUS CONSUMERS

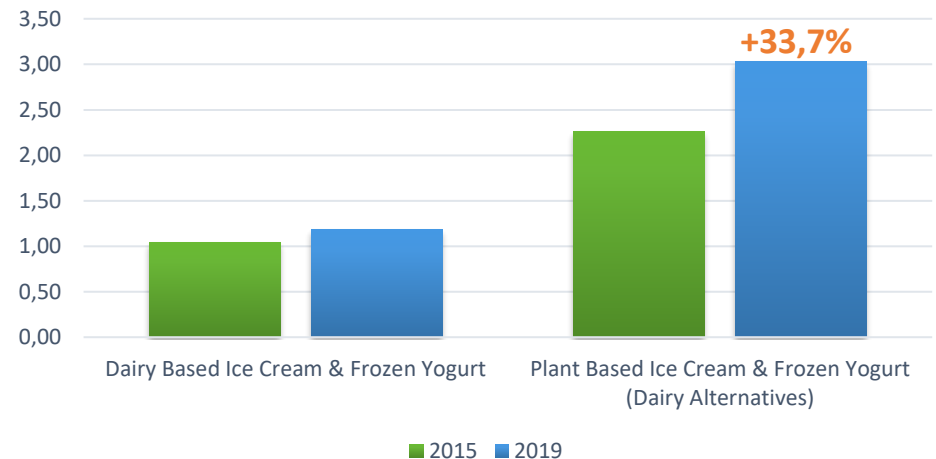
Sugars (g per 100g/ml)



- Less obvious for regular ice creams but moves in the same way

- Significant nutritional evolution, especially for plant-based specialities
- Less sugar and more fiber

Fibre (g per 100g/ml)



# Ice creams

A&R lab doesn't have required equipment to conduct tests.  
We would be very happy to enter into a partnership with you on this subject!

ALLAND & ROBERT

## ACACIA GUM REQUIRED FUNCTIONALITIES

### > TENSIOACTIVE PROPERTIES

- Stabilization of air-in-water system by whipping

- Mobilizes water

- > improves stabilization and decreases crystallization
- > gives a satisfactory final texture (smoother)

- Syrup texture to optimize the formulation of sugar free or sugar reduced products

- Lowers the density of the ice cream (→ more air incorporated)

> ENCAPSULATION OF FLAVOURS, COLOURS, NUTRIENTS, etc.:

> FIBER ENRICHMENT

### RECIPE SHEET

|                       |          |
|-----------------------|----------|
| ✓ Acacia gum SENEGAL  | 1 - 4%   |
| ✓ Milk                | 41%      |
| ✓ Liquid cream        | 41%      |
| ✓ Sucrose             | 14 - 17% |
| ✓ Flavors, colorings  | qs       |
| ✓ Other hydrocolloids | qs       |

### MANUFACTURING PARAMETERS

Mix the ingredients with a paddle blender and make the ice cream with adapted equipment

### ADDITIONAL INFORMATION

Pasteurize the mix



## PRODUCT EXAMPLES: Ice creams – Dairy

With  
Acacia fiber

| Salted Peanut Butter Ice Cream                                                                                                                                                                                                                                                                                              | Vanilla Gelato                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Germany                                                                                                                                                                                                                                                                                                                     | Canada                                                                                                                                                                                                                                                             |
| Purefood                                                                                                                                                                                                                                                                                                                    | Avril Supermarché Santé                                                                                                                                                                                                                                            |
| Stark                                                                                                                                                                                                                                                                                                                       | Gourmet Naturally                                                                                                                                                                                                                                                  |
| Water, apple juice concentrate* (13%), peanut butter* (8%) (peanuts* (100%)), whey protein concentrate* (6%), skimmed milk powder*, coconut blossom sugar* (3%), sweetener (3%) (erythritol*), <b>acacia fibres*</b> , cream*, thickener (guar gum*, locust bean gum*), sea salt (0.5%)<br>*from controlled organic farming | Organic milk (2%), organic cane sugar, organic cream (35%), vanilla bean, skim milk powder, <b>fibre</b> (inulin, <b>acacia</b> ), dextrose, maltodextrin, dehydrated glucose syrup, carob bean gum, guar gum, plant-based protein, dairy protein, carrageenan gum |



## PRODUCT EXAMPLES: Ice creams – Dairy

With  
Acacia fiber

| Amber-Coconut Organic Ice Cream                                                                                                                                                                                                                                                                                 | Vanilla & Cookies Ice Cream                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Denmark                                                                                                                                                                                                                                                                                                         | Germany                                                                                                                                                                                                                                                                   |
| Summerbird                                                                                                                                                                                                                                                                                                      | Healthy Planet                                                                                                                                                                                                                                                            |
| Summerbird Organic                                                                                                                                                                                                                                                                                              | Mini gelato                                                                                                                                                                                                                                                               |
| Skimmed milk*, cane sugar* (17%), whipping cream (17%), coconut milk* (5%), glucose powder*, water, coconut* (1%), skimmed milk powder, cocoa butter* (0.4%), milk powder*, sea salt, stabiliser (guar gum, locust bean gum), <b>acacia fiber*</b> , whey powder*, emulsifier (soya lecithin*), vanilla extract | Skimmed milk*, cream*, raw cane sugar*, eggs*, spelt flour*, butter*, cocoa mass*, cocoa butter*, <b>soluble fibres</b> (soluble agave fibre, <b>soluble acacia fibre</b> ), rice syrup*, cocoa powder*, vanilla*, lemon juice*, salt<br>*from controlled organic farming |



## PRODUCT EXAMPLES: Ice creams – Dairy

With  
Acacia fiber

Keto friendly  
product

| Sicilian Pistachio Gelato                                                                                                                        | Peanut Butter Cup Ice Cream                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| USA (produced in Italy)                                                                                                                          | Panama (produced in the USA)                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Kroger                                                                                                                                           | UpStar Nutrition                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| HemisFares                                                                                                                                       | Keto Pint                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Pasteurized whole milk, cream, sugar, pistachio paste, glucose syrup, locust bean gum, guar bean gum, <b>acacia fiber</b> , topping (pistachios) | Cream, whole milk, peanut butter base (water, peanuts, sea salt, natural flavor), egg yolk, erythritol, brownie (erythritol, almond flour, butter (cream, salt), cocoa processed (alkali), natural flavor, water, sodium bicarbonate, salt, sunflower lecithin), non-gmo chicory root fiber, milk protein concentrate, monk fruit extract, stevia extract, non-gmo tapioca fiber, vegetable glycerin, sea salt, non-gmo guar gum, <b>non-gmo gum acacia</b> |





## PRODUCT EXAMPLES: Ice creams – Dairy

High protein content  
product

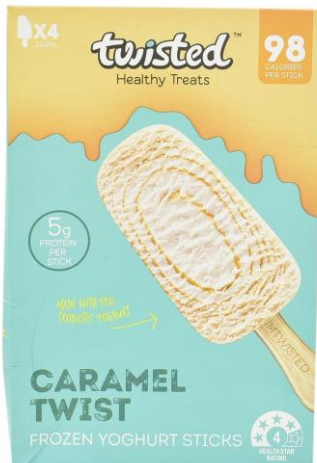
| Chocolate High Protein Reduced Fat Ice Cream                                                                                                                                                                                                             | Mango & Passion Fruit Flavoured Protein Ice Cream                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| New-Zealand                                                                                                                                                                                                                                              | Germany                                                                                                                                                                                                                    |
| Kiwi Lifestyle Foods                                                                                                                                                                                                                                     | Purefood                                                                                                                                                                                                                   |
| Iso Cream                                                                                                                                                                                                                                                | Stark                                                                                                                                                                                                                      |
| Water, whey protein isolate (soy lecithin), whey protein concentrate (sunflower lecithin), xylitol (natural sweetener), fresh cream, cocoa, natural flavour, <b>stabilisers</b> ( <b>gum arabic</b> , xanthan gum, guar gum), stevia (natural sweetener) | Drinking water, mango puree* (25%), agave nectar*, whey protein concentrate* (13%), <b>acacia fiber*</b> , passion fruit juice* (1%), thickening agent (guar gum*, carob seed flour*)<br>* from controlled organic farming |



## PRODUCT EXAMPLES: Ice creams – Dairy

Combination with other hydrocolloids

| Caramel Twist Frozen Yoghurt Sticks                                                                                                                                                                                                                                                                                                                                                                               | Strawberry and Vanilla Kefir Bars                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Australia                                                                                                                                                                                                                                                                                                                                                                                                         | Canada                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Twisted Healthy Treats                                                                                                                                                                                                                                                                                                                                                                                            | Les Aliments Lebel Foods                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Twisted Healthy Treats                                                                                                                                                                                                                                                                                                                                                                                            | Originale Augustin Organic                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Milk, fresh yoghurt (22%) (skim milk, milk solids non fat, cream, probiotic cultures (acidophilus, bifidus casei)), caramel ripple (12%) (sugar, glucose, milk, butter, vegetable fat, skim milk powder, natural flavour, pectin), milk solids sugar, glucose, dietary fibre, milk protein concentrate, erythritol, thickener (1412), vegetable gums (guar, acacia, tara), natural flavour, natural colour (150a) | Organic kefir (organic partially skim milk, active bacterial cultures), organic milk ingredients, organic sugar, organic strawberry ripple (organic strawberry puree, organic sugar, natural strawberry flavour, natural colour, organic guar gum, xanthan, organic locust bean gum), organic guar gum, xanthan, organic locust bean gum, gum arabic, organic soy lecithin, citric acid, probiotics (L. acidophilus, L. rhamnosus), natural flavour |



## PRODUCT EXAMPLES: Ice creams – Dairy

Combination with other hydrocolloids

| Lite Ice Cream + Probiotic Power                                                                                                                                                                                                                                                                                                                                                                      | Lemon Flavoured Frozen Yogurt                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Australia                                                                                                                                                                                                                                                                                                                                                                                             | New Zealand                                                                                                                                                                                                                   |
| Twisted Healthy Treats                                                                                                                                                                                                                                                                                                                                                                                | Cone Kings                                                                                                                                                                                                                    |
| Twisted Healthy Treats                                                                                                                                                                                                                                                                                                                                                                                | Cone Kings                                                                                                                                                                                                                    |
| Salted caramel and vanilla lite ice cream: low fat ice cream (90%) (whole milk (milk solids, water), milk protein concentrate, dietary fibre, erythritol, vegetable glycerin, thickener (1412), guar gum, xanthan gum, acacia gum, tara gum, probiotics (Bacillus coagulans GB130, 6086)), flavour blend (10%) (sugar, vanilla beans, sea salt, natural colour (150a), natural flavour, malt extract) | Milk solids, sugar, maltodextrin, low fat yoghurt (skim milk, lactococcus culture), dextrose, inulin, lemon juice, howaru dophilus, bifido, glucose (corn), citric acid, gum arabic, xanthan gum, guar gum, carrageenan, salt |



## PRODUCT EXAMPLES: Ice creams – Dairy

ACACIA GUM  
declared as **stabilizer**



| Siberian Blue Firs Ice Cream with Blue Curacao & Melon                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Salted Caramel Ice Cream Cones                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Russia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Austria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Novokuznetskiy Khladokombinat                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Unilever                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Snezhnyy Gorodok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Cornetto                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Water, sugar, dry skimmed milk, cream butter, milk fat substitute (refined deodorised vegetable oils) (hydrogenated palm olein, palm oil, sunflower oil, hydrogenated palm oil), glucose syrup, dry whey, melon puree, stabiliser/emulsifier (mono- and diglycerides of fatty acids), stabiliser (locust bean gum, guar gum, carrageenan), waffle cone (wheat flour, water, vegetable oil, sugar, emulsifier (soy lecithin), natural dye (vegetable coal)), kiwi filler (kiwi puree, sugar, thickener (pectin), acidity regulator (citric acid), preservative (potassium sorbate), natural dye chlorophyll, kiwi flavouring), chocolate glaze (sugar, non-lauric cocoa butter substitute, skimmed dry milk, emulsifier (soy lecithin), vanilla flavouring), melon flavouring, blue curacao flavouring, spirulina natural dye, rice balls in coloured glaze (sugar, non-lauric cocoa butter substitute, skimmed dry milk, emulsifier (soy lecithin), flavour, glazing agent (shellac), <b>stabiliser (gum arabic)</b> , preservative (potassium sorbate), dyes (tartrazine, brilliant blue)) | Skimmed milk, sugar, glucose syrup, vegetable fat and oil (coconut fat, coconut oil, sunflower fat, sunflower oil), wheat flour, fructose, water, glucose-fructose syrup, caramel syrup (1.5%), cocoa butter, low-fat cocoa, caramel powder (0.5%), salt, starch, <b>stabilisers</b> (guar gum, locust bean gum, <b>gum arabic</b> , carrageenan), emulsifiers (mono- and diglycerides of fatty acids, lecithin (soya), ammonium phosphatide), whole milk powder, whey product, flavourings (milk), caramelised sugar, beetroot juice concentrate, malt flour (wheat), wholemeal oat flour, cocoa mass, raising agent (sodium hydrogen carbonate) |



# Ice creams

## PRODUCT EXAMPLES: Ice creams – Dairy

ACACIA GUM  
declared as **stabilizer**

| Passionfruit Flavored Ice Cream                                                                                                                                             | Vanilla Flavored Protein Ice Cream                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Colombia                                                                                                                                                                    | Colombia                                                                                                                                                                      |
| Wellness Food Company                                                                                                                                                       | Wellness Food Company,                                                                                                                                                        |
| Free Zen                                                                                                                                                                    | Free Zen                                                                                                                                                                      |
| Lactose-free skimmed milk, passionfruit, isolated whey protein, sweetener (erythritol), polydextrose, sweetener (stevia), <b>stabilizers</b> (guar gum, <b>arabic gum</b> ) | Lactose-free milk, isolated whey protein, erythritol (sweetener), polydextrose, natural vanilla flavor, stevia (sweetener), <b>stabilizers</b> (guar gum, <b>arabic gum</b> ) |



## PRODUCT EXAMPLES: Ice creams – Dairy

ACACIA GUM  
declared as **stabilizer**

| Coloretto                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Cookies Ice Cream                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switzerland                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Latvia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Migros                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Rigas Piena Kombinats                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Fun Petit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Pols                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Whole milk (31%), sugar, wheat flour, cream (9%), cocoa mass, cocoa butter, glucose, whole milk powder, glucose syrup, sunflower oil, milk protein powder, rice flour, emulsifiers (sunflower lecithin, rapeseed lecithin, soy lecithin), egg yolk (free-range eggs), coconut oil, natural vanilla flavour, <b>stabilizers (gum arabic, locust bean gum, guar gum)</b> , citrus fibers, extract concentrate (Spirulina platensis, safflower blossom concentrate), salt, fruit and vegetable concentrates (pumpkin concentrate, lemon concentrate, radish concentrate, sweet potatoes, apple concentrate, blackcurrant concentrate), coating agent (beeswax, carnauba wax, shellac), natural flavour | Milk, sugar, strawberry sauce (10%) (sugar, strawberries (35%), glucose-fructose syrup, water, thickener (pectin), lemon juice from concentrate, natural flavouring, fruit and vegetable concentrates (apple concentrate, blackcurrant concentrate, radish concentrate), water, biscuits (5%) (wheat flour, sugar, margarine (refined palm oil, refined sunflower oil, water, acidity regulator (citric acid)), honey, glucose syrup, dry buttermilk, salt, malt extract, baking soda), butter fat, glucose syrup, white chocolate (4%) (sugar, cocoa butter, dry whole milk, dry whey, lactose, emulsifier (soy lecithin), natural vanilla flavouring), dry buttermilk, heavy cream, emulsifier (mono and diglycerides), <b>stabilizers (gum arabic, guar gum, carrageenan)</b> , flavouring) |





## PRODUCT EXAMPLES: Ice creams – Dairy

ACACIA GUM  
declared as stabilizer

| Cappuccino Flavoured Ice Cream                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Strawberry Brigadeiro, Beijinho and Brigadeiro Chocolate Ice Cream                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switzerland                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Brazil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Aldi Group                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Nestlé                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Grandessa Eiskreationen                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Nestlé Moça Doceria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Low-fat milk, cream (20%), glucose-fructose syrup, water, sugar, lactose, milk proteins, low-fat cocoa powder, coffee powder (0.7%), corn starch, cocoa paste, emulsifier (mono- and diglycerides of fatty acids), colouring (simple caramel), low-fat milk powder, <b>stabiliser</b> (locust bean gum, guar gum, carrageenan, <b>arabic gum</b> ), cocoa butter, Bourbon vanilla extract, coffee extract, salt, glucose syrup, coating agent (shellac), coconut fat, natural vanilla flavouring | Water, sugar, condensed milk, vegetable fat, strawberry flavored drink powder (cereals), glucose syrup, dulce de leche, whey, skimmed powder milk, maltodextrin, grated coconut, chocolate flavored granulated confection (sugar, vegetable fat, cocoa powder, water, salt, emulsifier (soy lecithin), <b>stabilizer (gum arabic)</b> ), cocoa powder, malt extract, thickeners (guar gum, jatai gum, carrageenan gum), emulsifiers (mono- and diglycerides of fatty acids), coloring (caramel IV), natural coloring (annatto), flavorings |



## PRODUCT EXAMPLES: Ice creams – Dairy

ACACIA GUM  
declared as emulsifier

| Organic Vanilla Ice Cream                                                                                                                                                                                                                                                  | Strawberry & Tropical Fruit Lollies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| France                                                                                                                                                                                                                                                                     | UK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Franprix                                                                                                                                                                                                                                                                   | R&R Ice Cream                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Franprix Bio                                                                                                                                                                                                                                                               | Nestlé Fab                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Whole milk*, sugar*, fresh cream*, skimmed milk powder*, liquid egg yolk*, liquid egg white*, <b>emulsifier (acacia gum)</b> , vanilla extract (0.3%), thickening agents (guar gum, carob seed flour), ground exhausted vanilla pods*<br>*ingredients from organic farming | Strawberry:<br>Strawberry flavour ice (63%) (water, strawberry juice from concentrate (9%), sugar, strawberry puree (5%), maltodextrin, fructose, flavourings, acid (citric acid), colours (beetroot red, curcumin), stabilisers (guar gum, sodium alginate, carrageenan), dextrose), vanilla flavour ice (25%) (water, reconstituted skimmed milk concentrate, sugar, maltodextrin, vegetable oils (palm stearin oil, palm oil, palm kernel oil), glucose syrup, whey powder (from milk), fructose, stabilisers (guar gum, sodium alginate), emulsifier (mono- and diglycerides of fatty acids), flavourings), chocolate flavour coating (6%) (vegetable oils (rapeseed oil, coconut oil), sugar, whey powder (from milk), fat-reduced cocoa powder, emulsifier (soya lecithin)), sugar strands (6%) (sugar, glucose syrup, vegetable oils (palm oil, coconut oil), water, beetroot juice concentrate, <b>emulsifiers</b> (polysorbate 60, <b>gum arabic</b> ), glazing agent (shellac, beeswax white)), colours (annatto, curcumin, beetroot red) |



## PRODUCT EXAMPLES: Ice creams – Dairy

ACACIA GUM  
declared as **glazing agent**

| Triple Caramel Ice Cream                                                                                                                                                                                                                                                                                                                                                                                                                                     | Salted Caramel Ice Cream                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Norway                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Poland                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Diplom-Is                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Jeronimo Martins                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Diplom-Is Royal                                                                                                                                                                                                                                                                                                                                                                                                                                              | Marletto                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Skimmed milk, cream (24%), sugar, glucose syrup, skimmed milk powder, condensed milk, cocoa butter, water, cocoa mass, whey powder, vegetable emulsifiers (mono- and diglycerides of fatty acids, soy lecithin), salt, stabilizers (carrageenan, guar gum, locust bean gum, sodium carboxymethylcellulose), butter, caramelized sugar, coconut oil, condensed skimmed milk, lactose, milk fat, natural flavouring, <b>glazing agent (acacia gum)</b> , honey | Skimmed milk, concentrated skimmed milk, sugar, glucose syrup, vegetable fats in variable proportions (coconut fat, palm fat), caramel flavoured drops (4.4%) (sugar, cocoa fat, milk powder, skimmed cocoa powder, emulsifier (lecithin), natural flavour, pepper extract), cream (4.6%), glucose-fructose syrup, peanuts (2.9%), sweetened concentrated milk (milk, sugar), salted wheat in caramel coating (2.5%) (caramel flavoured milk and white chocolate mix (84%) (sugar, cocoa fat, caramel powder (condensed milk, sugar, glucose syrup, salt, acidity regulator (sodium carbonate), milk powder, whey powder (from milk), cocoa mass, emulsifier (lecithin (from soya)), natural flavour)), salted corn crisps (15%) (wheat flour, sugar, salt, oat flour, malt flour, raising agent (sodium carbonate), natural vanilla flavour), glucose syrup, sugar, <b>glazing agent (arabic gum)</b> , modified starch, coconut fat), water, emulsifier (mono- and diglycerides of fatty acids, stabilizers (locust bean gum, guar gum), glucose, colours (caramel colour), carotene, honey, natural flavours, oils (sunflower oil, shea oil, rapeseed oil), gelling agent (arabic gum), salt, burnt sugar, thickening agent (pectins)) |





## PRODUCT EXAMPLES: Ice creams – Plant-based

With  
Acacia fiber

| Peanut Flavored Rice Milk Ice Cream                                                                                                                                                                                                                                                                                                                                               | Banana-Based Dairy Free Ice Cream                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mexico                                                                                                                                                                                                                                                                                                                                                                            | UK                                                                                                                                                                                                   |
| Zenzero Gelato MFG                                                                                                                                                                                                                                                                                                                                                                | Banana Scoops                                                                                                                                                                                        |
| Zenzero ZeroGelato                                                                                                                                                                                                                                                                                                                                                                | Banana Scoops                                                                                                                                                                                        |
| Water, <b>vegetable fiber (acacia fiber</b> , corn fiber, chicory fiber, baobab fiber), rice powder (30%), erythritol (0.015g), date, coconut oil, maltodextrin, tara gum, dehydrated baobab fruit pulp, natural flavors, pea protein, peanut paste (4%) (peanut, palm oil), natural peanut flavor, probiotic (Bacillus coagulans GBI-30,6086 (10000000 UFC/g)), stevia (0.0002g) | Banana puree (61%) (bananas, lemon juice concentrate, antioxidant (ascorbic acid)), water, date syrup (12%), cocoa powder (3.2%), <b>acacia fibre</b> , gluten-free oat starch, vanilla extract (1%) |





## PRODUCT EXAMPLES: Ice creams – Plant-based

Combination with other hydrocolloids

| Coconut Lemongrass Naturally Flavored Fruit Bars                                                        | Mango Frozen Bar                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| USA                                                                                                     | Malaysia (produced in New-Zealand)                                                                                                                       |
| Whole Foods Market                                                                                      | Tasman Bay Food Group                                                                                                                                    |
| Whole Foods Market Limited Herb Garden Collection                                                       | Coconut Juicies                                                                                                                                          |
| Water, coconut cream, cane sugar, coconut flakes, natural flavor, guar gum, locust bean gum, acacia gum | Fruit juice (94.4%) (fresh pressed apple juice, mango puree (6%)), coconut cream (5%), natural flavour, natural gums (acacia gum, guar gum, xanthan gum) |





## PRODUCT EXAMPLES: Ice creams – Plant-based

Combination with other hydrocolloids

| Vanilla Bean Plant-Based Ice Cream                                                                                                    | Chocolate Fudge Crunch Coconut Non-Dairy Frozen Dessert                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chile                                                                                                                                 | Canada                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| The Not Company, Chile                                                                                                                | Daiya Foods, Canada                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| X NotCo Not Ice Cream                                                                                                                 | Daiya                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Water, coconut butter, sugar, vanilla, glucose, dextrose, pea protein, <b>acacia fiber</b> , <b>guar gum</b> , <b>locust bean gum</b> | Non-dairy frozen dessert (water, coconut cream, cane sugar, fudge swirl (tapioca syrup, water, cane sugar, cocoa * (processed (alkali)), cocoa*, chocolate liquor*, <b>guar gum</b> , salt), tapioca syrup, cocoa powder * (processed (alkali)), fava bean protein, cocoa butter*, <b>tamarind seed gum</b> , <b>acacia gum</b> , sea salt, <b>locust bean gum</b> , coating (dark chocolate* (unsweetened chocolate, cane sugar, cocoa butter, vanilla extract), coconut oil, pumpkin seeds))<br>*fair trade |







## PRODUCT EXAMPLES: Ice creams – Plant-based

Combination with other hydrocolloids

| Chocolate Dairy Free Gelato                                                                                                                                                  | Chocolate Plant-Based Frozen Dessert                                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| USA                                                                                                                                                                          | USA                                                                                                                                                                                                                                                                     |
| O'My Foods                                                                                                                                                                   | Ripple Foods                                                                                                                                                                                                                                                            |
| O'My!                                                                                                                                                                        | Ripple                                                                                                                                                                                                                                                                  |
| Organic coconut cream, water, allulose, organic cocoa powder, vegetable gums (acacia gum, tara gum, guar gum), natural flavor, sea salt, plant extracts (stevia, monk fruit) | Ripptein pea blend (water, pea protein), water, organic cane sugar, coconut oil, tapioca syrup, alkalized cocoa powder, chicory root fiber, 1% or less of (sea salt, sunflower lecithin, dipotassium phosphate, natural flavors, acacia gum, locust bean gum, guar gum) |





## PRODUCT EXAMPLES: Ice creams – Plant-based

Combination with other hydrocolloids



| Coconut Mini Ice Cream Sticks Covered in Chocolate                                                                                                                                                                                                                                                                                                                                      | Dairy Free Caramel Drizzle Round Sammies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Italy                                                                                                                                                                                                                                                                                                                                                                                   | USA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Valsoia                                                                                                                                                                                                                                                                                                                                                                                 | Oregon Ice Cream                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Valsoia                                                                                                                                                                                                                                                                                                                                                                                 | Alden's Organic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Coconut drink (45%) (water, coconut paste (5.9%)), chocolate (23%) (coconut paste, sugar, cocoa butter, emulsifier (soy lecithin), natural vanilla flavour), coconut oil, sugar, glucose syrup, maltodextrin, stabilizers (methylcellulose), <b>gum arabic</b> , <b>carob seed flour</b> , <b>guar gum</b> , coconut shavings (0.35%), dextrose, pea protein, sea salt, natural flavour | Dairy free frozen dessert blend* (water, cane sugar*, coconut oil*, tapioca syrup*, inulin*, brown rice*, whole oat flour*, <b>acacia gum*</b> , pea protein*, soy lecithin*, <b>guar gum*</b> , <b>locust bean gum*</b> ), non-dairy caramel* (tapioca syrup*, water, cane sugar*, pea protein*, natural flavor*, salt, coconut oil*, pectin), caramel base* (sugar*, water), sea salt, natural caramel flavor*, annatto extract* (color)<br>cookie wafers:<br>wheat flour*, cane sugar*, palm oil*, cane syrup*, 2% or less of (natural flavor*, salt, soy lecithin*, baking soda)<br>*organic |





## PRODUCT EXAMPLES: Ice creams – Plant-based

ACACIA GUM  
declared as **stabilizer**

ACACIA GUM  
declared as **emulsifier**

| Coffee Avocado Frozen Dessert                                                                                                                                       | Vegan Ice with Mango, Passionfruit and Fennel                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Australia                                                                                                                                                           | Netherlands (produced in Italy)                                                                                                                                                                                                                                                                                                                                                              |
| Gelavo                                                                                                                                                              | Gigi Gelato                                                                                                                                                                                                                                                                                                                                                                                  |
| Gelavo                                                                                                                                                              | Gigi                                                                                                                                                                                                                                                                                                                                                                                         |
| Water, avocado (23%), sugar, canola oil, dextrose, <b>stabiliser (acacia gum)</b> , coffee powder (1.5%), cocoa powder, lime juice, flavour (vanilla flavour), salt | Fruit and vegetable juice (45%) (mango puree (40%), orange juice (30%), passion fruit juice (10%), fennel juice (10%)), apple juice (15%), water, dietary fibre (inulin), maltodextrin, date sugar, vegetable fat (coconut fat), sweetener (dextrose), <b>emulsifier (acacia gum)</b> , stabilisers (guar gum, dextrin, locust bean gum, carrageenan, xanthan gum), lemon juice (0.1%), salt |



7

## Powdered forms

## ACACIA GUM INTERESTING FUNCTIONALITIES

---

### > ENCAPSULATION OF FLAVOURS, COLOURS, NUTRIENTS, etc.:

- Ensures a **better encapsulation** of oil droplets (essential oils, oleoresins, flavours, colours, vitamins, etc.)
- **Improves stability:** protects final powder from **moisture, oxidation,** flavours/essential oils against **release and loss** of volatile compounds

### > THICKENESS & MOUTHFEEL IMPROVEMENT

### > FIBER ENRICHMENT

The product reference (Seyal, Senegal, Instant, Spray dried, etc.) and dosage will depend on the customer process, goals, other ingredients, etc.

## ENCAPSULATION: TENSIO ACTIVE/FILM FORMING PROPERTIES

### RECIPE:

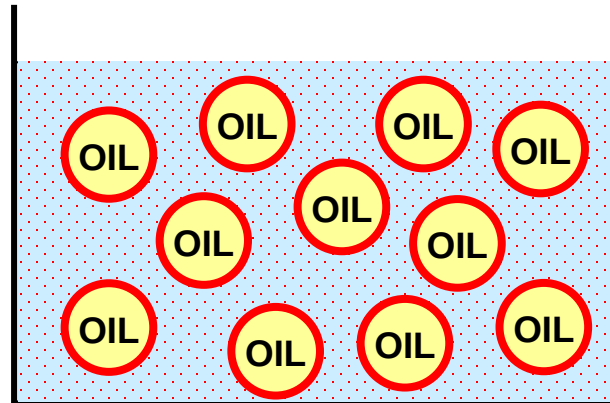
- ✓ Acacia gum SEYAL 20 to 30%
- ✓ Water 54.5 to 64.5 %
- ✓ Citric acid 0.5%
- ✓ Oil phase 15%

### MANUFACTURING PARAMETERS:

- Mix the 2 parts with a high speed mixer and then with a high pressure homogenizer.
- Drying step.

### ADDITIONAL INFORMATION

- Wait for the complete hydration of the gum before emulsification.
- 2 stages minimum for the high pressure: step 1 (5500 PSI) – step 2 (700 PSI) to smooth the emulsion and to separate possible aggregates



**CONTINUOUS PHASE:**  
**WATER**

**Thickening agent = ACACIA GUM**

**DISPERSED PHASE:**  
**OIL**  
**without weighting agent**



## ENCAPSULATION: TENSIO ACTIVE/FILM FORMING PROPERTIES

### RECIPE:

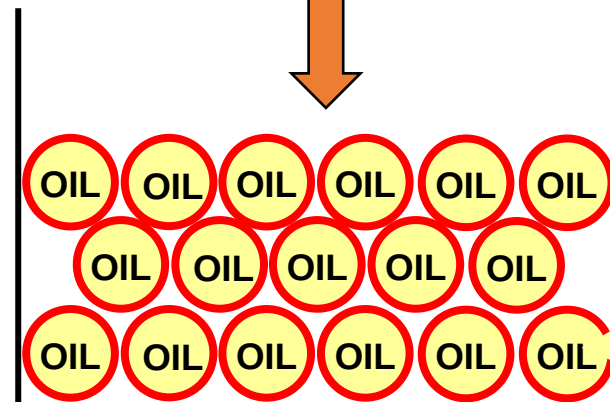
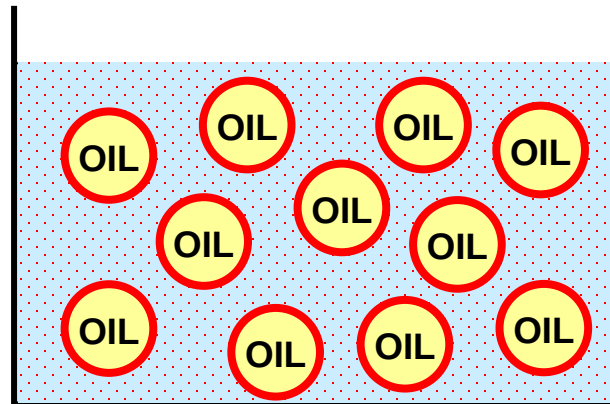
- ✓ Acacia gum SEYAL 20 to 30%
- ✓ Water 54.5 to 64.5 %
- ✓ Citric acid 0.5%
- ✓ Oil phase 15%

### MANUFACTURING PARAMETERS:

- Mix the 2 parts with a high speed mixer and then with a high pressure homogenizer.
- Drying step.

### ADDITIONAL INFORMATION

- Wait for the complete hydration of the gum before emulsification.
- 2 stages minimum for the high pressure: step 1 (5500 PSI) – step 2 (700 PSI) to smooth the emulsion and to separate possible aggregates



Thickening agent = ACACIA GUM

### DISPERSED PHASE:

OIL

without weighting agent

ACACIA GUM

OIL phase  
encapsulation

# Powdered forms

## PRODUCT EXAMPLES: Powders – Dairy

With  
*Acacia fiber* for baby & kids

| Growing Up Milk Stage 1 Plus                                                                                                                                                                                                                                                                                                                | Vanilla Flavoured Complete Nutrition Formula Dietary Food                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Indonesia                                                                                                                                                                                                                                                                                                                                   | Vietnam (produced in Switzerland)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Sarihusada Generasi Mahardhika                                                                                                                                                                                                                                                                                                              | Nestlé                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Sarihusada SGM Digesmil Presinutri+                                                                                                                                                                                                                                                                                                         | Nestlé Health Science Nutren Junior                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Whey protein, skim milk powder, maltodextrin, vegetable oil mix (antioxidant dl-alpha tocopherol, ascorbyl palmitate), <b>multi fibre 5</b> (inulin, cellulose, <b>arabic gum</b> , starch, FOS), l-glutamine, 9 minerals, lactose, soy lecithin emulsifier, acidity regulator (citric acid), 14 vitamins, nature identical vanilla flavour | Maltodextrin, sucrose, milk protein (whey, potassium caseinate), vegetable oils (high oleic sunflower oil, low erucic rapeseed oil, sunflower oil), medium chain triglycerides, minerals (potassium phosphate, sodium phosphate, calcium carbonate, calcium chloride, magnesium chloride, ferrous sulphate, zinc sulphate, manganese sulphate, copper sulphate, potassium iodide, sodium selenate, chromium chloride, sodium molybdate), <b>prebiotic fibres</b> ( <b>acacia gum</b> , fructo-oligosaccharides, inulin), emulsifier (soy lecithin), nature identical vanilla flavour, choline bitartrate, acidity regulator (citric acid), fish oil, vitamins (vitamin C, vitamin E, niacin, calcium pantothenate, vitamin B6, vitamin A, vitamin B1, vitamin B2, folic acid, vitamin K1, biotin, vitamin D3, vitamin B12), probiotics (cultures of Bifidobacterium longum, Lactobacillus paracasei), taurine, l-carnitine |

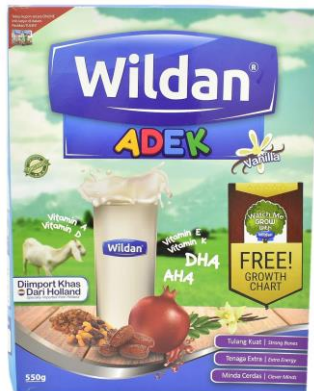


# Powdered forms

## PRODUCT EXAMPLES: Powders – Dairy

For baby & kids

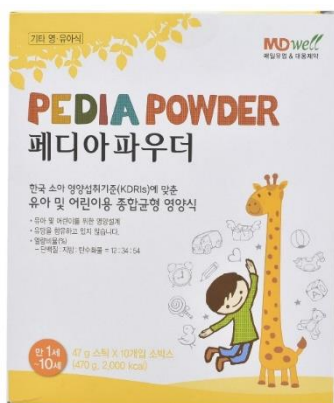
| Vanilla Flavoured Goat Milk Powder                                                                                                                                                                      | Chocolate Flavoured Protein Supplement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Malaysia                                                                                                                                                                                                | India                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Wildan Niaga                                                                                                                                                                                            | Nutricia International                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Wildan ADEK                                                                                                                                                                                             | Protinex Junior                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Milk powder (organic goat's milk), dates, honey, pomegranate, DHA, ARA, <b>gum arabic</b> , vanilla, vegetable oils (sunflower oil, canola oil), lactose sugar, permitted food conditioner (emulsifier) | Partially skimmed milk, sucrose, whey protein concentrate, soya protein isolate, corn oil, medium chain triglyceride, minerals (dicalcium phosphate, dipotassium phosphate, magnesium chloride, ferrous sulphate, zinc sulphate, cupric sulphate, manganese sulphate, potassium iodide, chromium chloride, hexa ammonium molybdate, sodium selenite), fructo-oligo-saccharides, cocoa powder, beet root juice powder, <b>edible gum (gum acacia)</b> , algal oil (source of DHA), choline chloride, emulsifier (INS 322), vitamins (ascorbic acid, dl-alpha tocopheryl acetate, nicotinamide, retinyl acetate, calcium pantothenate, ergocalciferol, thiamine hydrochloride, cyanocobalamin, pyridoxine hydrochloride, riboflavin, folic acid, phytylmenaquinone, d-biotin), taurine, inositol, l-carnitine, antioxidant (INS 306) permitted natural colour (INS 150d), added nature identical flavouring substances |



# Powdered forms

## PRODUCT EXAMPLES: Powders – Dairy

ACACIA GUM  
For nutrient **encapsulation**



| Growing Up Milk for Toddlers and Children                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Fruit Flavoured Milk Powder with High Calcium Formula                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| South Korea                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Taiwan, China                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| MDWell INC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Wei Chuan Food Industrial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| MDwell Pedia Powder                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Wei Chuan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <p>Pedia pre mix (dextrin, mixed vegetable oil (soybean oil, high oleic sunflower oil, palm oil, mixed D-tocopherol), milk protein powder, fructooligosaccharides, MCT oil, potassium citrate, <b>vitamin and mineral mixed formulation</b> (fortifying nutrient, maltodextrin, corn starch, <b>gum arabic</b>, sucrose, trisodium citrate, citric acid), potassium chloride, emulsifier, magnesium chloride, choline chloride, taurine, L-carnitine, DL-a-tocopheryl acetate, vitamin D3 mixed formulation (vitamin D3, vitamin E, MCT oil, gum arabic, sucrose, corn starch)), dextrin, white sugar, milk protein powder, calcium phosphate dibasic, tricalcium Phosphate, DHA powder, ethyl vanillin, ferric phosphate</p> | <p>Milk powder (whole milk powder (soy lecithin), skimmed milk powder, whole milk powder), sucrose, glucose, mixed juice powder (whole milk powder, mixed flavours (ethanol, water, flavour), orange juice concentrate, juice concentrate (pineapple juice concentrate, orange juice concentrate, passion fruit juice concentrate, banana juice concentrate, tangerine juice concentrate, mango juice concentrate, papaya juice concentrate, lemon juice concentrate, lime juice concentrate), mixed phosphate (sodium metaphosphate, sodium polyphosphate, sodium pyrophosphate), turmeric colouring (maltodextrin, polysorbate 80, silica, citric acid), citric acid), whey powder, lactose, minerals (calcium carbonate, calcium citrate), vitamin C, <b>mixed vitamin A powder</b> (maltodextrin, <b>gum arabic</b>, corn starch, antioxidant (vitamin E)), mixed vitamin D3 (starch sodium octenyl succinate, sucrose, antioxidant (sodium L-ascorbate, vitamin E), medium chain triglyceride, silica), vitamin B1, vitamin B2</p> |



# Powdered forms

## PRODUCT EXAMPLES: Powders – Dairy

ACACIA GUM  
For nutrient **encapsulation**

| Special Nutrient for Strong Bones                                                                                                                                                                                                                                                                                                                                                                                                              | Vanilla Flavoured High Calcium Low Fat Milk                                                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vietnam                                                                                                                                                                                                                                                                                                                                                                                                                                        | Indonesia                                                                                                                                                                                                                                                                             |
| NutiFood                                                                                                                                                                                                                                                                                                                                                                                                                                       | Fonterra Brands                                                                                                                                                                                                                                                                       |
| Dr.Lucen Expert Nutrition                                                                                                                                                                                                                                                                                                                                                                                                                      | Fonterra Anlene Gold                                                                                                                                                                                                                                                                  |
| Skimmed milk powder, maltodextrin, full cream milk powder, vitamin A, vitamin D3, sucrose, FOS/Inulin, <b>nano calcium</b> (calcium carbonate, <b>gum arabic</b> , dextrin), tricalcium carbonate, vitamins and mineral compound (vitamin A, vitamin D3, thiamine mononitrate, niacinamide, calcium D-pantothenate, pyridoxine hydrochloride, vitamin E acetate, iron pyrophosphate, folic acid, zinc sulfate, vitamin K2), artificial flavour | Non fat milk powder, maltodextrin, whey powder, full cream milk powder, calcium carbonate, premixed vitamins and minerals, milk flavour, vanilla flavour, <b>calcium</b> (calcium carbonate, <b>arabic gum</b> , dextrin), artificial sweetener (sucralose (2mg/serving)), vitamin D3 |



# Powdered forms

## PRODUCT EXAMPLES: Powders – Dairy



ACACIA GUM  
For nutrient **encapsulation**

| Vanilla Flavored Fortified Dietary Supplement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ecuador                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| DLIP Industrial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Live Nutrition Kids                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Micro-encapsulated fats rich in <b>omegas 6 and 0</b> (sunflower oil, maltodextrin, <b>arabic gum</b> ), maltodextrin, protein mix (hydrolyzed collagen, whey protein, isolated soy protein), vitamins and minerals mix (potassium citrate, magnesium sulfate, potassium phosphate, calcium carbonate, vitamin D, ferric pyrophosphate, vitamin C, zinc oxide, vitamin B3 niacin, pantothenic acid, vitamin A acetate, vitamin B2 riboflavin, vitamin B6 pyridoxine, vitamin B1 thiamine, vitamin B9 folic acid, vitamin B12 cobalamin), nature identical vanilla flavor, silicon dioxide, stevia |



# Powdered forms

## PRODUCT EXAMPLES: Powders – Dairy

ACACIA GUM  
declared as **stabilizer**



### Sweetened Milk Powder with Calcium

Colombia

Nuval

Lechitos

Whey powder, maltodextrin, sucrose (sugar), whole milk powder, vegetal oil (and/or (palm oil, corn oil, canola oil, sunflower oil, soy oil, coconut oil)), dairy base (skim milk powder, palm fat, dairy solids, sucrose, sunflower oil, soy lecithin, vitamin A, vitamin D, beta carotene), dairy base (maltodextrin, dairy solids, palm vegetable oil, dairy proteins, **stabilizer (arabic gum)**, anti-caking agent (silicium dioxide)), calcium carbonate, emulsifier (xanthan gum and/or carboxymethylcellulose)

# Powdered forms

## PRODUCT EXAMPLES: Powders – Dairy

With  
Acacia fiber for nutrition



| Vanilla Flavoured Cream                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Instant Lactose-Free Skimmed Milk Powder                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Germany                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Chile                                                                                                                                                                                                                                                                                                                 |
| Nestlé Health Science, Germany                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nestlé                                                                                                                                                                                                                                                                                                                |
| Nestlé Health Science Optifast                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nestlé Svelty                                                                                                                                                                                                                                                                                                         |
| Milk protein, skimmed milk powder, vegetable oils (milk protein, rapeseed oil, sunflower oil), modified starch, <b>fibres (gum arabic, fructooligosaccharides, inulin)</b> , maltodextrin, minerals (potassium citrate, magnesium citrate, sodium chloride, iron sulfate, zinc sulfate, copper gluconate, manganese sulfate, sodium fluoride, sodium selenite, chromium chloride, sodium molybdate, potassium iodide), fish oil (soy lecithin, milk protein), flavour, vitamins (niacin, vitamin E, pantothenic acid, vitamin C, vitamin B6, thiamine, riboflavin, vitamin A, folic acid, vitamin K, biotin, vitamin D, vitamin B12), thickener (carrageenan), sweetener (aspartame, acesulfame K), colour (curcumin) | Skim milk, maltodextrin, resistant dextrin, calcium carbonate, <b>thickener (acacia gum)</b> , lactase, emulsifiers (soy lecithin, sodium polyphosphate), acidity regulator (potassium phosphate), nature identical flavor, vitamin C, ferrous pyrophosphate, vitamins (vitamin E, vitamin A, vitamin K1, vitamin D3) |



# Powdered forms

## PRODUCT EXAMPLES: Yogurt Powders – Dairy



| Mango Yogurt Powder                                                                                                                                                                                                                                                                                                                                                                                                            | Greek Yogurt Powder                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| South Korea                                                                                                                                                                                                                                                                                                                                                                                                                    | South Korea                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Home Plus                                                                                                                                                                                                                                                                                                                                                                                                                      | Chorocmaeul                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Home Plus                                                                                                                                                                                                                                                                                                                                                                                                                      | Chorocmaeul                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Mango puree powder (7%) (mango puree (36%) (solids (15%)), dextrin, cyclodextrin, <b>arabic gum</b> , carthamus yellow), yogurt mix powder (11%) (yogurt powder (skimmed milk powder (100%)), mixed skimmed milk powder (defatted milk powder (85%), whey powder)), sugar, dextrin, anhydrous citric acid, synthetic flavouring agent (mango flavour powder, yogurt flavour powder), malic acid, guar gum, mixed lactobacillus | Greek yogurt powder (50%) (Greek yogurt cultured liquid (organic milk (80.179%), milk cream, skim milk powder, refined sugar, condensed milk protein, lactobacillus, L. rhamnosus IDCC 3201 (0.002%), L. johnsonii IDCC 9203 (0.0002%)), dextrin, sweet whey powder, refined sugar, <b>arabic gum</b> , DL-malic acid), skim milk powder, yogurt flavour powder (16.4%) (refined sugar, glucose, Lactone (whey), yogurt powder (nonfat dry milk), dextrin), SUNMIX-A (distarch phosphate, dextrin, SUNMIX NH), citric acid anhydrous, fructooligosaccharide, double diced dried cranberry, dextrin, potassium phosphate dibasic, freeze-dried strawberry powder, freeze-dried blueberry powder |



# Powdered forms



## PRODUCT EXAMPLES: Powders – Plant-based

With  
Acacia fiber



| Organic Coconut Milk Powder                                                                                                                                             | Organic Almond Milk Powder                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| South Africa                                                                                                                                                            | South Africa                                                                                                                                             |
| Universal Vision                                                                                                                                                        | Universal Vision                                                                                                                                         |
| Universal Vision La Mandorle                                                                                                                                            | Universal Vision La Mandorle                                                                                                                             |
| Partially defatted coconut pulp (50%), <b>acacia fibre (prebiotic)</b> , dehydrated rice syrup, natural vanilla flavour, natural coconut flavour, coconut flower nectar | Organic defatted almonds (65%), <b>organic acacia fibre</b> , organic dehydrated rice syrup, organic natural vanilla aroma, organic natural almond aroma |



# Powdered forms



## PRODUCT EXAMPLES: Powders – Plant-based

With  
*Acacia fiber*

| Coconut Mylk Powder                                                 | Almond Milk                                                                                                                                             |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lebanon (produced in Philippines)                                   | Germany                                                                                                                                                 |
| Eshmoon Organic Boutique                                            | La Mandorle                                                                                                                                             |
| Eshmoon Organics                                                    | La Mandorle                                                                                                                                             |
| Dehydrated coconut milk, tapioca starch,<br><b>acacia gum fiber</b> | Partly defatted almonds* (65%), dehydrated<br>rice syrup*, <b>acacia fibre*</b> , vanilla* extract,<br>natural almond flavour*<br>*from organic farming |



# Powdered forms



## PRODUCT EXAMPLES: Powders – Plant-based

With  
Acacia fiber

| Almond Super Drink                                                                                                                                                                                                                                                                                                     | Organic Almond Milk Powder                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| France                                                                                                                                                                                                                                                                                                                 | New Zealand                                                                                                                                       |
| Biodyne                                                                                                                                                                                                                                                                                                                | Natural Sugars                                                                                                                                    |
| Biodyne                                                                                                                                                                                                                                                                                                                | Stir it Up! By Harvest                                                                                                                            |
| Vegetable proteins* (43%) (almonds* (33%), rice*), corn maltodextrin*, rice syrup*, seaweeds (4%) (Lithothamnium calcareum, Fucus vesiculosus, Ascophyllum nodosum, Laminaria digitata), <b>acacia fibre*</b> , natural vanilla flavouring, natural almond flavouring, thickener (guar gum*)<br>* from organic farming | Instant almonds* (20%) (defatted almonds*, rice syrup*, <b>acacia fibre*</b> ), corn starch*, corn syrup*, natural aroma*<br>*organic ingredients |





# Powdered forms



## PRODUCT EXAMPLES: Powders – Plant-based

| Organic Coconut Milk Powder                                                   | Organic Vegan Coconut Milk Powder                                                                                                  |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| USA                                                                           | South Africa (produced in Vietnam)                                                                                                 |
| Anthony's                                                                     | Taka Health                                                                                                                        |
| Anthony's                                                                     | Cocolicious                                                                                                                        |
| Organic coconut milk, organic tapioca maltodextrin, <b>organic gum acacia</b> | Organic coconut milk (97%), organic tapioca maltodextrin (derived from organic yuka root) (2.5%), <b>organic gum acacia</b> (0.5%) |



# Powdered forms



## PRODUCT EXAMPLES: Powders – Plant-based

| Organic Coconut Drink Powder                                                                         | Coconut Drink Mix                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mexico                                                                                               | Mexico                                                                                                                                                                                                                            |
| Vaserco                                                                                              | Terrafertil                                                                                                                                                                                                                       |
| Enature                                                                                              | Nature's Heart                                                                                                                                                                                                                    |
| Organic solids coconut, organic inulin, organic agave syrup, organic maltodextrin, <b>gum arabic</b> | Coconut cream powder (coconut extract, maltodextrin, sodium caseinate (lactose-free dairy derivative), disodium phosphate (anti-caking)), maltodextrin, sugar, natural flavors, salt, <b>arabica gum (acacia gum) (thickener)</b> |



# Powdered forms



## PRODUCT EXAMPLES: Powders – Plant-based

With  
Acacia fiber - Organic

| Organic Coconut Milk Powder Creamer                                                                                                | Vegan Whipping Cream                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| USA                                                                                                                                | Germany                                                                                                                                                                                          |
| Terrasoul Superfoods                                                                                                               | Biovegan                                                                                                                                                                                         |
| Terrasoul Superfoods                                                                                                               | Biovegan                                                                                                                                                                                         |
| Organic dehydrated coconut milk, <b>organic acacia fiber (0.5%)</b> , organic tapioca maltodextrin (2.5%) (derived from yuca root) | Icing sugar*, potato starch*, <b>thickener (arabic gum*)</b> , maple syrup flakes*, potatoes*, thickener (guar gum*), inulin*, rice protein*, Himalayan salt<br>*from controlled organic farming |



# Powdered forms



## PRODUCT EXAMPLES: Powders – Plant-based

For nutrition



| Composite Protein Powder                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | MCT Collagen Creamer                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Taiwan, China                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Canada                                                                                   |
| Leezen Company                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Renewell Nutrition                                                                       |
| Leezen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Sproos                                                                                   |
| Soybean (non-GMO), oat, brown rice, red algae extract (calcium carbonate), isolated soy protein (non-GMO), magnesium oxide, zinc gluconate, vitamin C (ascorbic acid), ferrous pyrophosphate, vitamin E (dl-alpha-tocopherol, maltodextrin, starch sodium octenyl succinate, silica), niacinamide, taurine, sodium selenium (calcium carbonate, sodium selenium), <b>vitamin A acetate</b> (maltodextrin, corn starch, <b>gum arabic</b> , vitamin A acetate, dl-alpha-tocopherol), calcium pantothenate, cholecalciferol (vitamin D3) (starch sodium octenyl succinate, sucrose, sodium ascorbate, medium chain triglycerides, silica, dl-alpha-tocopherol, vitamin D3), manganese gluconate, chromium (III) chloride (calcium carbonate, chromium (III) chloride), copper gluconate, riboflavin (vitamin B2), vitamin B6, vitamin B12 (maltodextrin, sodium citrate, citric acid, vitamin B12), vitamin K1 (gum arabic, vitamin K1, sucrose), thiamine hydrochloride (vitamin B1), folic acid, biotin | Hydrolyzed marine collagen, medium-chain triglycerides (MTC) powder, <b>acacia fibre</b> |

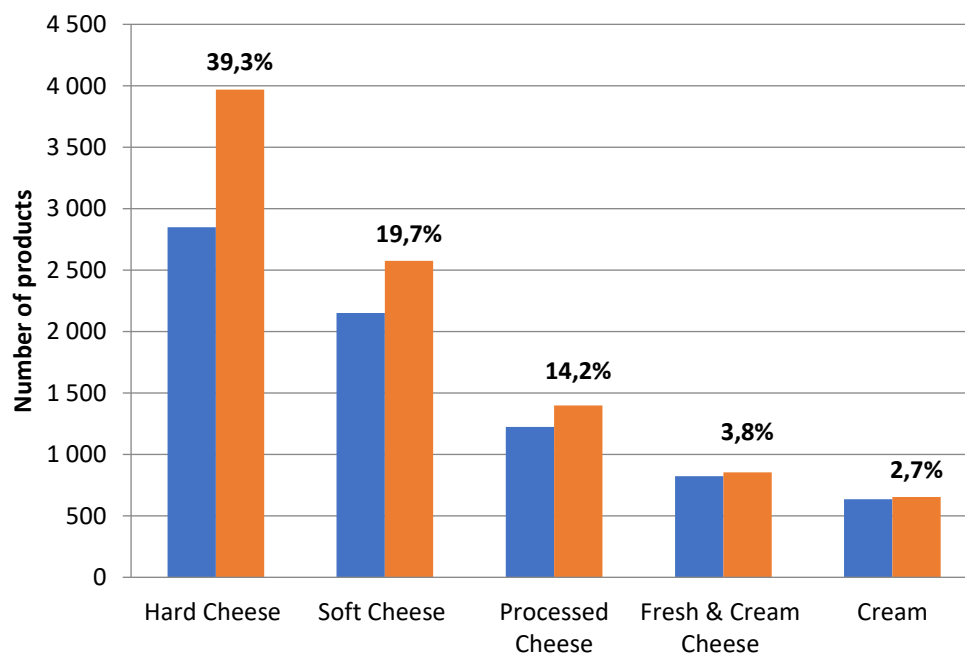




8

Creams & cheeses

## WORLDWIDE CREAM & CHEESE MARKET (dairy & plant-based)



Growing market

■ Oct 2015 - Sep 2016

■ Oct 2019 - Sep 2020

### ■ Growing claims:

Low/No  
Allergen

Gluten  
Free

Low/No  
Lactose

Vegetarian  
/ Vegan

Organic

GMO Free



## ACACIA GUM REQUIRED FUNCTIONALITIES

### > CREAMS:

- Emulsifier and stabilizer to obtain a stable emulsion. Also used for whipped creams to stabilize air bubbles into the product.
- Thickener (often in combination with other hydrocolloids)
- Water retention

### > CHEESES:

- Emulsifier, stabilizer and thickener
- Water retention and binding agent (especially for plant-based cheese)
- Flavour, colour and nutrient emulsification/encapsulation
- Fiber enrichment (for plant-based products)

## BIBLIOGRAPHY

This scientific article studied the **Acacia gum impact** when added to a **goat milk mozzarella cheese reduced in fat**.

**Table 1.** Functional properties of goat milk mozzarella cheese containing gum arabic.

| Gum arabic level (%) | Meltability (mm)          | Free oil (%)              | Stretchability (cm)       |
|----------------------|---------------------------|---------------------------|---------------------------|
| 0 (Control)          | 15.67 ± 1.27 <sup>a</sup> | 5.92 ± 0.74 <sup>a</sup>  | 43.83 ± 0.75 <sup>c</sup> |
| 2                    | 16.43 ± 1.40 <sup>a</sup> | 5.08 ± 0.86 <sup>ab</sup> | 45.50 ± 1.38 <sup>b</sup> |
| 3                    | 16.60 ± 1.13 <sup>a</sup> | 4.25 ± 0.61 <sup>bc</sup> | 47.33 ± 1.21 <sup>a</sup> |
| 4                    | 16.73 ± 1.05 <sup>a</sup> | 3.75 ± 0.52 <sup>c</sup>  | 41.33 ± 1.21 <sup>d</sup> |

Means are presented as mean ± standard deviation. Means in the same column with different letters are significantly different ( $P < 0.05$ ).

- > **Meltability:** Reduction of fat content in cheeses reduces the meltability value.  
Acacia gum => no significant effect, but sample with **4% acacia gum** has the highest meltability value.
- > **Free oil:** Consider as a defect (on pizza, pie, etc.)  
Significant impact of **acacia gum (3 & 4%)** => decrease of the defect thanks to **emulsifying properties**.
- > **Stretchability:** Ease and extent to which melted cheese can form string.  
Significant increase with **acacia gum up to 3%** => fat mimetic by binding extra water.

*Preparation and analysis of goat milk mozzarella cheese containing soluble fiber from Acacia senegal var. kerensis. 2018. Samuel N. Kiiru1,2\*, Symon M. Mahungu1 and Mary Omwamba1*

## BIBLIOGRAPHY

This scientific article also evaluated **sensory attributes** thanks to **50 sensory panelists** who used a **5-point hedonic scale**.

**Table 3.** Sensory properties of goat milk mozzarella cheese containing gum arabic.

| Gum arabic level (%) | Sensory attributes       |                          |                           |                          |
|----------------------|--------------------------|--------------------------|---------------------------|--------------------------|
|                      | Texture                  | Flavor                   | Color                     | Overall Acceptability    |
| 0                    | 3.44 ± 1.30 <sup>b</sup> | 3.38 ± 1.29 <sup>b</sup> | 3.82 ± 0.96 <sup>ab</sup> | 3.30 ± 1.40 <sup>b</sup> |
| 2                    | 3.94 ± 0.84 <sup>a</sup> | 4.30 ± 0.91 <sup>a</sup> | 4.02 ± 0.82 <sup>ab</sup> | 4.08 ± 0.90 <sup>a</sup> |
| 3                    | 4.00 ± 1.09 <sup>a</sup> | 4.16 ± 0.96 <sup>a</sup> | 4.16 ± 0.68 <sup>a</sup>  | 4.06 ± 0.82 <sup>a</sup> |
| 4                    | 3.40 ± 1.14 <sup>b</sup> | 3.70 ± 1.20 <sup>b</sup> | 3.70 ± 1.04 <sup>b</sup>  | 3.80 ± 1.14 <sup>a</sup> |

Means presented as mean ± SD (standard deviation). Means on the same column with the same letter are not significantly different ( $P \geq 0.05$ ).

> **Texture:** 2 and 3% of acacia gum addition improves the texture rating.

> **Flavor:** Increases when 2 and 3% of acacia gum was added.

Researchers have reported the ability of gum arabic to encapsulate flavors which may explain the retention of flavors in this cheese, even with fat reduction.

> **Color:** not impacted by acacia gum addition.

> **Overall Acceptability:** Acacia gum addition improves the overall acceptability. Highest rates were observed with 2 and 3% acacia gum addition.

*Preparation and analysis of goat milk mozzarella cheese containing soluble fiber from Acacia senegal var. kerensis.* 2018. Samuel N. Kiiru<sup>1,2\*</sup>, Symon M. Mahungu<sup>1</sup> and Mary Omwamba<sup>1</sup>

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## PRODUCT EXAMPLES: Sour creams – Dairy

| Fat Free Sour Cream                                                                                                                                                                                | Fat Free Sour Cream                                                                                                                                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Canada                                                                                                                                                                                             | USA                                                                                                                                                                                                                                                                        |
| Parmalat, Canada                                                                                                                                                                                   | Kroger, USA                                                                                                                                                                                                                                                                |
| Parmalat Beatrice                                                                                                                                                                                  | Kroger                                                                                                                                                                                                                                                                     |
| Modified milk ingredients, modified corn starch, microcrystalline cellulose, <b>gum arabic</b> , gelatin, colour, sodium phosphate, cellulose gum, carrageenan, natural flavor, bacterial cultures | Cultured skim milk, cultured milk, modified corn starch, cellulose gel, propylene glycol monoester, <b>gum arabic</b> , cultured dextrose, gelatin, titanium dioxide (color), cellulose gum, natural flavor, anhydrous milkfat, cream, sodium citrate, vitamin A palmitate |



## PRODUCT EXAMPLES: Sour creams – Dairy

| Grade A Sour Mexican Cream                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| USA                                                                                                                                                                |
| Marquez Brothers, USA                                                                                                                                              |
| El Mexicano                                                                                                                                                        |
| Cultured pasteurized grade A cream,<br>cultured pasteurized grade A milk, sea salt,<br>modified corn starch, gum acacia, guar gum,<br>locust bean gum, carrageenan |





## PRODUCT EXAMPLES: Creams – Plant-based

ACACIA GUM  
declared as **emulsifier**



| Organic Hemp-Based Alternative to Single Cream                                                                                                                                                       | Liquid Rice Cream for Cooking                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Canada                                                                                                                                                                                               | France                                                                                                                                                             |
| SoJade, France                                                                                                                                                                                       | Scamark, France                                                                                                                                                    |
| SoJade                                                                                                                                                                                               | Marque Repère Bio Village                                                                                                                                          |
| Hemp drink* (91%) (water, hemp seeds* (3%)), rapeseed oil*, rice starch*, <b>emulsifier (gum arabic*)</b> , thickeners (locust bean gum*), salt, antioxidant (rosemary extract*)<br>*organic farming | Water, sunflower oil*, dehydrated rice syrup*, <b>emulsifier (gum arabic*)</b> , rice flour*, rice starch*, thickener (carob seed flour*)<br>*from organic farming |







## PRODUCT EXAMPLES: Creams – Plant-based

ACACIA GUM  
declared as **emulsifier**

ACACIA GUM  
declared as **stabilizer**



| Cooking Soya Cream                                                                                                                                                                                                            | Culinary Preparation with Almond and Shiitake                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| France                                                                                                                                                                                                                        | Belgium                                                                                                                                                                                                                                                                                                              |
| Nutrition & Nature, France                                                                                                                                                                                                    | Nutriops, Spain                                                                                                                                                                                                                                                                                                      |
| Soy                                                                                                                                                                                                                           | Eco Mil Cuisine                                                                                                                                                                                                                                                                                                      |
| <p>Soya juice* ** (87%) (water, peeled soya* (6.8%)), deodorised sunflower oil*, <b>emulsifier (arabic gum*)</b>, raw cane sugar*, thickeners (xanthan gum, carrageenans)</p> <p>* from organic farming</p> <p>**GMO-free</p> | <p>Water, mushrooms* (14%) (white mushrooms (8%) (Agaricus bisporus), shiitake* (6%) (Lentinus edodes)), almonds* (7%), onions*, sunflower oil*, coconut oil*, tapioca starch *, <b>stabilizers (arabic gum*, xanthan gum)</b>, sea salt, yeast extract*, black pepper*</p> <p>*ingredients from organic farming</p> |





## PRODUCT EXAMPLES: Creams – Plant-based



| Oat Cream Alternative                                                                                                                                                                       | Unsweetened Vegan Creamer                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Canada                                                                                                                                                                                      | USA                                                                                                                                                                                                                                         |
| Earth's Own Food, Canada                                                                                                                                                                    | Blue Northern Foods, USA                                                                                                                                                                                                                    |
| Earth's Own Culinary Edition                                                                                                                                                                | Picnik                                                                                                                                                                                                                                      |
| Oat base (filtered water, gluten-free oats), sunflower oil, <b>arabic gum</b> , tricalcium phosphate, sea salt, calcium carbonate, sunflower lecithin, gellan gum, locust bean gum, amylase | Cashew milk (water, cashews), coconut cream (coconut, water), MCT oil (medium chain triglycerides), 1.5% or less of ( <b>acacia gum</b> , potassium phosphate, calcium carbonate, sunflower lecithin, sodium citrate, tara gum, gellan gum) |





## PRODUCT EXAMPLES: Creams – Plant-based

| Almond Pumpkin Spice Creamer                                                                                                                 | Vanilla Almond & Coconut Creamer                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| USA                                                                                                                                          | USA                                                                                                                                                                                                                       |
| Green Grass Foods, USA                                                                                                                       | H-E-B, USA                                                                                                                                                                                                                |
| Nut Pods                                                                                                                                     | H-E-B Select Ingredients                                                                                                                                                                                                  |
| Purified water, coconut cream, almonds, natural flavors, <b>acacia gum</b> , dipotassium phosphate, sunflower lecithin, sea salt, gellan gum | Almond milk (water, almonds), cane sugar, coconut cream (coconut extract, water), <1% (potassium citrate, sodium bicarbonate, salt, sunflower lecithin, cellulose gum, cellulose gel, <b>gum acacia</b> , natural flavor) |



ALLAND & ROBERT



ORIGINAL

ripple

Dairy-Free. As It Should Be.

NUTRITIOUS PLANT-BASED

**HALF & HALF**

WITH DHA OMEGA-3s

8 FL OZ (236mL)

| Cooking Soya Cream                                                                                                                                                                                                                                 | Vanilla Cream Emulsified MCT Boost                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| USA                                                                                                                                                                                                                                                | Canada                                                                                                                   |
| Ripple Foods, USA                                                                                                                                                                                                                                  | Assured Natural Distribution, Canada                                                                                     |
| Ripple                                                                                                                                                                                                                                             | Alpha                                                                                                                    |
| Water, sunflower oil, Ripptein (pea protein), less than 1% of (organic cane sugar, DHA algal oil, sunflower lecithin, calcium phosphate, <b>organic gum arabic</b> , sea salt, organic guar gum, gellan gum, natural flavors, vitamin A palmitate) | Modified coconut oil (medium chain triglycerides), purified water, <b>gum arabic</b> , vanilla bean flavour, sorbic acid |





## PRODUCT EXAMPLES: Sour creams – Plant-based

| Sour Cream Alternative                                                                                                                                                                                                                             | Sour Cream                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| USA                                                                                                                                                                                                                                                | USA                                                                                                                                                                                                                                                                                                |
| Kroger, USA                                                                                                                                                                                                                                        | WayFare, USA                                                                                                                                                                                                                                                                                       |
| Simple Truth Organic Plant Based                                                                                                                                                                                                                   | WayFare                                                                                                                                                                                                                                                                                            |
| Prepared butter beans and oats (water, organic butter beans, organic oats), organic coconut oil, <b>organic gum arabic</b> , cultured dextrose, calcium citrate, sea salt, organic konjac root powder, citric acid, lactic acid, mixed tocopherols | WayFare dairy free base (water, organic butter beans, organic oats), vegetable oil blend (coconut oil, safflower oil), <b>gum arabic</b> , konjac root powder, sea salt, cultured dextrose, calcium citrate, WayFare natural flavors, citric acid (vegan), lactic acid (vegan), sunflower lecithin |





## PRODUCT EXAMPLES: Whipped cream – Plant-based



ACACIA GUM  
declared as **stabilizer**

| Pumpkin Spice Whipped Topping                                                                                                                                                                                                 | Rice Spray Cream                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| USA                                                                                                                                                                                                                           | Germany                                                                                                                                                                                                             |
| Whole Foods Market                                                                                                                                                                                                            | Tofutown                                                                                                                                                                                                            |
| 365 Everyday Value                                                                                                                                                                                                            | Soyatoo! Rice Whip                                                                                                                                                                                                  |
| Pasteurized cream, organic skim milk, organic cane sugar, <b>organic stabilizer</b> ( <b>organic acacia gum</b> , organic locust bean gum, xanthan gum), natural flavor, nitrous oxide (whipping propellant), annatto (color) | Rice drink (water, rice syrup, rice starch, rice flour), coconut fat, maltodextrin, acidity regulator (tartaric acid), <b>thickener</b> (seaweed extract, <b>gum arabic</b> ), sea salt, propellant (nitrous oxide) |

ACACIA GUM  
declared as **thickener**







## PRODUCT EXAMPLES: Whipped cream – Plant-based

ACACIA GUM  
declared as **thickener**



| Vegan Whipping Cream                                                                                                                                                                             | Sour Cream                                                                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Germany                                                                                                                                                                                          | Canada (produced in the USA)                                                                                                                                                                                                  |
| Biovegan                                                                                                                                                                                         | Tofutown North America                                                                                                                                                                                                        |
| Biovegan                                                                                                                                                                                         | Soyatoo! Rice Whip                                                                                                                                                                                                            |
| Icing sugar*, potato starch*, <b>thickener (arabic gum*)</b> , maple syrup flakes*, potatoes*, thickener (guar gum*), inulin*, rice protein*, Himalayan salt<br>*from controlled organic farming | Organic rice beverage (water, organic rice syrup, organic rice starch, organic rice flour), coconut oil, organic maltodextrin from rice, tartaric acid, carrageenan, <b>gum arabic</b> , sea salt, propellant (nitrous oxide) |



## PRODUCT EXAMPLES: Cheese – Dairy

ACACIA GUM  
declared as **stabilizer**

| Cream cheese                                                                                                                                                                                       | Classic Processed Cheese Assortment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ecuador                                                                                                                                                                                            | Russia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Parmalat                                                                                                                                                                                           | Valio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Président                                                                                                                                                                                          | Valio Viola                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Whole milk, milk cream, salt, <b>stabilizers</b> (unmodified rice starch, <b>gum arabic</b> , maltodextrin, gelatin, xanthan gum), lactic acid, potassium sorbate (E202), calcium chloride, rennet | Hard and semi-hard cheese, drinking water, butter, skimmed milk powder, ham (only for ham flavoured processed cheese) (ham, water, potato starch, salt, colour retainer (sodium nitrite), soya protein, acidity regulators (E451, E262, E331), flavouring, dextrose, sugar, antioxidant (sodium isoascorbate)), dried porcini (only for porcini flavoured processed cheese), flavourings (complex food additives) (dried onion, flavour enhancers (E621, E627, E631), flavourings, vegetable oil, sugar, milk whey, milk powder, <b>stabiliser (gum arabic)</b> , anticaking agent (silicon dioxide)), dry milk whey, emulsifiers (pyrophosphates, polyphosphates), acidity regulator (citric acid), stabiliser (carrageenan) |



## PRODUCT EXAMPLES: Cheeses – Dairy

ACACIA GUM  
declared as **thickener**

| Creamy Cheese with Olives                                                                                                                                                                                                              | Hatch Green Chile Queso                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Brazil                                                                                                                                                                                                                                 | USA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Polenghi                                                                                                                                                                                                                               | H-E-B Central Market                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Polenghi Alouette                                                                                                                                                                                                                      | H-E-B Central Market                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Pasteurised milk, milk cream, black olives paste, milk powder, sodium chloride (salt), virgin olive oil, lactic ferment, <b>thickeners</b> (arabic gum, carrageenan), natural colorant (cochineal carmine), preservative (sorbic acid) | water, hatch green chiles and new mexico chiles, cheese blend (corn starch, maltodextrin, whey, dextrose, cheddar cheese (pasteurized milk, cheese culture, salt, enzymes), yeast, xanthan gum, soy lecithin, <b>gum arabic</b> , spice extractives), canola oil, tomatoes (tomatoes, tomato puree, salt, citric acid), cheddar flavor (cheddar cheese (pasteurized milk, cultures, salt, enzymes), cream mozzarella cheese (part skim milk, cultures, salt, enzyme), yeast), natural flavor (butter culture, fermented dairy products, emulsifier (enzyme modified egg yolks, salt)) |



## PRODUCT EXAMPLES: Cheeses – Dairy

ACACIA GUM  
For nutrient **encapsulation**

| Calcium Enriched Cheese                                                                                                                                                                                                                                                                                         | Plain Cheese for Kids                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| South Korea                                                                                                                                                                                                                                                                                                     | South Korea                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Seoul Milk                                                                                                                                                                                                                                                                                                      | Namyang Dairy Products                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Seoul Milk Cheese                                                                                                                                                                                                                                                                                               | Namyang de Vinch E5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Natural cheese (75%) (raw milk, salt, dried lactobacillus culture medium, rennet), purified water, unsalted butter, acidity regulator, milk calcium (2.3%), chicory fibre, <b>mixed vitamin D3 formulation</b> (0.006%) ( <b>gum arabic</b> , sucrose, starch, MCT oil, silicon dioxide, vitamin D3, vitamin E) | Natural cheese (66.7%) (cheddar cheese (79.46%), cream cheese (16.49%), vintage cheddar cheese (4.05%) (milk), milk clotting enzyme, refined salt, locust bean gum), purified water, processed butter, powdered calcium, acidity regulator, liquid fructose, xylitol, omega-360 (DHA, EPA), refined salt, vitamin Premix ND M/03 (maltodextrin, vitamin C, vitamin E, vitamin B3, vitamin B3, vitamin B5, vitamin A, vitamin D3, vitamin B12, vitamin B6, vitamin B1, vitamin B2, folic acid, biotin), CPP (0.04%) (casein phosphopeptide), milk ceramide (0.0067%) (milk), <b>vitamin A powder</b> (vitamin A acetate, DL-alpha tocopherol, <b>acacia gum</b> , sucrose, starch, acidity regulator) |





## PRODUCT EXAMPLES: Cheeses – Plant-based

With  
Acacia fiber

| Original Grated Vegan Cheese                                                                                                                                                                                                                                                                                                                               | Classic Grated Organic Vegan Speciality                                                                                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Norway                                                                                                                                                                                                                                                                                                                                                     | France                                                                                                                                                                                                                                                                                                            |
| Synnøve Finden                                                                                                                                                                                                                                                                                                                                             | All in Foods                                                                                                                                                                                                                                                                                                      |
| Synnøve Go' Vegan                                                                                                                                                                                                                                                                                                                                          | Bio Veg                                                                                                                                                                                                                                                                                                           |
| Water, modified starch (modified potato starch, modified corn starch, modified rice starch), coconut oil (13%), vegetable protein (rice protein), salt, <b>vegetable fibres (acacia fibre, chicory fibre)</b> , calcium carbonate, vegan flavour, stabiliser (tara gum), preservative (sorbic acid), colours (beta carotene, paprika extract), vitamin B12 | Water, coconut oil*, starch* (corn starch*, rice starch*), Caesalpinia seed extract*, salt, <b>acacia fibre*</b> , natural vegan flavours*, concentrates* (carrot concentrate*, apple concentrate*, radish concentrate*, blackcurrant concentrate*), acidifier (lactic acid)<br>*ingredients from organic farming |





## PRODUCT EXAMPLES: Cheeses – Plant-based

With  
Acacia fiber

| Cheddar Style Grated Vegan Cheese                                                                                                                                                                                                                                                                            | Imitation Cream Cheese with Garlic, Herbs, Black Pepper and Sunflower Oil                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| France                                                                                                                                                                                                                                                                                                       | South Africa (produced in France)                                                                                                                                                                                                                                                                             |
| La vie claire                                                                                                                                                                                                                                                                                                | Shoprite Checkers                                                                                                                                                                                                                                                                                             |
| La vie claire                                                                                                                                                                                                                                                                                                | Nature & Moi Plant Based                                                                                                                                                                                                                                                                                      |
| Water, coconut oil*, starches* (corn starch*, rice starch*), Caesalpinia seeds extract*, salt, <b>acacia fibres*</b> , vegan natural flavourings*, concentrate* (carrot concentrate*, apple concentrate*, radish concentrate*, blackcurrant concentrate*), acidifier (lactic acid)<br>* from organic farming | Water, vegetable oil (sunflower seed oil), modified starch, aromatic herbs (1.3%), garlic (1%), sugar, black pepper, stabiliser, xanthan gum, <b>vegetable fiber (acacia, caesalpinia, chicory)</b> , vinegar, salt, flavouring tara (caesalpinia seeds), calcium carbonate, acids (citric acid, sorbic acid) |







## PRODUCT EXAMPLES: Cheeses – Plant-based

ACACIA GUM  
declared as thickener

| Sliced Processed Cheese Alternative with Basil                                                                                                                                 | Jack Style Wedge                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Japan                                                                                                                                                                          | Canada                                                                                                                                                                                                                                                                                                                                                  |
| Meiji                                                                                                                                                                          | Daiya Foods                                                                                                                                                                                                                                                                                                                                             |
| Cheese Kugel Snack                                                                                                                                                             | Daiya                                                                                                                                                                                                                                                                                                                                                   |
| Vegetable oil, cheese powder, corn, dextrin, whole milk powder, sugar, fermented milk powder, salt, glazes, <b>thickener (gum arabic)</b> , cellulose, emulsifier, flavourings | Filtered water, tapioca flour, palm fruit oil, expeller pressed non-GMO canola and/or safflower oil, pea protein, coconut oil, salt, inactive yeast, vegetable glycerin, xanthan gum, vegan natural flavors, <b>gum arabic</b> , lactic acid (vegan, for flavor), titanium dioxide (a naturally occurring mineral), natural smoke flavour, vegan enzyme |





## PRODUCT EXAMPLES: Cheeses – Plant-based

ACACIA GUM  
declared as **thickener**

| Organic Vegan Mozzarella Cheese                                                                                                                      | Bianco Cheese                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Spain                                                                                                                                                | Netherlands                                                                                                                                                        |
| Nutrition & Santé                                                                                                                                    | Udea                                                                                                                                                               |
| Natusoy                                                                                                                                              | Veggi Filata                                                                                                                                                       |
| Water, coconut fat* (17%), potato starch*, rice flour*, sea salt, <b>thickeners</b> (gum arabic, xanthan gum), natural flavour<br>*organic certified | Water, coconut fat*, potato starch*, rice flour*, salt, <b>thickener</b> (arabic gum, xanthan), natural flavour (vegan), turmeric extract*<br>*from organic source |





## PRODUCT EXAMPLES: Cheeses – Plant-based

ACACIA GUM  
declared as **thickener**



| Sliced Processed Cheese Alternative with Basil                                                                                                                                                                                                                                                                                                       | Classic Sprouted Brown Rice Mozzarella                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Germany (produced in Italy)                                                                                                                                                                                                                                                                                                                          | Austria (produced in Italy)                                                                                                                                                                                                                                                           |
| Frescolat                                                                                                                                                                                                                                                                                                                                            | Frescolat                                                                                                                                                                                                                                                                             |
| Mozza Risella                                                                                                                                                                                                                                                                                                                                        | Mozza Risella                                                                                                                                                                                                                                                                         |
| Bio SuRice preparation* (46%) (water, sprouted wholegrain rice* (20.8%), cider vinegar*, salt), water, cold-pressed coconut oil*, lemon juice*, basil* (0.19%), <b>thickener</b> (agar agar, <b>gum arabic</b> , xanthan gum, carob bean gum), plant based lactic acid, turmeric* (0.01%), natural flavour<br>* ingredients from organic agriculture | Bio Surice* preparation (46%) (water, sprouted brown rice* (20.8%), salt, apple vinegar*), water, cold pressed coconut oil*, sunflower oil* (oregano*), lemon infusion*, <b>thickeners</b> (agar-agar, <b>gum arabic</b> , xanthan gum, locust bean gum)<br>*from organic cultivation |



# Conclusion

ALLAND & ROBERT

## AN INGREDIENT IN LINE WITH TODAY'S TRENDS



More fiber,  
less sugar



Clean & clear  
label



Ethic food



Healthy & organic  
food



Vegetarian/  
vegan diets



# Conclusion

ALLAND & ROBERT

## ALLAND & ROBERT : A GLOBAL EXPERT OF NATURAL PLANT EXUDATES



R&D STRONG  
EXPERTISE



INTERNATIONAL  
CERTIFICATIONS



SUPPLIER NETWORK  
FOR SUPPLY SAFETY



CUSTOMIZED  
CUSTOMER SERVICE



CORPORATE  
RESPONSIBILITY



INTEGRATED SUPPLY  
CHAIN

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