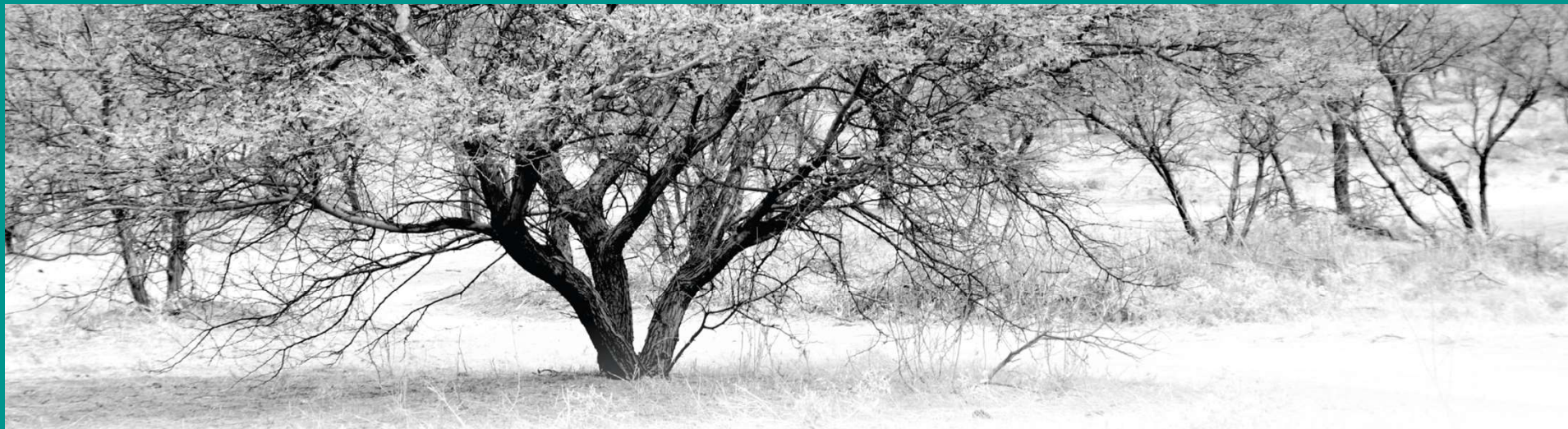




ALLAND  *ROBERT*
— *Since 1884* —

**ACACIA GUM BENEFITS
FOR BAKERY PRODUCTS**

Agenda

ALLAND & ROBERT

- Who is Alland & Robert?
- Acacia Gum in Breads
- Acacia Gum in Cereal Bars
- Conclusion
- What is Acacia Gum?
- Acacia Gum to stick Grains
- Acacia Gum in Biscuits

Who is Alland & Robert?

ALLAND & ROBERT

KEY FIGURES

1884

foundation
of the company

136

years
of experience
in natural gums

6TH

generation
family company

70

countries
Alland & Robert
sells to

45

Millions €
revenue 2019

100%

dedicated from
the very start
to natural gums

Who is Alland & Robert?

ALLAND & ROBERT

KEY FIGURES

2 FACTORIES

3 SPRAYDRYING
TOWERS

100 EMPLOYEES
IN 2019

17.000t
CAPACITY OF ACACIA
GUM 2019

350t
PRODUCTION
OF KARAYA GUM

95% EXPORT

MANUFACTURED in France!



Who is Alland & Robert?

ALLAND & ROBERT

3 LOCATIONS



Who is Alland & Robert?

ALLAND & ROBERT

SINCE MARCH 2018: NEW R&D AND ADMINISTRATIVE OFFICES

Application laboratory



Microbiological laboratories



Physicochemical laboratory

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What is Acacia Gum?

ALLAND & ROBERT

A NATURAL RESOURCE...

Exudate
of African wild
Acacia trees



World
production :

60 000 MT
/year

What is Acacia Gum?

ALLAND & ROBERT

...SOURCED SUSTAINABLY DIRECTLY FROM NATURE...



HAND MADE
HARVEST IN THE
GUM BELT



PROVIDE REVENUES
TO LOCAL
POPULATIONS



PREVENT
DESERTIFICATION



TREE FRIENDLY
HARVEST



USED BY HUMANS AS
A FOOD RESOURCE
FOR MILLENNIA



LOW CARBON PROCESS
IN THE WHOLE
PRODUCTION CHAIN

What is Acacia Gum?

ALLAND & ROBERT

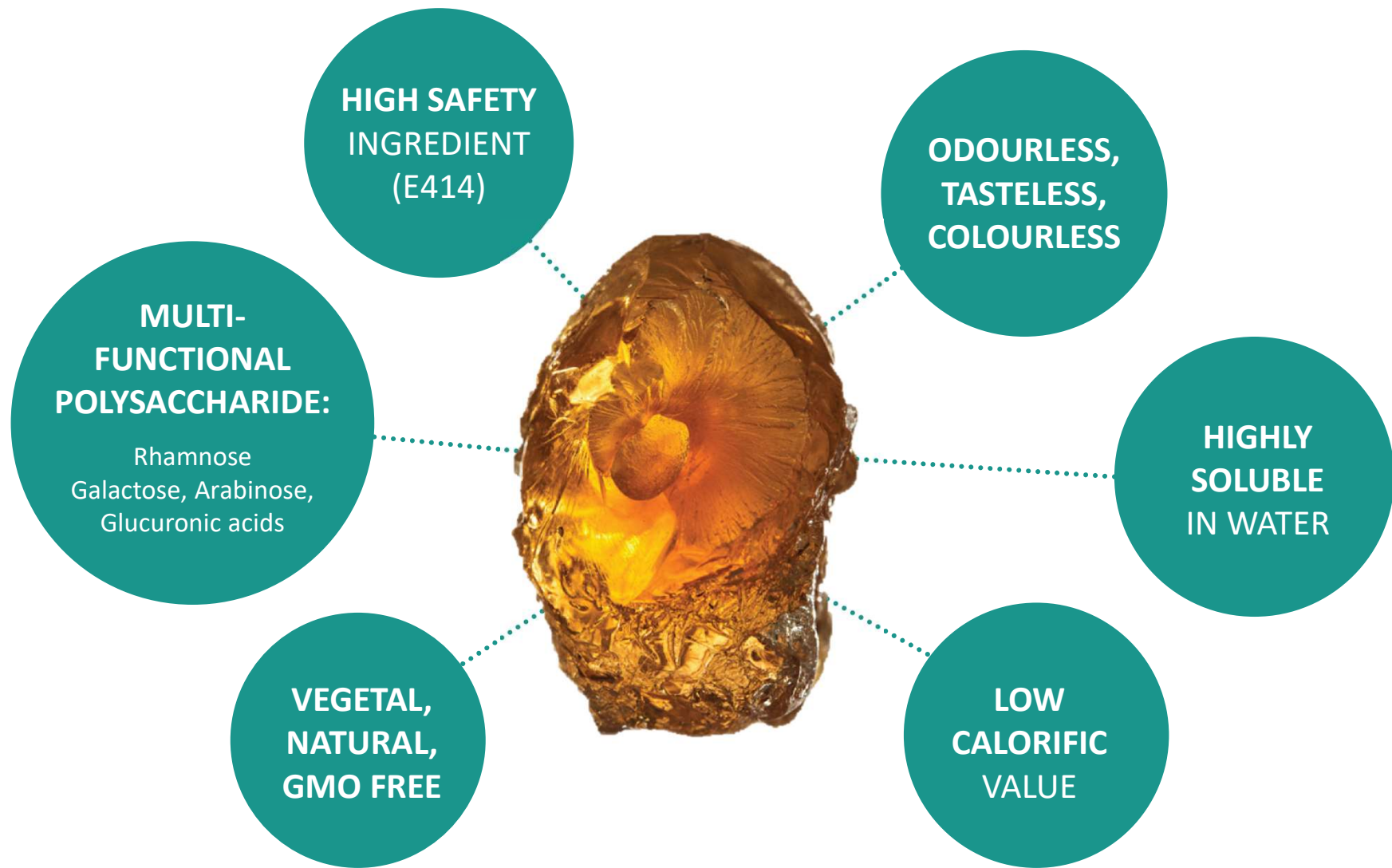
...WITH STRONG RELATIONSHIPS WITH FARMERS TO ENSURE THE
HIGHEST RAW MATERIAL QUALITY

NO
CHEMICALS
PESTICIDES
GMOs
PRESERVATIVE

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

What is Acacia Gum?

ALLAND & ROBERT



What is Acacia Gum?

ALLAND & ROBERT

THERE ARE 2 GRADES OF ACACIA GUM

ACACIA SENEGAL

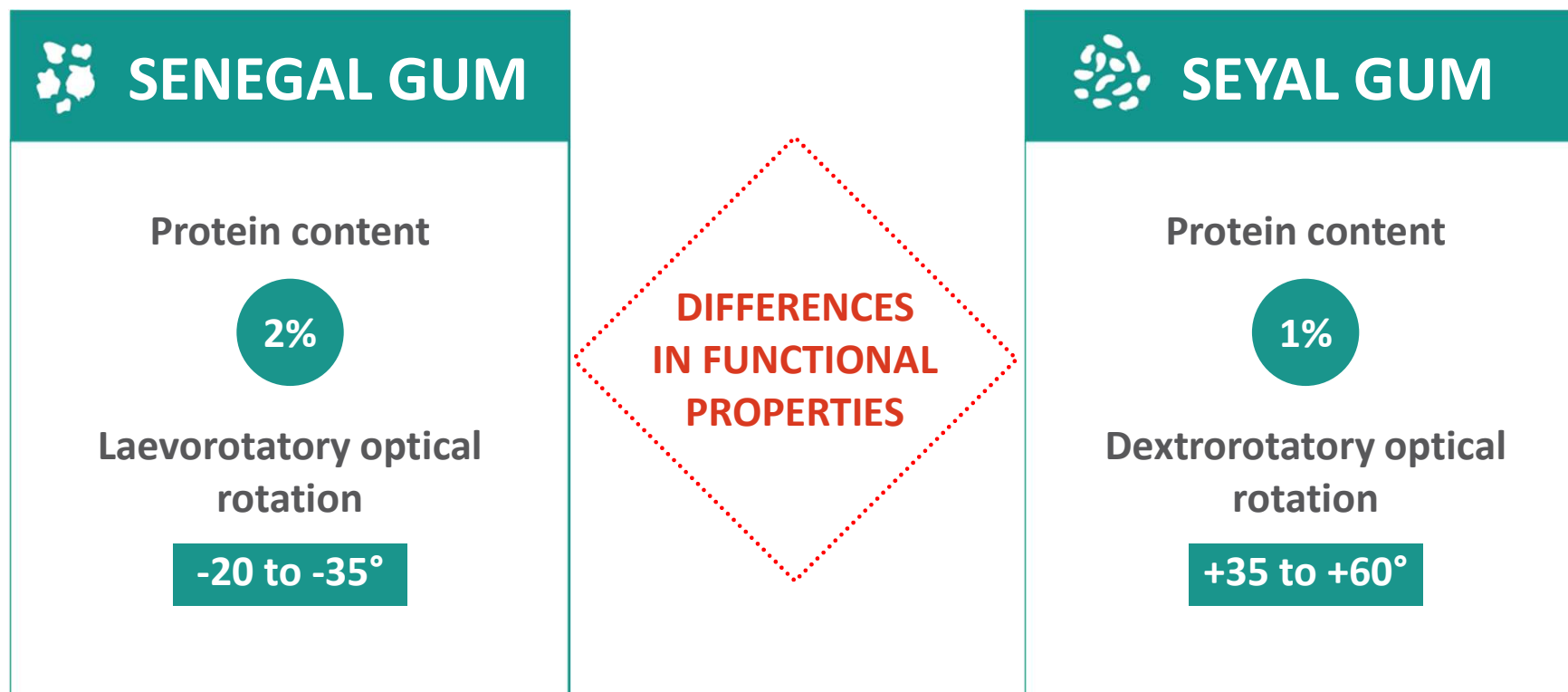


ACACIA SEYAL

What is Acacia Gum?

ALLAND & ROBERT

THERE ARE 2 GRADES OF ACACIA GUM



What is Acacia Gum?

ALLAND & ROBERT

A MULTIFUNCTIONAL INGREDIENT



Emulsion

Emulsifying properties and stabilization



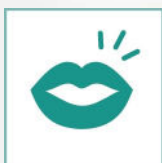
Encapsulation

Flavor retention, protection and use as a carrier



Coating

Film forming abilities, perfect for gumming operations



Mouthfeel Improvement

Softening action and longer taste



Texturing

Better textures and hardness



Extrusion

Processing aid, gustatory sensation improver



Natural glue

Safe and organic food adhesive



Fiber enrichment

90% fiber content, highly soluble

➔ Used in a lot of different day-to-day products

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



Acacia Gum in Breads

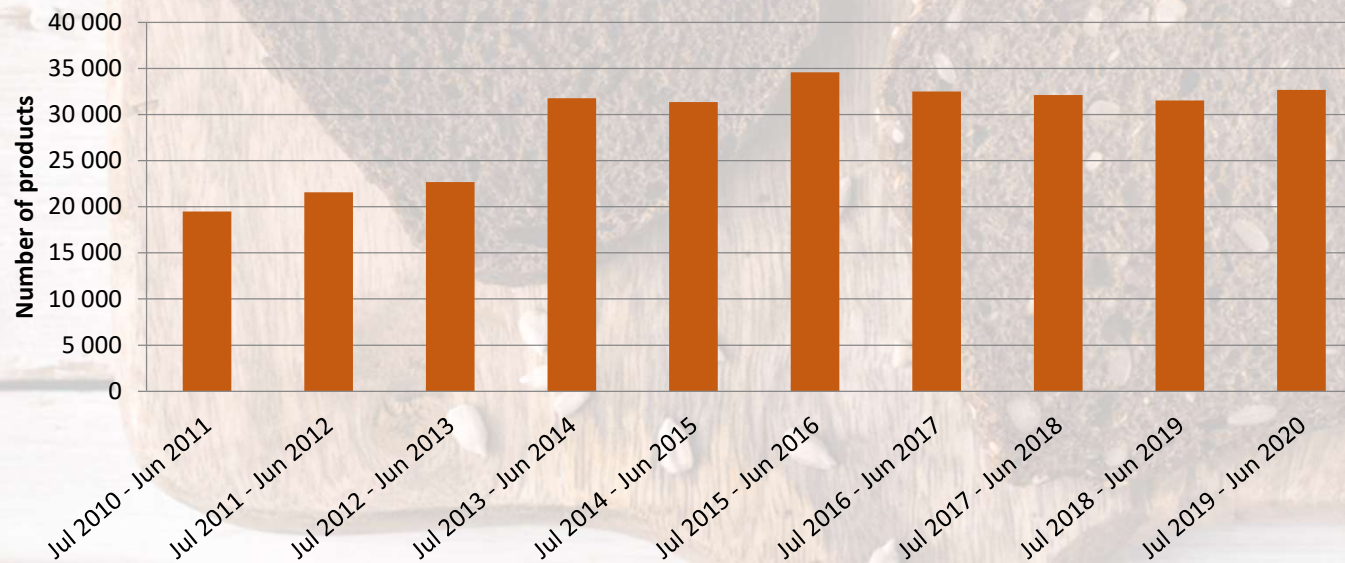
Acacia Gum in Breads

ALLAND & ROBERT

WORLDWIDE BAKERY MARKET (breads, biscuits, crackers, etc.)

More than 3,400 bakery products with Acacia Gum or Acacia Fiber

Worldwide Bakery Market: new products launched since July 2010



■ More than 30,000 new bakery products launched every year

Acacia Gum in Breads

ALLAND & ROBERT

PRODUCT EXAMPLES

Coop Änglamark Baguette	Au Pain Doré 12 Grains Artisan Bread
Norway	Canada
Coop, Norway	Bridor
Coop Änglamark	Au pain dorée
Wheat flour, water, durum wheat flour, water, salt, yeast, wheat gluten, potato starch, sunflower oil, emulsifier (E414) , rice starch, cocoa powder	Enriched unbleached flour, water, sugar, cracked sunflower, yeast, cracked caramelised wheat, cracked corn, roasted cracked rye, oat flakes, barley flakes, triticale flakes, brown flax seeds, millet, cracked buckwheat, teff, salt, canola oil, cracked rice, mono- and diglycerides of fatty acids, wheat gluten, gum acacia , beta-carotene, ascorbic acid, amylase, alpha-amylase, hemicellulase, xylanase, cellulase



Acacia Gum in Breads

ALLAND & ROBERT

PRODUCT EXAMPLES

MM Turkish Bread	Carrefour Gluten-Free Packed Bread with Seeds
Vietnam	Argentina
Mega Market	Carrefour
MM	Carrefour
Wheat Flour, Butter, glaze, Waters, Sorbitan Monostearate, Gum Arabic , Salt, Amylases, Vitamin C	Water, starch mix (modified corn starch, modified cassava starch), stabilizer (INS 464, INS 471), coloring (INS 150d, ANAH (INS 551)), corn flour, sucrose, sunflower oil, sunflower seed, flax seed, yeast, chia seeds, salt, maltodextrin, stabilizer (INS 414) , acidifier (INS 330), preservative (INS 282)



Acacia Gum in Breads

ALLAND & ROBERT

PRODUCT EXAMPLES

A-my Vegetarian Butter Flavoured French Bread	A-my Sliced Butter Garlic French Bread
Thailand	Thailand
E'le'phant Bakery	Big Fan
MM	A-my
Wheat flour (60%), vegetarian margarine (20%), sugar (15%), iodised salt (3%), yeast (2%), emulsifier (INS 471, INS 322, INS 491), antioxidant (INS 330, INS 321), stabiliser (INS 414) , chelating agent (INS 300), preservative (INS 202), natural colour (INS 160a(ii)), flour treatment agent (INS 472e)	Wheat flour (70%), butter (12%), margarine (12%), fresh garlic (5%), iodized salt (1%), yeast (0.3%), parsley (0.17%), flour treatment agent (INS 1100), chelating agent (INS 300, INS 331(iii)), emulsifier (INS 472e, INS 471, INS 322), stabiliser (INS 414) , antioxidant (INS 321, INS 319), natural colour (INS 160a(ii)), preservative (INS 385, INS 202), artificial flavour



Acacia Gum in Breads

ALLAND & ROBERT

PRODUCT EXAMPLES

Mi Rancho Organic Ancient Grain Tortillas	Kontos Greek Lifestyle Flatbread
USA	Panama
Berber Food Manufacturing, USA	Kontos Foods, USA
Mi Rancho	Kontos
Water, organic whole wheat flour, organic vital wheat gluten, organic palm oil, organic pea fiber, organic five-grain blend (organic flax, organic millet, organic brown rice, organic quinoa, organic amaranth), less than 2% (organic cane sugar, organic maltodextrin, organic white distilled vinegar, baking powder (sodium acid pyrophosphate, sodium bicarbonate, non-GMO corn starch, monocalcium phosphate), sea salt, cultured organic wheat starch, citric acid, yeast, natural flavor, acacia gum , organic guar gum, calcium sulfate, enzymes)	Water, unbleached unbromated enriched flour (niacin (B-complex vitamin), thiamine (vitamin B1), reduced iron, riboflavin (B2 vitamin), folic acid), wheat gluten, oat fiber, isolated soy protein, corn starch, soybean oil, soy flour, salt, sesame flour, yeast, 2% or less of each of the following ingredients (acacia gum , calcium propionate (a preservative), calcium sulfate, dextrose, fumaric acid, sorbic acid (preservative), sucralose, vegetable L-cysteine, vegetable mono and diglycerides, whole wheat flour)



Acacia Gum in Breads

ALLAND & ROBERT

PRODUCT EXAMPLES

Stonefire Original Naan Dippers	CiaoCarb High Protein Piadina Flat Bread
Australia	Italy
Stonefire Bakery, USA	Fooditalia, Italy
Stonefire	CiaoCarb ProtoPiadina
Enriched wheat flour (wheat flour, ascorbic acid, thiamine mononitrate, enzyme, folic acid), water, buttermilk (skim milk, dry buttermilk, culture), soybean oil, sugar, wheat starch, cultured wheat flour, iodised salt, ghee (clarified butter), acacia gum (414) , leavening (500, 339), inactive yeast, yeast, emulsifier (471), enzymes	Wheat gluten, isolated soy protein, rice protein, oat protein, wheat fibre (gluten), acacia fibre , extra virgin olive oil, raising agents (sodium bicarbonate), salt, emulsifier (E471, soy lecithin), preservative (potassium sorbate)



Acacia Gum in Breads

ALLAND & ROBERT

PRODUCT EXAMPLES

Anita Raw Flour Tortillas	Blue Shirt Bakery Low Carb Wraps
Mexico	South Africa
Ana María Garay de León, Mexico	Blue Shirt Bakery, South Africa
Anita	Blue Shirt Bakery
Prepared flour (enriched bleached flour (gluten), wheat flour (gluten), niacin, iron, zinc, thiamine, riboflavin, folic acid), water, animal fat (beef fat), salt, 2% or less of (amylase enzyme, ascorbic acid, benzoyl peroxide, corn starch, calcium carbonate, calcium propionate, carboxymethyl cellulose, gum arabic , guar gum, whey, sorbic acid, fumaric acid, L-cysteine, tricalcium phosphate)	Water, wheat flour, gluten, oat fibre, palm oil, soy flour, glycerine (E422), salt, sodium acid pyrophosphate (E450i), acidity regulator (E297), sodium bicarbonate (E500ii), guar gum (E412), emulsifier (E471), calcium propionate (E282), sodium diacetate (E262), gum arabic (E414) , potassium sorbate (E202), emulsifier (E472e), flour improver (E300), enzymes, L-cysteine (E920)



Acacia Gum in Breads

ALLAND & ROBERT

PRODUCT EXAMPLES

Wonder White Toast	BBQ Flavoured Maxi Burger Buns
Australia	Spain
Goodman Fielder, Australia	Bimbo, Spain
Wonder	Bimbo
Unbleached wheat flour, water, WonderFibre blend (5.4%) (wheat fibre, hi-maize), yeast, canola oil, vinegar, iodised salt, wheat gluten, acacia gum , cultured wheat flour, soy flour, vegetable emulsifiers (481), vitamins (niacin, vitamin E, thiamin, vitamin B6, folic acid), minerals (iron, zinc)	Wheat flour, water, yeast, liquid egg, sugar, vegetable oil (sunflower oil), prepared barbecue flavour seasoning (flavour, spices, potato maltodextrin, sugar, smoke flavour, vegetable oil (sunflower oil), salt, thickener (E414) , acidity regulators (E330, E341), rice fibre, triglycerides of dietary fatty acids, antioxidant (E392)), salt, wheat gluten, bean meal, preservatives (E282, E200, E202), emulsifiers (E471, E481), wine vinegar, stabiliser (E466), flour treatment agent (E920)



Acacia Gum in Breads

ALLAND & ROBERT

PRODUCT EXAMPLES

Supán Sweet Bread	Morato Pane & Idee Pan Kamut (Kamut Sliced Bread)
Ecuador	Italy
Tiosa, Ecuador	Morato Pane, Italy
Supán	Morato Pane & Idee
Fortified wheat flour, water, sugar, yeast, vegetable fat, salt, dough conditioner (alpha amylase, lipase, glucosidase, xylanase, ascorbic acid, sodium stearoyl lactylate, calcium carbonate, wheat flour), preservative (calcium propionate), acidity regulator (monocalcium phosphate), emulsifier (sodium stearoyl-2-lactylate), nature identical coconut flavor, gum arabic , acidulant (citric acid), enzyme (enzyme, wheat flour, starch, calcium carbonate), natural color (carotene)	Khorasan Kamut wheat flour*, water, rice oil, salt, extra virgin olive oil* (1.2%), yeast, rice flour*, malt flour* (wheat), acacia fibre* , type "0" wheat flour*



Acacia Gum in Breads

ALLAND & ROBERT

STUDY ON ACACIA GUM IMPACT IN BREADS

Study by the LEMPA

(Laboratoire d'Essais des Matériels et Produits Alimentaires/ Laboratory for the testing of food products) to characterize the effects of adding acacia gum to the bread properties.

> All tests were carried out according to panification standard NF V03-716 in accordance with AFNOR standards, with professional equipments.

> For more information on the parameters of the study, please contact info@allandetrobert.fr

■ 2 Alland & Robert Acacia Gum products:

- **SEYAL Grade** (Acacia Gum 381)
- **SENEGAL Grade** (Acacia Gum 396) compared to a control.

■ 3 dosages of each product were

1%

3%

6%

■ 2 types of breads (LEMPA's reference recipes):



White sandwich bread,
aka American bread



Gluten free bread

SENSORY EVALUATION

- Panel of 60 people, with a questionnaire per product and **notes to be given on a scale from 1 to 9.**



1

Highly unpleasant

5

Neutral opinion

9

Exceptionally good

Acacia Gum in Breads

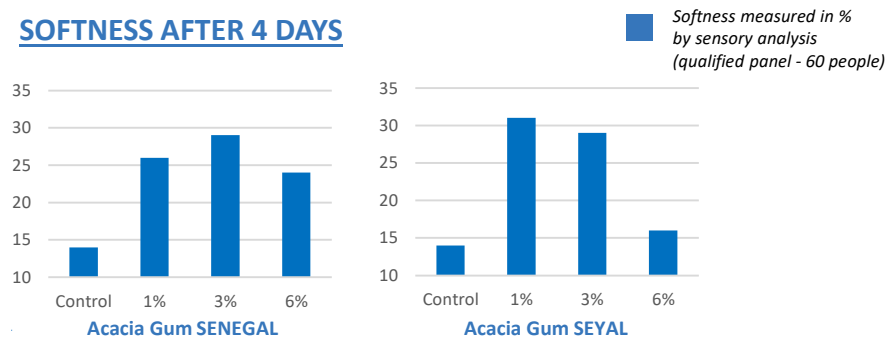
ALLAND & ROBERT

ACACIA GUM IMPACT ON TEXTURE

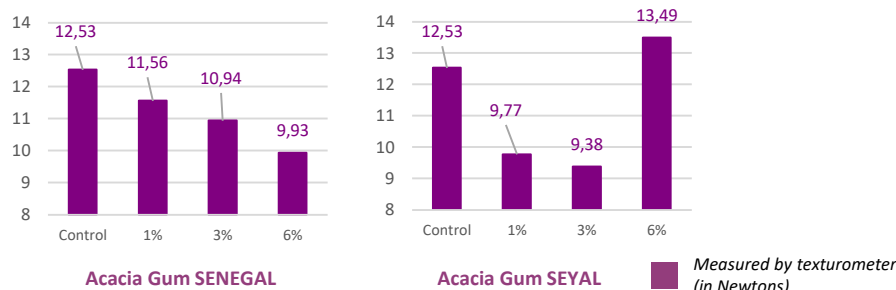


WHITE SANDWICH BREAD

SOFTNESS AFTER 4 DAYS



HARDNESS AFTER 4 DAYS



Acacia Gum **Seyal** and Acacia Gum **Senegal** addition in white sandwich bread offers a **higher softness after 4 days**.

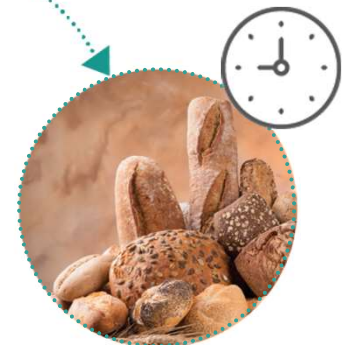
Hardness is decreasing proportionally to the Acacia Gum addition, meaning **the bread is softer**.

In the case of Acacia Gum **Seyal**, the **texture improvement** is favorable at a concentration **below 6%**.

ALLAND & ROBERT RECOMMENDS:

- > INCORPORATE **1% to 3%** of Acacia Gum **Seyal** into the preparation:
- **to keep breads soft longer** (gain up to 25% softness after 4 days)
- **to improve their texture** and so **to increase their shelf lives**.

1%
to 3%



Acacia Gum in Breads

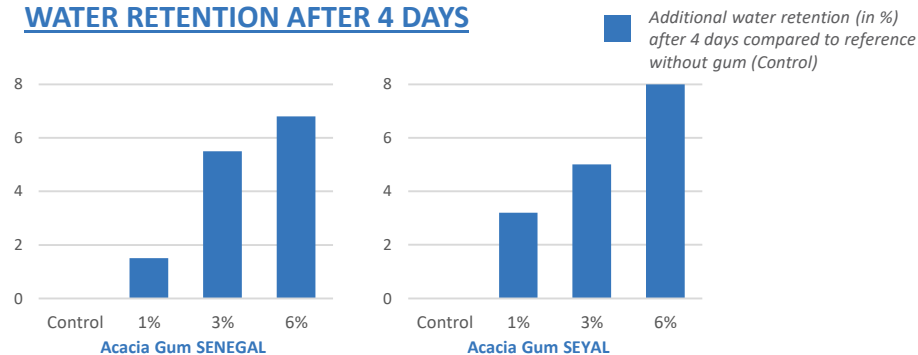
ALLAND & ROBERT

ACACIA GUM IMPACT ON WATER RETENTION & WEIGHT GAIN

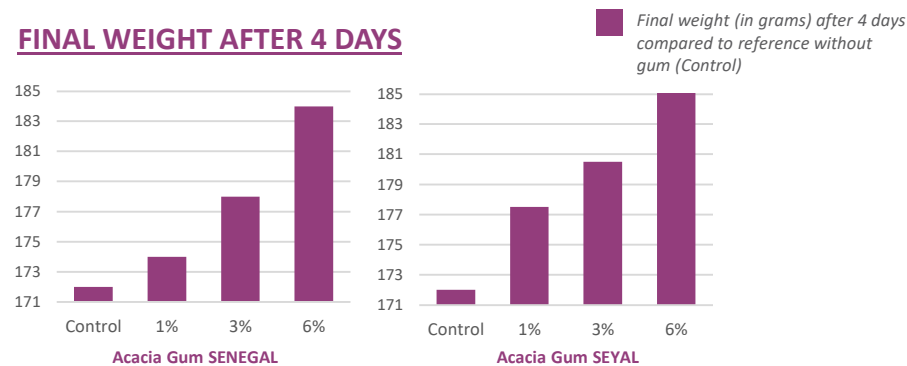


WHITE SANDWICH BREAD

WATER RETENTION AFTER 4 DAYS



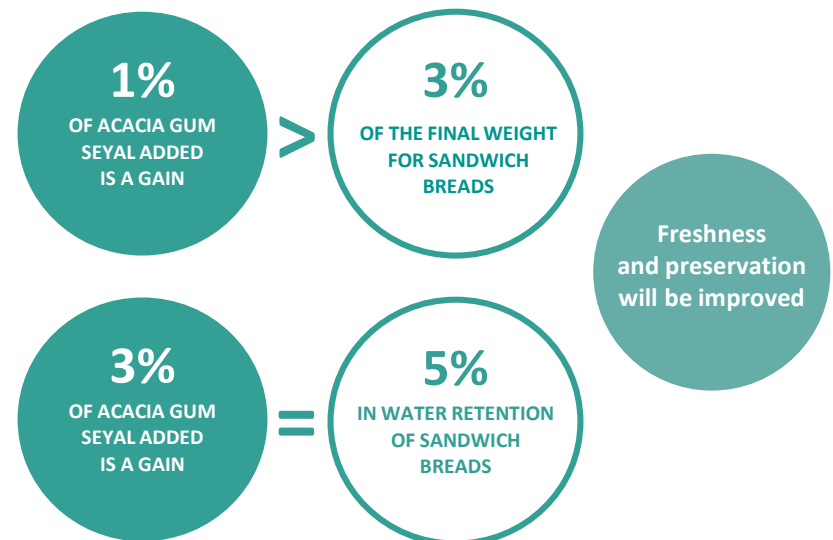
FINAL WEIGHT AFTER 4 DAYS



Acacia Gum **Seyal** offers the **best water retention and final weight**. The more Acacia Gum is added, the higher the water retention and the final weight are.

ALLAND & ROBERT RECOMMENDS:

For white sandwich bread manufacturing, Acacia Gum **Seyal** at a concentration of **1% to 6%** will be the best option, adding a **texturing effect** to your product and increasing the **fiber content**.



Acacia Gum in Breads

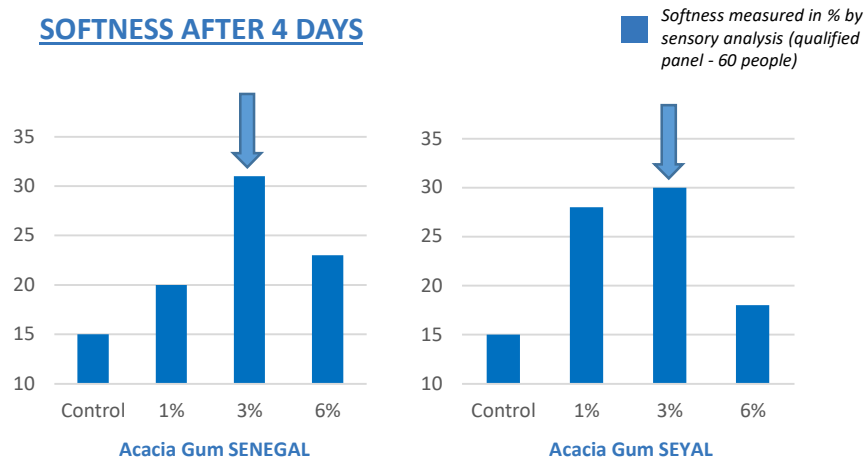
ALLAND & ROBERT

ACACIA GUM IMPACT ON TEXTURE



GLUTEN FREE BREAD

SOFTNESS AFTER 4 DAYS



Both Acacia Gums improve the **softness** of gluten free breads **after 4 days**, and thus their preservation and texture.
Best results were obtained with **3%** of gum.

ALLAND & ROBERT RECOMMENDS:

> USE Acacia Gum **Senegal OR Seyal AT 3%** in gluten free breads, and **enrich your gluten free bread in fibers** at the same time !



Acacia Gum in Breads

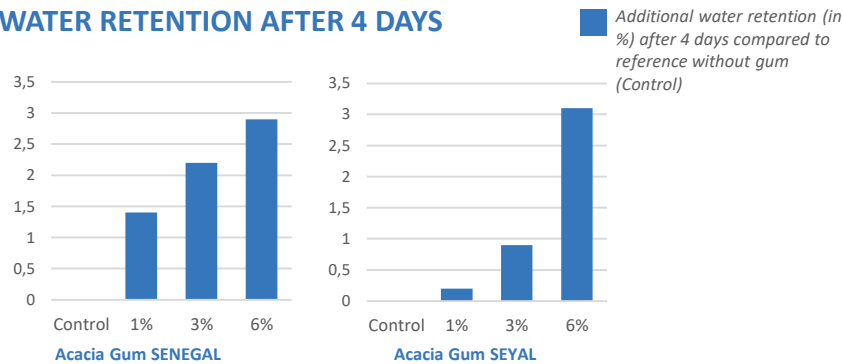
ALLAND & ROBERT

ACACIA GUM IMPACT ON WATER RETENTION & WEIGHT GAIN

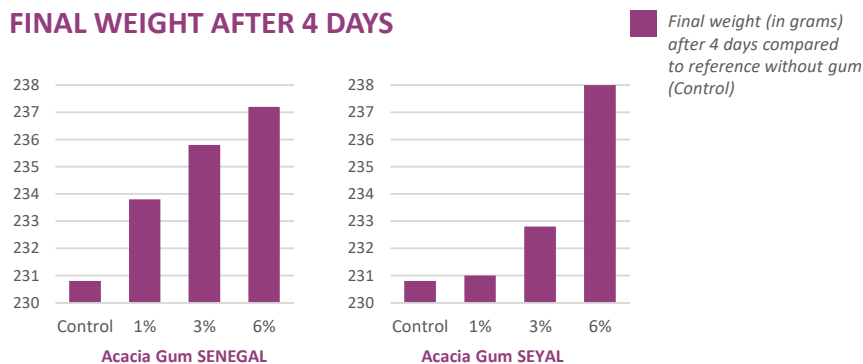


GLUTEN FREE BREAD

WATER RETENTION AFTER 4 DAYS



FINAL WEIGHT AFTER 4 DAYS

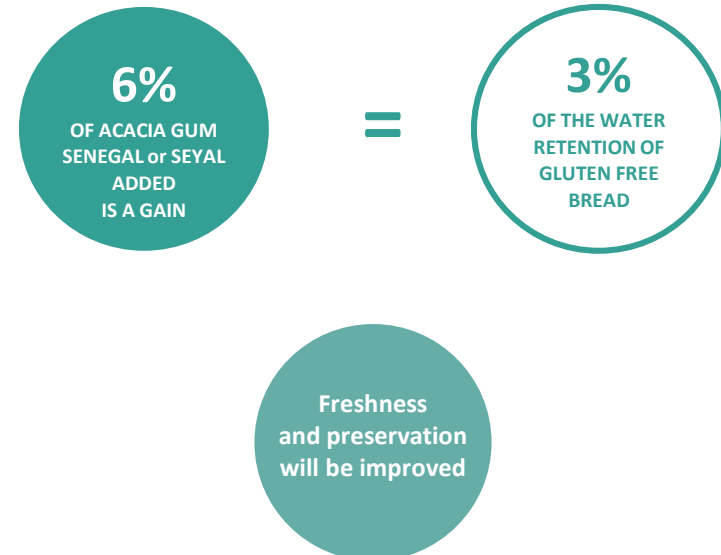


From **1% to 6%**, Acacia Gum **Senegal** can allow to increase significantly the **final weight** and the **water retention** for gluten free breads.

Acacia Gum **Seyal** offers the **best water retention and final weight at 6%**.

ALLAND & ROBERT RECOMMENDS:

For gluten free bread manufacturing, Acacia Gum **Senegal at 1% to 6% OR** Acacia Gum **Seyal at 6%** will increase the **final weight** and the **water retention** so the **bread preservation** by adding **fibers** at the same time.



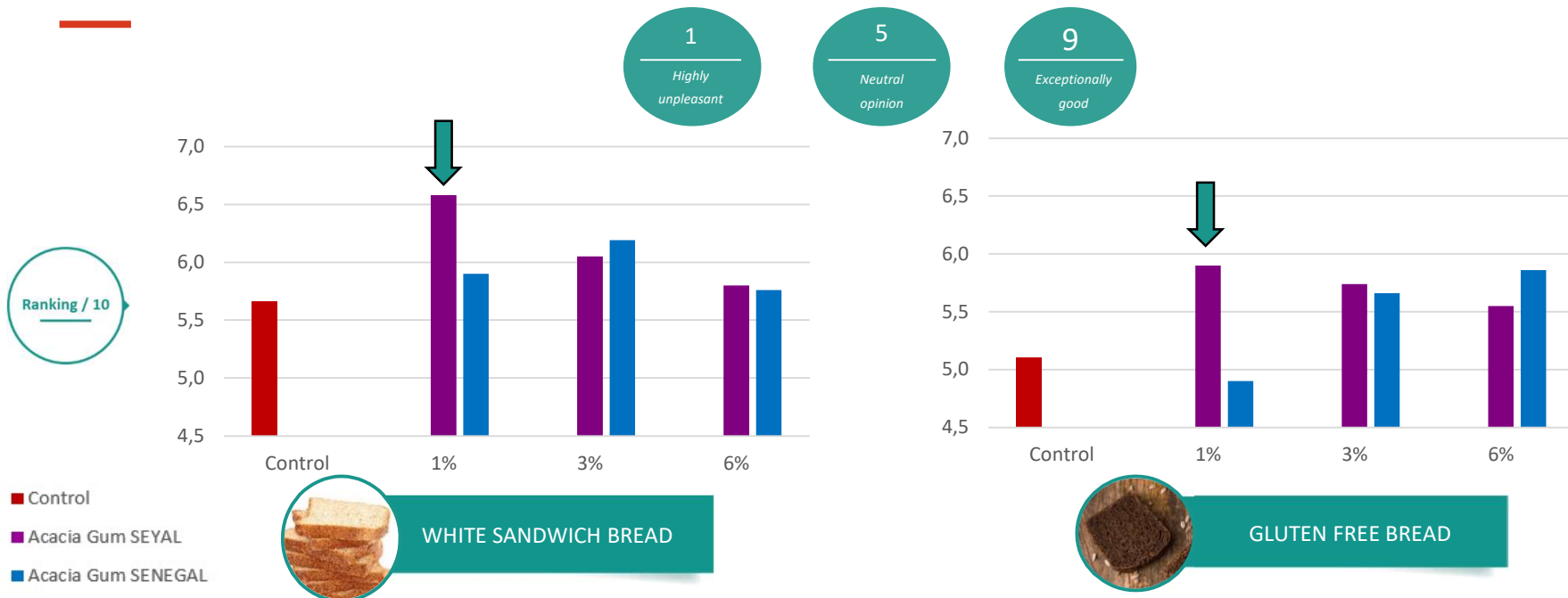
Acacia Gum in Breads

ALLAND & ROBERT

SENSORY EVALUATION RESULTS



GLOBAL RANKING



White sandwich breads with **Acacia Gum** are **ranked better than their control** by the sensory analysis panel.

For **gluten free breads**, Acacia Gum **Senegal** at **3% or 6%** and Acacia Gum **Seyal** improve significantly the **consumer appreciation**.

Breads with **1%** Acacia Gum **Seyal** are standing out the most.



100% of breads with Acacia Gum Seyal were ranked better than their control.

Acacia Gum in Breads

ALLAND & ROBERT

SENSORY EVALUATION RESULTS



RATIO LIKED / DIDN'T LIKE

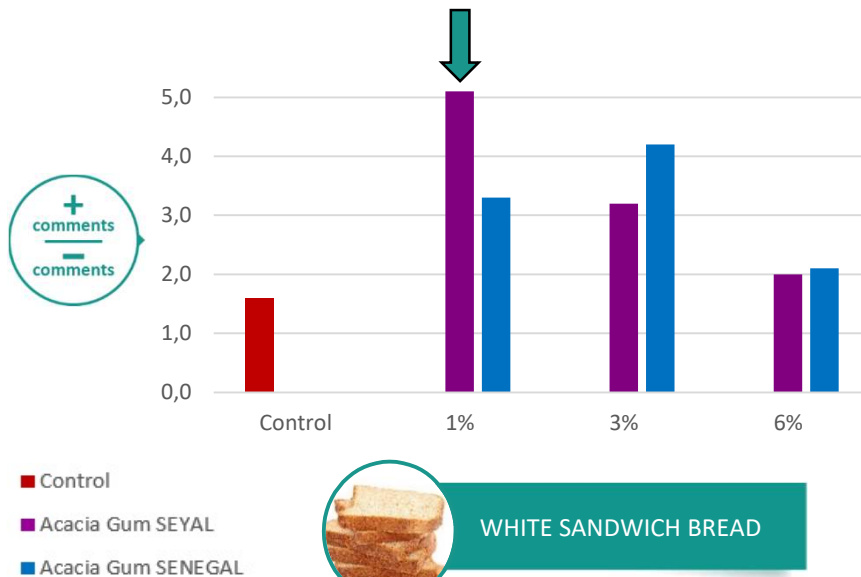
THIS RATIO MEASURES THE NUMBER OF POSITIVE COMMENTS VERSUS NEGATIVE COMMENTS.

If ratio = 2

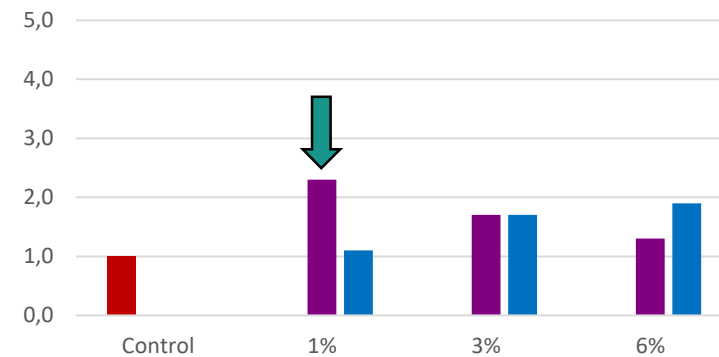
Twice as much positive comments as negative ones.

All breads enriched with acacia gum received more positive comments than negative ones.

This is especially important for white sandwich breads.



WHITE SANDWICH BREAD



GLUTEN FREE BREAD



Consumers generally much prefer breads with Acacia Gum added.



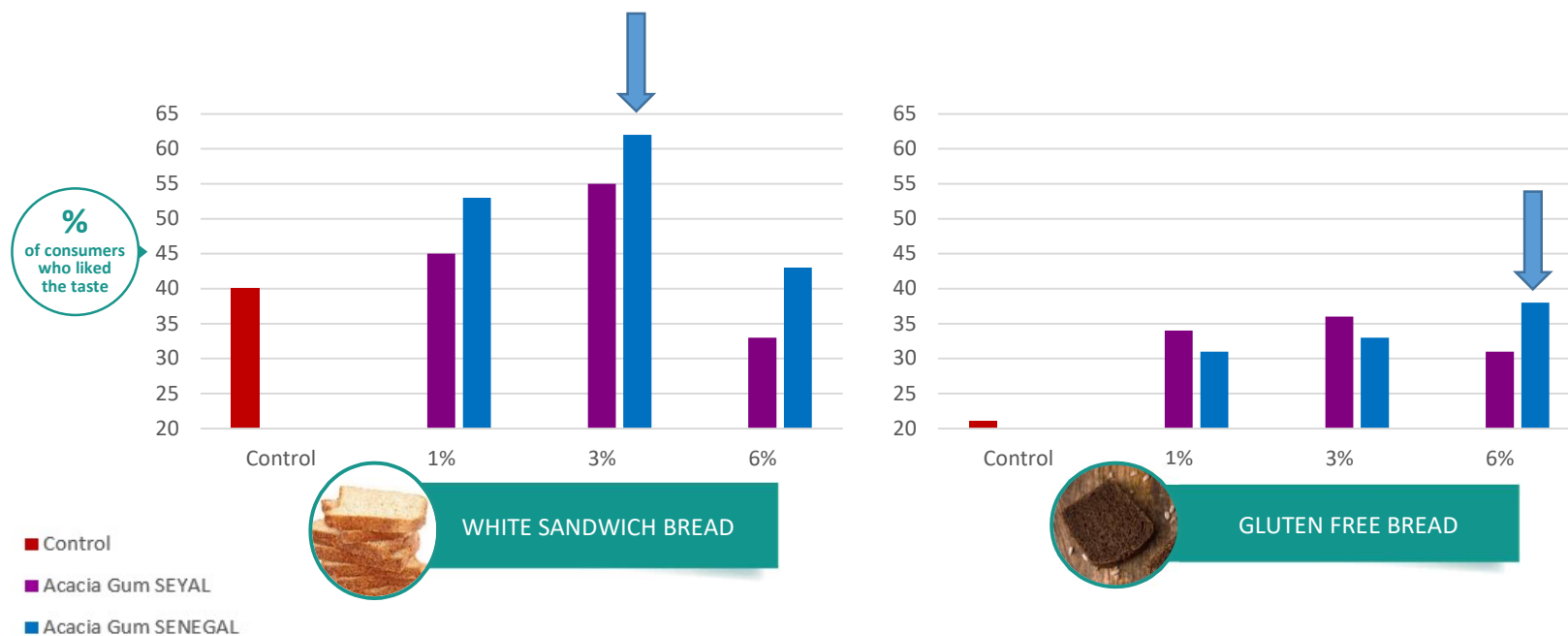
Acacia Gum in Breads

ALLAND & ROBERT



TASTE

SENSORY EVALUATION RESULTS



Acacia Gum **Senegal** allows to obtained the **better taste appreciation** for the two types of bread.
1% to 3% of Acacia Gum Seyal can be used to **improve consumer taste appreciation** for the two types of bread.



Both Acacia Gums improve considerably bread taste.

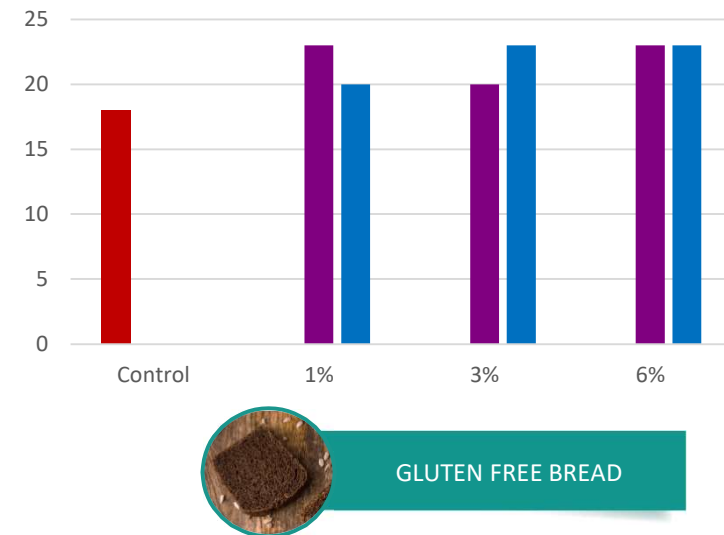
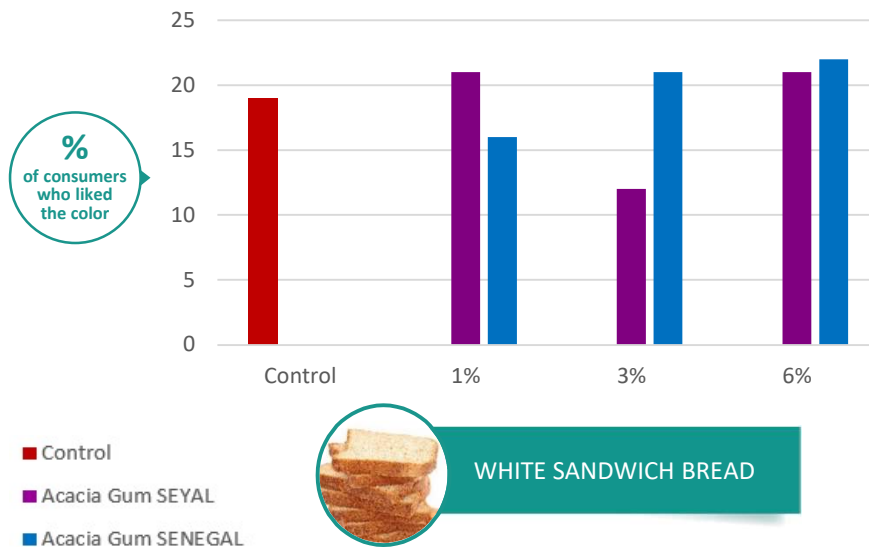
Acacia Gum in Breads

ALLAND & ROBERT

SENSORY EVALUATION RESULTS



COLOR



Further colorimetric tests have shown **very little or no effect** on the **color of bread crumbs and crusts with Acacia Gum addition**. Globally, **Acacia Gum addition**, at chosen percentages, **doesn't negatively impact color appreciation** of breads by consumers.



It's possible to improve the bread preservation without impacting the bread color.

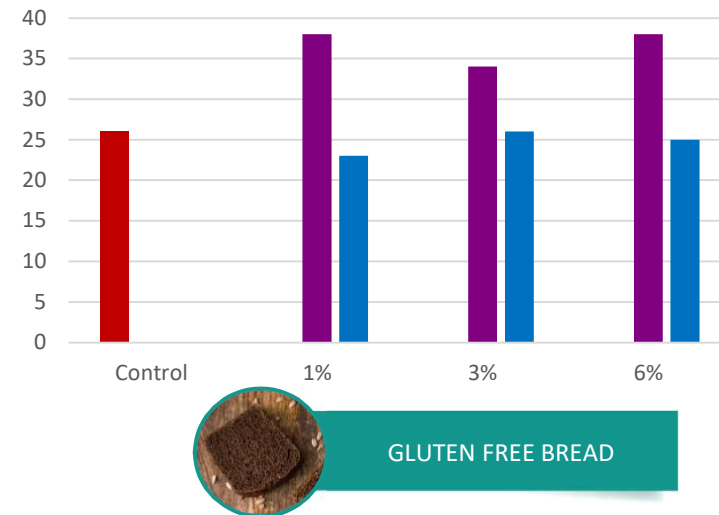
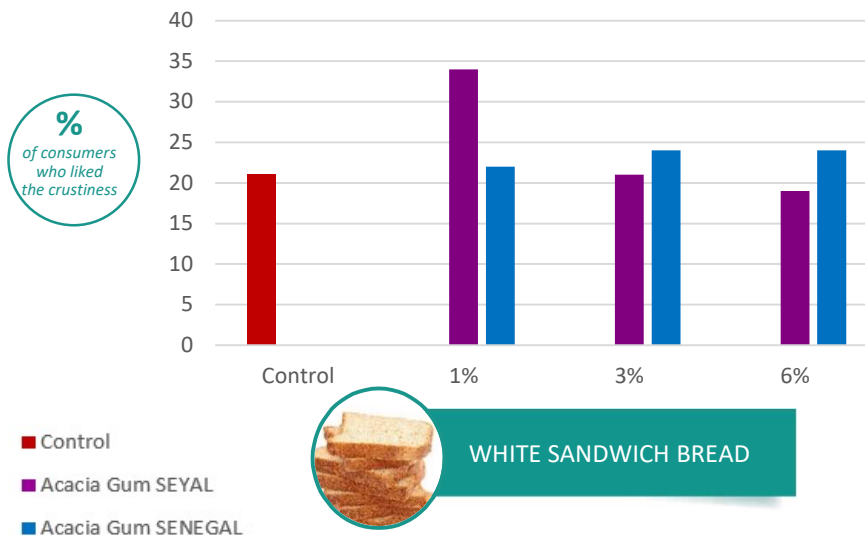
Acacia Gum in Breads

ALLAND & ROBERT

SENSORY EVALUATION RESULTS



CRUSTINESS



Acacia Gum **Seyal** at **1%** improves crustiness satisfaction for **white sandwich bread**. Acacia Gum **Senegal** and other Acacia Gum **Seyal's** dosages have **no or very little impact on bread crustiness appreciation**.

For **gluten free bread**, the **3 percentages** of Acacia Gum **Seyal** tested increase the percentage of people who **like the bread crustiness**.



With Acacia Gum, improving the preservation of breads also means improving the consumers sensory experience!

Acacia Gum in Breads

ALLAND & ROBERT

CONCLUSION: WHICH GUM TO USE FOR WHICH BENEFIT?

		WHITE SANDWICH BREAD			GLUTEN FREE BREAD		
		Acacia Gum SEYAL	Acacia Gum SENEGAL	Best performer	Acacia Gum SEYAL	Acacia Gum SENEGAL	Best performer
PRESERVATION	> Softness	UP TO 3%	UP TO 6%	SEYAL	UP TO 3%	3%	SENEGAL
	> Mass & Water Retention	UP TO 6%	UP TO 6%	SEYAL	6%	UP TO 6%	SEYAL
SENSORY EXPERIENCE	> General	UP TO 3%	UP TO 3%	SEYAL	UP TO 6%	3% MIN	SEYAL
	> Taste	UP TO 3%	UP TO 3%	SENEGAL	UP TO 6%	UP TO 6%	SENEGAL
FIBER ENRICHMENT	> Source of fibers	3% MIN	3% MIN	SEYAL or SENEGAL	3% MIN	3% MIN	SEYAL or SENEGAL
	> Enriched in fibers	6% MIN	6% MIN	SEYAL or SENEGAL	6% MIN	6% MIN	SEYAL or SENEGAL

These recommendations are related to this study.

Acacia Gum in Breads

ALLAND & ROBERT

CONCLUSION: WHICH GUM TO USE FOR WHICH BENEFIT?



SIGNIFICANT INCREASE OF SHELF LIFE

due to a **better water retention** combined to **softness improvement** for regular and gluten free breads



SEVERAL DOSAGES

can be approached according to the target: **shelf-life improvement** combined to **nutritional allegations** (« source of / enriched in fibers »)

The **Acacia Gum Seyal** or **Senegal** addition will, depending on the bread type and dosage, **increase the freshness, softness and preservation of breads** with an impact on the shelf life.

Both **Acacia Gum** may also have positive impact on **customers' appreciation** of breads.

Depending on the **country regulations**, the **Acacia Gum** addition will allow **fiber enrichment nutritional allegations**.



Acacia Gum to stick Grains

Acacia Gum to stick Grains

ALLAND & ROBERT

ACACIA GUM USAGE TO HOLD GRAINS ON BAKERY SURFACES

TRIALS DONE IN OUR APPLICATION LABORATORY

Products evaluated:

- Crackers
- Biscuits
- Buns
- Madeleines

**Acacia Gum
Senegal (396i)**

Grains tested:

- Sunflower seeds
- Flax seeds
- Chia seeds

OUR OBJECTIVES:

- Replace salt, sugar or eggs generally used
- Avoid seed loss during production
- Prevent unstick seeds in the packet
- Increase the fiber content

Acacia Gum to stick Grains

ALLAND & ROBERT

ACACIA GUM USAGE TO HOLD GRAINS ON BAKERY SURFACES

PROTOCOL



Acacia Gum solution
at 25% in water



Each ingredient
weighed



Acacia Gum solution
applied on product
surface



Grains dispersed on top of
products

Acacia Gum to stick Grains

ALLAND & ROBERT

ACACIA GUM USAGE TO HOLD GRAINS ON BAKERY SURFACES

RESULTS



Acacia Gum water solution:

- > Allows to stick grains on **different kinds of product surfaces**
- > **Very few grain loss**
- > **Enrichment in fiber**
- > **Replaces salt or sugar: impact on nutritional data**
- > **Replaces egg → allergen free & Vegan**
- > **Very easy to use**
- > **Low cost**

Acacia Gum in Cereal Bars

Acacia Gum in Cereal Bars

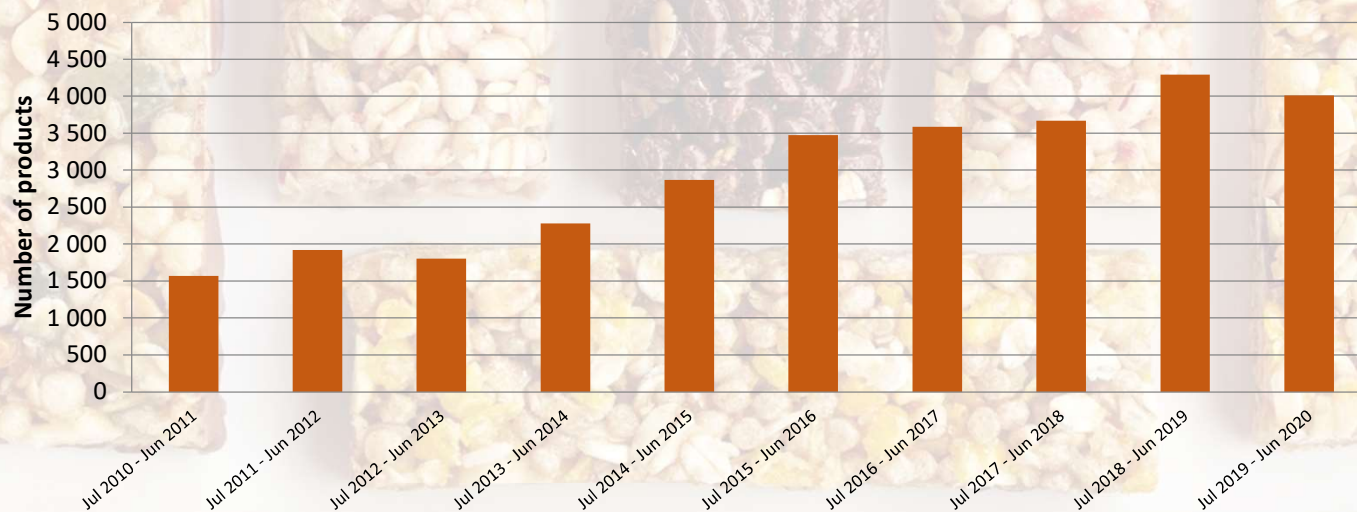
ALLAND & ROBERT

WORLDWIDE CEREAL BAR MARKET

More than 1,600 products contain Acacia Gum or Acacia Fiber

- Dynamic and with high consumers' expectations

Worldwide Cereal Bar Market: New products launched since July 2010



- Growing claims

VEGAN

Gluten
FREE

ETHICAL

Allergen
FREE

HIGH
PROTEIN

HIGH
FIBER

Acacia Gum in Cereal Bars

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PRODUCT EXAMPLES

Orgain Kids O-Bar Peanut Butter Organic Wholegrain Energy Snack	Love Good Fats Coconut Chocolate Chip Flavoured Snack Bar
USA	Canada
Orgain	The Good Fat
Orgain Kids O-Bar	Love Good Fats
Organic whole grain oats, organic tapioca fiber, organic peanut butter, organic raisins, organic peanuts, organic cane sugar, organic erythritol, organic tapioca starch, organic vegetable glycerin, organic sunflower oil, natural flavors, organic pea protein, organic sunflower lecithin, organic acacia gum , sea salt, baking soda	Fat blend (almond butter, organic palm stearin, coconut oil), chocolate flavoured coating (isomaltooligosaccharides (dietary fibre), palm kernel oil, palm oil, milk protein isolate, cocoa powder processed (alkali), sunflower lecithin, stevia extract), whey protein isolate, semi-sweet chocolate chips (cane sugar, chocolate liquor, cocoa butter, sunflower lecithin, vanilla extract), cocoa powder, gum acacia , rice flour, whey crisp (whey protein isolate, tapioca starch, cocoa powder processed (alkali), calcium carbonate, sunflower lecithin), oligofructose (dietary fibre), dried unsweetened coconut, sea salt, natural flavour, mixed tocopherols (sunflower oil)



Acacia Gum in Cereal Bars

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PRODUCT EXAMPLES

Baouw Organic Beet, Almond and Espelette Pepper Nutritional Bars	Quest Chocolate Sprinkled Doughnut Flavoured Protein Bar
France	Israel
Outdoor Organic Nutrition, France	Quest Nutrition
Baouw	Quest
Dates*, almonds* (15%), beets* (11%), sunflower protein*, blackcurrant cubes* (blackcurrant*, concentrated apple juice*, pectin, rice flour*), olive oil*, apples*, hibiscus flower*, acacia fibre* , beet juice*, Guérande salt (1.5%), paprika*, savoury*, Espelette pepper* (0.1%)	Protein blend (31%) (milk protein isolate, whey protein isolate), corn fibre, almonds, water, sweetener (E968), palm oil, natural flavour, aroma, sodium caseinate, cocoa, salt, beetroot powder, cabbage juice, food colour (E160aii, E160b), coating (E903), stabiliser (E414) , emulsifier (sunflower lecithin), sweetener (E960)



Acacia Gum in Cereal Bars

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PRODUCT EXAMPLES

Foodspring Extra White Chocolate and Almond Protein Bar	Gainomax Lemon Lean Protein Bar
Spain	Sweden
Foodspring, Germany	Norrmejerier, Sweden
Foodspring	Gainomax Lean on Protein
Whey protein, white chocolate (sweetener (20%) (sweetener (maltitol), cocoa butter, whole milk powder, emulsifier (soy lecithin), vanilla)), moisturizer (glycerol), caramel flavor coating (maltodextrin, sweetener (maltitol), cocoa butter, whole milk powder, milk protein, moisturizer (glycerol), milk fat, cocoa mass, emulsifier (sunflower lecithin, soy lecithin), salt, flavors), almonds (6.2%), chocolate drops (sweetener (cocoa mass, sweetener (maltitol), emulsifier (soy lecithin), reduced fat cocoa powder, vanilla)), sunflower oil, flavourings (milk), emulsifier (sunflower lecithin), vegetable fiber (acacia gum) , salt, sweetener (steviol glycosides)	White chocolate (sweetener (25%) (maltitol, cocoa butter, whole milk powder, emulsifier (soy lecithin), vanilla)), gelatine hydrolysate, lemon layer (18%) (bulking agent (polydextrose), xylitol, cocoa butter, sunflower oil, emulsifier (soy lecithin, citric acid ester), flavours, colouring agent (lutein)), milk protein, humectant (glycerol), soy protein, soy crisps (soy protein, tapioca starch, salt), hydrolysed wheat gluten, soy oil, acidulant (citric acid), flavours, vegetable fibre (acacia gum) , emulsifier (soy lecithin), sunflower oil, colouring agent (beta carotene)



Acacia Gum in Cereal Bars

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PRODUCT EXAMPLES

Kind Breakfast Blueberry Almond Bars	Tartex Vegetarian Food Lover Oat Bite White Chocolate Cranberry Flapjack
UK	Germany
KIND Snacks	Allos Hof-Manufaktur, Germany
Kind Breakfast	Tartex Vegetarian Food Lover
Gluten free oats (30%), cane sugar, brown rice flour, canola oil, water, gum acacia , raisin paste, dried blueberries (2.6%), dried cranberries, sliced almonds (1.8%), gluten-free oat flour (1.8%), millet (0.85%), buckwheat (0.5%), honey, amaranth (0.47%), quinoa (0.44%), natural flavouring, antioxidant (tocopherols), salt	Oat grain flakes* (47%), rice syrup*, apple juice concentrate*, dried and sweetened cranberries* (6.9%) (cranberries*, apple juice concentrate*, sunflower oil*), sunflower oil*, white chocolate* (2.5%) (raw cane sugar*, cocoa butter*, whole milk powder*), thickener* (gum arabic) , sea salt



Acacia Gum in Cereal Bars

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PRODUCT EXAMPLES

Alfa Performance Mint Chocolate Flavoured Protein Bar	Atkins Harvest Mixed Nuts & Chocolate Bar
Finland	Norway
Kama International, Finland	Atkins International, Netherlands
Alfa Performance	Atkins Harvest
Milk protein, isomalto-oligosaccharide*, oligofructose, cocoa butter, filler (polydextrose), cocoa mass (4.9%), low fat cocoa (3.9%), vegetable fibres (acacia gum) , l-arginine (0.8%), flavourings, spirulina, salt, minerals (magnesium oxide, zinc gluconate), sweeteners (steviol glycosides, sucralose (0.007%)), vitamins (vitamin B6 (pyridoxine hydrochloride), vitamin D (cholecalciferol), vitamin B12 (cyanocobalamin))	Nut mix (peanuts (14%), almonds (14%), cashews (13%)), chicory root fibre, milk chocolate (15%) (sugar, cocoa butter, whole milk powder, cocoa mass, emulsifier (soy lecithin), natural vanilla flavouring), pumpkin seeds (11%), soluble maize fibre, soy crisp (6%) (soy protein, tapioca starch, salt), sunflower oil, humectant (vegetable glycerol), gum arabic , salt



Acacia Gum in Cereal Bars

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PRODUCT EXAMPLES

Farmer Soft Choc & Milk Cookie Cereal Bar	Enervit Nientemeno Pistachio and Cranberry Bar with White Chocolate Base
Switzerland	Italy
Migros-Genossenschafts-Bund	Enervit, Italy
Farmer Soft	Enervit Nientemeno
Biscuits (25%) (wheat flour, sugar, coconut oil, cocoa powder (7%), glucose syrup, dye (E153), cooking salt, raising agent (E500)), sugar, wheat flour, palm fat, coconut fat, glucose, fructose, glucose syrup, skimmed milk powder (4%), acacia fibres , low-fat cocoa (3%), whole milk powder (1.7%), humectant (sorbitol syrup), sunflower oil, cooking salt, flavouring, raising agents (E503, E500, E501), emulsifier (soya lecithin), preservative (sodium disulphite)	Protein rice flakes (16%) (concentrated rice protein (9.6% on the finished product), rice flour), fructose-glucose syrup, white chocolate (15.7%) (sugar, cocoa butter, milk powder, milk powder serum, emulsifier (soy lecithin), vanilla extract), bulking agent (polydextrose), rice syrup, corn flakes (9.4%) (corn, sugar, salt), pistachio (7.5%), rice flakes (5.5%) (rice flour, maize flour, sugar, salt), acacia fiber (4.8%) , sweetened cranberries (4%) (cranberries, sugar, sunflower oil), poppy seeds (1%), sunflower oil, emulsifier (sunflower lecithin), natural flavouring, salt, vitamin mix (niacin (nicotinamide), pantothenic acid (calcium D-pantothenate), vitamin B6 (pyridoxine hydrochloride, emulsifier (mono- and diglycerides of fatty acids)), vitamin B12 (cyanocobalamin, maltodextrin), vitamin B1 (thiamin hydrochloride), vitamin B2 (riboflavin), folic acid (L-methylfolate calcium), biotin (D-biotin))



Acacia Gum in Cereal Bars

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PRODUCT EXAMPLES

Go On Nutrition Protein 33% Chocolate Flavoured Premium Whey Bar	Flax Fruit Raspberry Fruit Bar
Poland	Russia
Sante A. Kowalski, Poland	Kompas Zdorov'ya, Russia
Go On Nutrition Protein 33%	Flax Fruit
Milk protein (31%) (milk protein isolate MPI, whey protein concentrate WPC 80 (from milk)), soluble corn fibre, peanuts, sweetener (maltitol), vegetable fats (non hydrogenated palm fat*, shea fat), chocolate (3.5%) (sweetener (maltitol), cocoa mass, emulsifier (soya lecithin), fat reduced cocoa powder, natural vanilla flavouring), humectant (glycerol), soy isolate, cocoa, soluble acacia fibre , tapioca starch, salt, flavourings, sweeteners (sucralose, steviol glycosides), emulsifier (lecithins (soy)), enriching substances (magnesium citrate, vitamin C, niacin, vitamin E, pantothenic acid (vitamin B5), vitamin B6, thiamin (vitamin B1), vitamin B12)	Dried apricot, fresh frozen raspberries, dried apple, raisins, fructose, syrup, crushed flax, gum arabic , potassium sorbate, ascorbic acid



Acacia Gum in Cereal Bars

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PRODUCT EXAMPLES

Simpleat Protein Bar	Aussie Bodies Lo Carb Blueberry Almond Crunchy Protein Bar
South Korea	Australia
SN Food, South Korea	Aussie Bodies, Australia
Simpleat	Aussie Bodies Lo Carb
Peanut, processed legume (isolated soy protein, tapioca starch, refined salt), compound chocolate (sugar, vegetable oil, desalted whey, cocoa powder, defatted milk powder), fructooligosaccharide, almond, oligosaccharide, processed grain, white sugar, processed sugar, gum arabic , glycerin, rapeseed oil, cocoa powder, refined salt, lecithin, d-tocopherol (mixed type)	Aussie Bodies protein blend (35%) (soy protein crisps (soy protein isolate, tapioca starch, salt), whey protein concentrate, milk protein concentrate), no added sugar dark chocolate (25%) (cocoa mass, cocoa butter, sweetener (maltitol), emulsifier (sunflower lecithin), flavour), bulking agent (polydextrose), sweetener (maltitol), blueberry pieces (4.5%) (blueberry (60%), sugar), roasted almond pieces (3%), humectant (glycerol), vegetable fat, unsalted butter, vegetable gums (acacia gum , xanthan gum), black chia seeds (1%), flavours, salt, emulsifier (soy lecithin)



Acacia Gum in Cereal Bars

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PRODUCT EXAMPLES

Oxxo Bitz Chocolate Flavored Protein Bar with Peanut and Almond	Banana Brasil Nutsbar Barra de Goji e Cranberry (Goji and Cranberry Bar)
Mexico	Brazil
Cadena Comercial OXXO, Mexico	Plátano Brasil, Brazil
Oxxo Bitz	Banana Brasil Nutsbar
Peanuts (27%), protein preparation (18.5%) (isolated soy protein, tapioca starch, salt), chocolate coating (16%) (sugar, vegetable oil, cocoa powder, whole milk powder, soy lecithin, salt), fructooligosaccharide (15%), almonds (7%), glycerin, corn syrup, sunflower seeds, dehydrated coconut, arabic gum , inulin, maltodextrin, soy lecithin, iodized salt, natural flavors, caramel class III, annatto extract	Peanut, almond, cashew nut, dehydrated cranberry, dehydrated goji berry, maltodextrin, polydextrose (dietary fiber), pumpkin seeds, chia seeds, quinoa seeds, acacia gum (dietary fiber) , sustainable palm fat, humectant (sorbitol), emulsifier (soy lecithin), natural sweetener (steviol glycosides (stevia)), natural antioxidant (tocopherol (vitamin E))



Acacia Gum in Cereal Bars

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PRODUCT EXAMPLES

NuGo Organic Double Dark Chocolate Protein Bar	Bimbo Vital Nuts Bar with Cranberries and Nuts
Colombia	Argentina
NuGo Nutrition, USA	Compañía de Alimentos Fargo, Argentina
NuGo Organic	Bimbo Vital
Organic crispy (hexane-free crispy soy (organic soy protein, organic rice flour, calcium carbonate), organic crispy whole rice, organic rolled oats), organic chocolate (organic cane juice, organic chocolate liquor, organic cocoa butter, organic soy lecithin, organic vanilla), organic tapioca syrup, organic agave syrup, non-transgenic organic isolated soy protein, organic tapioca maltodextrin, organic cocoa powder, thickener (organic arabic gum) , natural flavorings	Almonds, peanuts, cranberries, glucose syrup, sugar, water, vegetable oil, maltodextrin, honey, stabilizer (INS 965), humectant (INS 420), thickener (INS 414) , emulsifier (INS 322), acidity regulator (INS 330)



Acacia Gum in Cereal Bars

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PRODUCT EXAMPLES

En Línea Cereal Bars with Almond and Coconut	Granvita Amaranth Bar with Oat and Cranberries
Chile	Mexico
Eckart Alimentos, Chile	Grupo Industrial Vida, Mexico
En Línea	Granvita
Rolled oats, maltitol syrup, almond (12%), corn crisps (rice flour, polydextrose, isomaltitol, calcium carbonate, sucralose (16.3mg/100g)), grated coconut (7%), water, maltodextrin, polydextrose, inulin, skim milk powder, gum arabic , soy lecithin, tartar cream, nature identical coconut flavor, stevia (2mg/100g)	Oat flakes, amaranth, glucose, high fructose corn syrup, sugar, maltodextrin, cranberry, shredded coconut, wheat bran, soy lecithin, arabic gum , iodized salt, artificial flavor, antioxidant (BHT)



Acacia Gum in Cereal Bars

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STUDY ON ACACIA GUM IMPACT IN CEREAL BARS

TRIALS DONE IN OUR APPLICATION LABORATORY

The cereal bar recipe contains :

- Cereal flakes (oat, spelt, corn)
- Dried fruits (raisins, cranberries, figs, apricots)
- Nuts (cashews, almonds)
- Sugar (honey)
- Fat (coconut oil, butter)
- Seeds (sunflower, flax, pumpkin)
- **Acacia Fiber Seyal (AF339)**

Only ORGANIC ingredients

OUR OBJECTIVES:

- Products close to industrial ones

VISUAL

TASTE

TEXTURE

NUTRITION

- Fiber enrichment

Acacia Gum in Cereal Bars

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STUDY ON ACACIA GUM IMPACT IN CEREAL BARS

RECIPES

Ingredients	Control Without Acacia Fiber (%)	Trial 1 With 3% Acacia Fiber (%)	Trial 2 With 4% Acacia Fiber & 30% sugar reduction (%)
Cereal flakes + Apricots + Figs	38	38	38
Nuts + Raisins + Cranberries	34	34	34
Honey	18	15	6
Coconut oil	5	5	5
Butter	5	5	5
Acacia Fiber Seyal (AF339)	-	3	4
Water	-	-	8

Acacia Gum in Cereal Bars

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STUDY ON ACACIA GUM IMPACT IN CEREAL BARS

Protocol

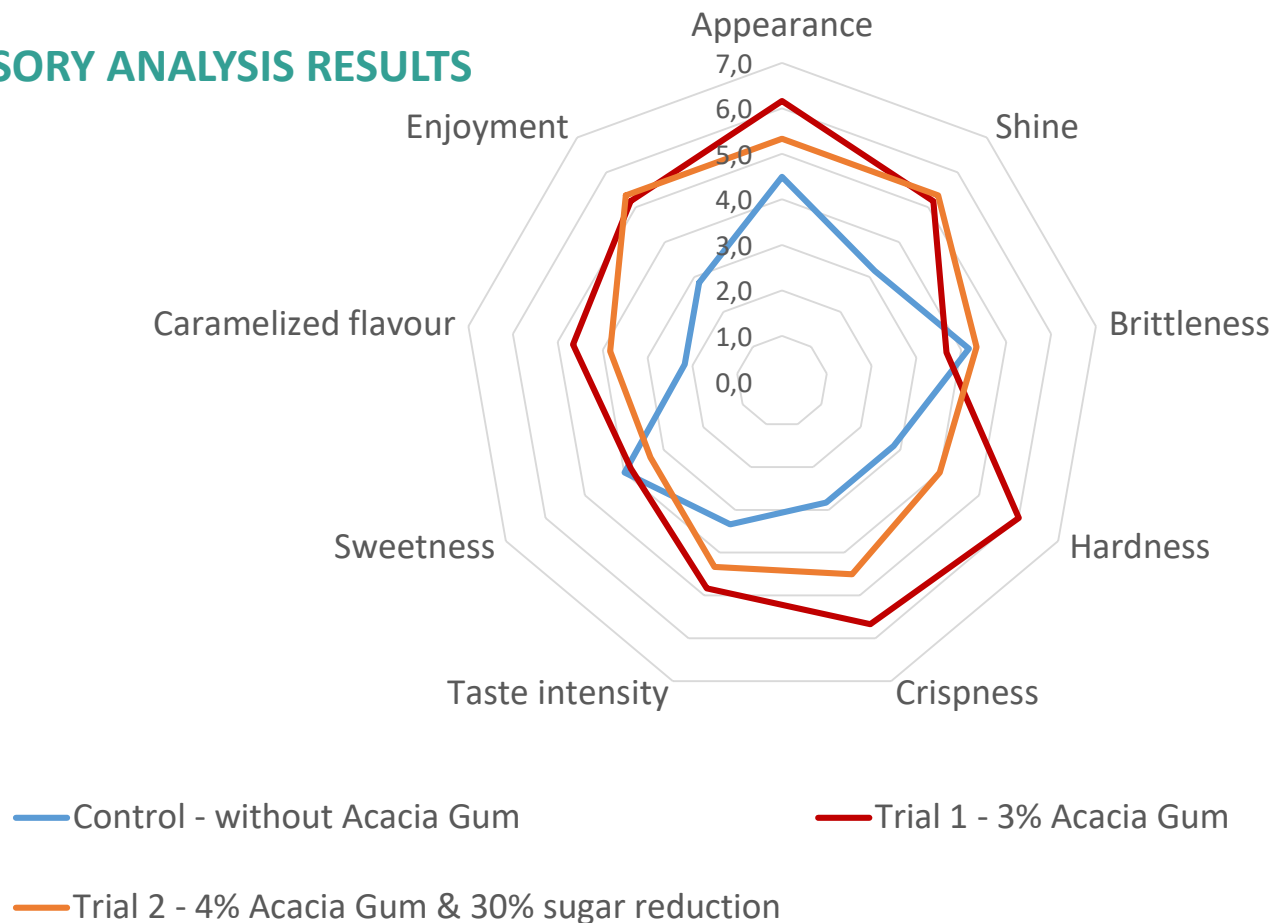
Acacia Gum in Cereal Bars

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STUDY ON ACACIA GUM IMPACT IN CEREAL BARS

SENSORY ANALYSIS RESULTS



Acacia Gum in Cereal Bars

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STUDY ON ACACIA GUM IMPACT IN CEREAL BARS

RESULTS

Acacia Gum addition:

- > **Fiber enrichment** → can allow a fiber claim
- > **Sugar reduction**
- > **Enhances** fruits and caramel **flavours**
- > Brings **shine** (remind sugar)
- > **Improves** final product **cohesiveness**
- > **Decreases the brittleness** → impact on manufacturing and transportation
- > **Reduces baking time**

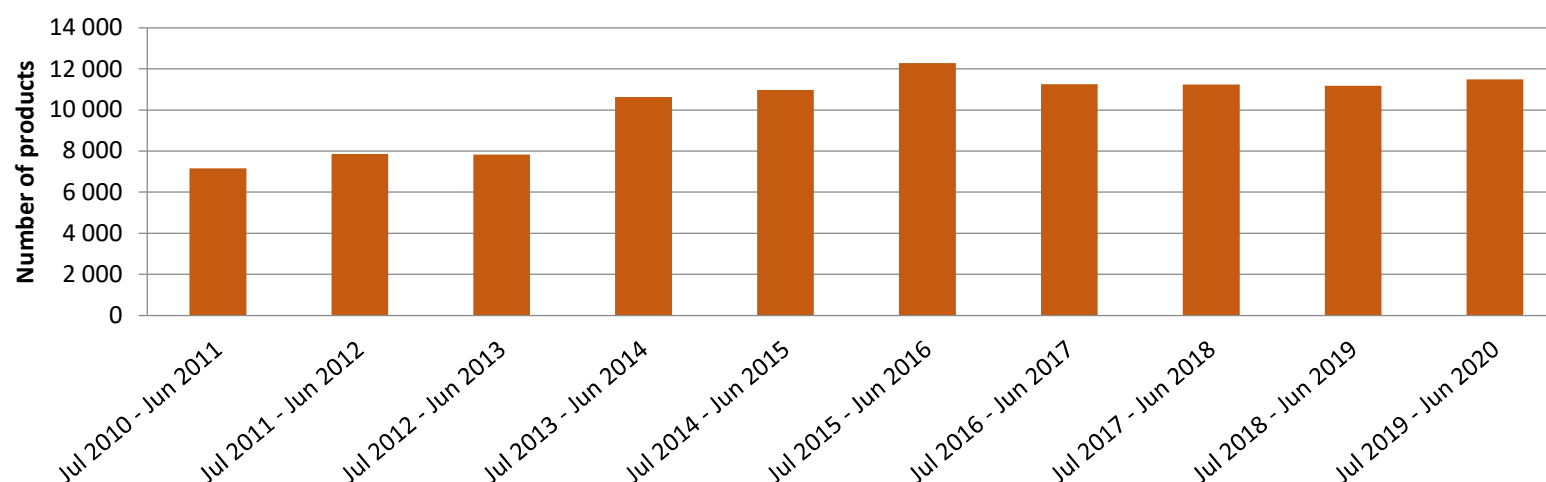




Acacia Gum in Biscuits

WORLDWIDE SWEET COOKIE & BISCUIT MARKET

Worldwide Sweet Cookie & Biscuit Market: new products launched since July 2010



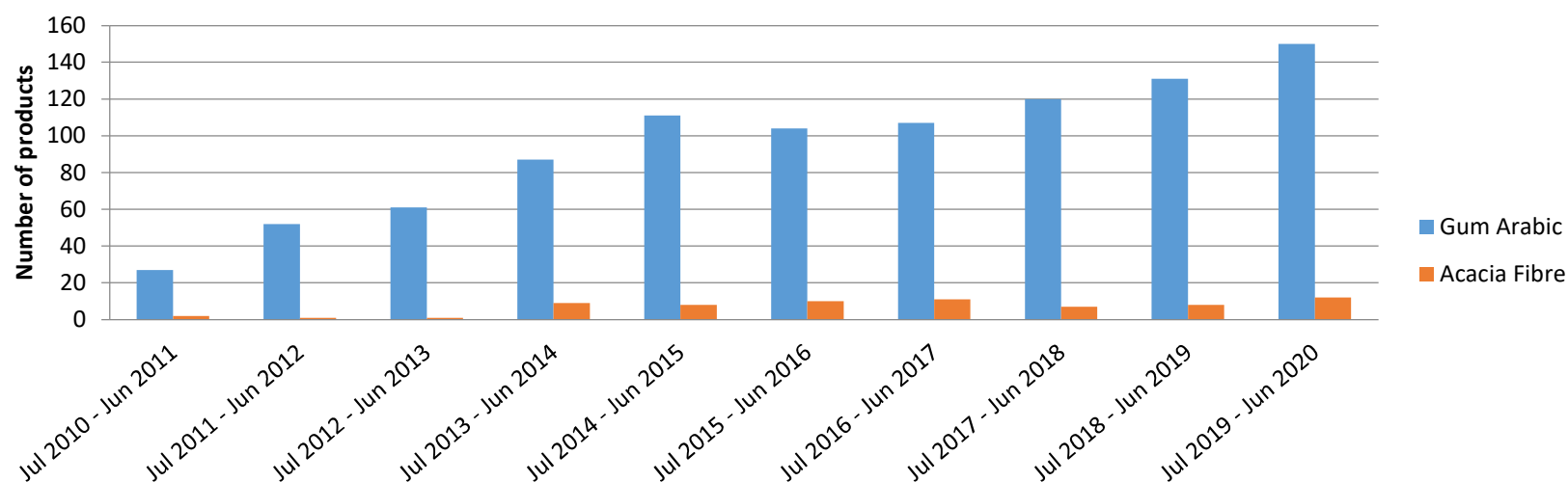
- More than 10,000 new sweet cookies and biscuits launched every year

Acacia Gum in Biscuits

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WORLDWIDE SWEET COOKIE & BISCUIT MARKET

Sweet Cookies & Biscuits launched since July 2010 and containing Gum Arabic/Acacia or Acacia Fiber



Acacia Gum in Biscuits

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PRODUCT EXAMPLES

Kodilar Natural Life Milk and Banana Flavored Oat Biscuit	NuGo Peanut Butter Chocolate Cookie
Brazil	Colombia
M.W.A., Brazil	NuGo Nutrition
Kodilar Natural Life	NuGo
Wholegrain cereals (wholegrain oat flour, wholegrain oat flakes, wholegrain wheat flour, wholegrain wheat bran, mix of wholegrain barley and rice flakes), enriched wheat flour (iron, folic acid), demerara sugar, dehydrated banana, palm fat, skimmed milk powder, whey powder, corn starch, natural sweetener (xylitol), maltitol syrup, acacia fiber , inulin fiber, egg yolk, chemical leavening agents (ammonium bicarbonate, sodium bicarbonate, monocalcium phosphate), emulsifiers (soy lecithin, mono- and diglycerides of fatty acids), cinnamon, sea salt, flavoring	Oat Flour, Brown Sugar, Chocolate (Cane Sugar, Cocoa Liquor, Cocoa Fat, Vanilla), Chicory Roots, Pea Protein, Peanut Butter (Peanut), Peanut, Coconut Oil, White Sugar, Linseed, Vanilla, Sodium Hydrogen Carbonate, Natural Peanut Flavour, Gum Arabic



Acacia Gum in Biscuits

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PRODUCT EXAMPLES

Ready Plant-Based Protein Sugar Cookie	UpFree Galletas American Cream and Vanilla Flavor Cookies
Mexico	Chile
Ready Nutrition	Upfree
Ready	Upfree
Oat Flour, Pea Protein, Invert Sugar Syrup, Cane Sugar, Brown Rice Syrup, Palm Oil, Chicory Roots, Natural X Flavourings, Gum Arabic , Sodium Hydrogen Carbonate, Sunflower Lecithin, Salt	Corn Starch, Cassava Starch, Rice Flour, Potato Starch, White Sugar, Palm Fat, Eggs, Sodium Carboxymethyl Cellulose, Gum Arabic , Palm Fat, Sorbic Acid, Salt, Sodium Hydrogen Carbonate, Calcium Dihydrogen Phosphate, Artificial Flavouring Substance



Acacia Gum in Biscuits

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PRODUCT EXAMPLES

Verkade Café Noir Original Biscuits	L'Appétisserie Bio Chocolate & Hazelnut Generous Cookies
Netherlands	France
Koninklijke Verkade	Bjorg
Verkade	L'Appétisserie
Wheat Flour, White Sugar, Coffee (White Sugar, Caramel Colour, Instant Coffee, thickener (Alpha-cyclodextrin, Gum Arabic), Salt, Flavouring Substances), Vegetable Oils (Palm Oil, Rapeseed Oil), Wheat Starch, Salt, raising agents (Sodium Carbonates, Disodium Diphosphate), Instant Coffee, Lactic Acid, Flavouring Substances	Wheat Flour, Dark Chocolate (Cane Sugar, Cocoa Liquor, Cocoa Fat), Brown Sugar, Hazelnut, Rapeseed Oil, Butter, Acacia Fibre , Eggs, Ammonium Carbonates, Salt



Acacia Gum in Biscuits

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PRODUCT EXAMPLES

GutBio Organic Cookies with Cocoa Filling	Orientines Douceur Slilou Sweet Sliloo Moroccan Biscuits
Portugal	Morocco
Aldi	Orientines
GutBio	Orientines
Wheat Flour, Brown Sugar, Sunflower Seed Oil, Cocoa Powder, Skimmed Milk Powder, Cocoa Fat, Eggs, Butter, Sea Salt, raising agent (Ammonium Hydrogen Carbonate, Sodium Hydrogen Carbonate), Gum Arabic , Wheat Starch*from controlled organic farming	Almond, Sesame Seed, Wheat Flour, Glucose Syrup, Honey, White Sugar, Cinnamon, Anise Seed, Gum Arabic



Acacia Gum in Biscuits

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PRODUCT EXAMPLES

Dukan Coconut Biscuits	Filet Bleu Traditional Shortbread with Fresh Butter
Lebanon	Saudi Arabia
Régime Dukan, France	Filet Bleu, France
Dukan	Filet Bleu
Oat bran (60%) (gluten), sweetener (maltitol, acacia fibre , rapeseed oil (6%), grated coconut (5%)), milk proteins (casein), leavening agent (sodium carbonate, ammonium carbonate), skimmed milk powder, powdered whole egg, wheat gluten, natural flavour (1.5%), salt, sweetener (sucralose)	Wheat flour, fresh butter (30%) (milk), eggs, whey powder (milk), acacia fibre , salt, raising agents (disodium diphosphate, sodium hydrogen carbonate)



Acacia Gum in Biscuits

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PRODUCT EXAMPLES

CiaoCarb Protomax Oranchoc Flavoured High Protein Food Preparation Low Carb Cookie	Allos Hafer Nutri+ Plain Oat Biscuits
Italy	Germany
Fooditalia, Italy	Allos Hof-Manufaktur
CiaoCarb Protomax Stage 1 Attack	Hafer Nutri+
Wheat gluten (gluten), isolated soy protein (soy), pea protein, milk protein (milk), egg white (eggs), wheat fibres (gluten), acacia fibre , butter (milk), orange granules (3%), lactitol, maltitol, sweetener (sodium cyclamate), leavening agents (sodium bicarbonate, sodium acid pyrophosphate), cocoa coating (milk protein (milk), cocoa vegetable protein, rice proteins, erythritol, collagen hydrolysate, cocoa (12%), nuts (hazelnuts), cocoa butter, soy lecithin (soy))	Rolled Oats, Wheat Flour, Unrefined Natural Sugar, Rapeseed Oil, Rice (Rice Flour, Salt), Gum Arabic , Honey, Ammonium Carbonates, Dried Egg Yolk, Sea Salt, Rosemary Extract



Acacia Gum in Biscuits

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PRODUCT EXAMPLES

Naten Organic & Gluten Free Coconut Biscuits	Lilalou Organic Oat & Cereal Biscuits
Poland	Belgium
ABCD Nutrition	Lilalou Biscuits
Naten	Lilalou
Rice Flour, Coconut, Margarine (Shea Butter, Sunflower Seed Oil, Waters, Salt, Lemon Juice Concentrate), Cane Sugar, Corn Starch, Agave Inulin, Coconut Flour, Eggs, Potato Starch, Acacia Fibre , Ammonium Carbonates, Sunflower Lecithin, Sea Salt	Cereals (Oats (Rolled Oats, Oat Flour), Spelt Flour, Kamut Flour, Spelt Semolina), Sunflower Seed Oil, Cocoa Fat, Unrefined Natural Sugar, Glucose Syrup, Acacia Fibre , Pea Protein, Molasses, Sodium Hydrogen Carbonate, Cinnamon, gingerbread seasoning, Potassium Bitartrate, Sea Salt



Acacia Gum in Biscuits

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PRODUCT EXAMPLES

Lenny & Larry's Keto Cookie Peanut Butter Cookie	Full Bloom Chocolate & Strawberry Wafer Rolls
Australia	India
Lenny & Larry's	Vishal Mega Mart
Lenny & Larry's	Full Bloom
Flour (Lupin Flour, Peanut Flour), Erythritol, Peanut Butter (Peanut), Coconut Oil, Palm Oil, Chicory Roots, Pea Protein, Peanut, Sunflower Lecithin, Glycerol, Natural X Flavourings, Xanthan Gum, Sodium Hydrogen Carbonate, Gum Arabic , Stevioside, Tocopherol Concentrate Mixed	strawberry: White Sugar, Maida, Vegetable Fats, Milk Solids, Lecithin, Gum Arabic , Salt, Erythrosine, Artificial Strawberry chocolate: White Sugar, Maida, Vegetable Fats, Cocoa Powder, Milk Solids, Lecithin, Gum Arabic , Salt, permitted natural food colour (INS150C), Artificial Vanilla Flavor



Acacia Gum in Biscuits

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PRODUCT EXAMPLES

Galinco Chips Delight Rainbow Candy Cookies with Chocolate Chips	Gullón Vitalday Hazelnut Sandwich Biscuits with Oats & Chocolate Chips
Philippines	Thailand
Galinco	Galletas Gullon
Chips Delight	Vitalday
Wheat Flour, Vegetables Coconut Fat Edible Fats and Oils, Chocolate (White Sugar, Vegetable Fats (Palm Fat), Skimmed Milk Powder, Waters, Whey Powder, Cocoa Powder, Carob, Maltodextrin, thickener (Gum Arabic , Modified Starches), emulsifiers (Sorbitan Tristearate, Soy Lecithin, Polyglycerol Esters of Interesterified Ricinoleic Acid), artificial colours (Titanium Dioxide, Allura Red AC, Sunset Yellow FCF, Tartrazine, Erythrosine, Brilliant Blue FCF), Iodized Salt, glazing agent (Carnauba Wax, Shel...	Whole grain (32%), Hazelnut Paste, Sugars and Other Carbohydrate Sweeteners, Rice, Dark Chocolate, food additives (Gum Arabic , Ammonium Hydrogen Carbonate, Soy Lecithin)



Acacia Gum in Biscuits

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PRODUCT EXAMPLES



Bourbon Petit Chocolate Wafers	Cookie Time The Nut, Seed & Honey Breakfast Cookie
Japan	New-Zealand
Bourbon, Japan	Cookie Time, New Zealand
Bourbon Petit	Cookie Time
Sugar, wheat flour, vegetable fat, cacao mass, whole milk powder, shortening, glucose, starch, cocoa powder, dextrin, margarine, yeast, salt, emulsifier (from soy), colouring (caramel colour), glazes, thickener (gum arabic) , flavour, baking powder, vitamin C	Wheat flour, butter (cream, salt), roasted hazelnuts (10%), almonds (10%), glucose syrup (antioxidant (220)), brown sugar, pumpkin kernels (5%), clover honey (5%), rice crisps (rice flour, sugar, salt), vegetable gum (acacia gum) , eggs, chia seeds (2.5%), raising agent (500), natural flavour, salt



Acacia Gum in Biscuits

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PRODUCT EXAMPLES

Dimpflmeier Honey & Spice Cookies	Hostess Bakery Petites Fudge Blondie Crispi Thins
Canada	USA
Dimpflmeier Bakery, Canada	Hostess Brands, USA
Dimpflmeier	Hostess Bakery Petites
Unbleached wheat flour, honey, rye flour, icing sugar, golden sugar, glucose, sugar, canola oil, modified palm oil, modified palm kernel oil, liquid whole egg, cashews, candied peel (orange peel, lemon peel, citron peel, sugar/glucose-fructose, glucose, citric acid, sodium benzoate, colour, sulphites, calcium chloride), spices, corn starch, gelatin, dried egg albumen (triethyl citrate), salt, sodium bicarbonate, ammonium bicarbonate, sorbitan monostearate, polysorbate 60, mono- and diglycerides, ammonium aluminum sulfate, gum arabic , cream of tartar, magnesium oxide, artificial vanilla flavour, colour	Enriched bleached flour (bleached wheat flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), sugar, cocoa chip (sugar, hydrogenated palm kernel oil, alkali processed cocoa, dextrose, lecithin), shortening (palm oil, soybean oil, canola oil), water, protein blend (soy protein, maltodextrin, cerelose, guar gum, beta carotene, lecithin), brown sugar, egg white, vanilla extract, natural flavor, salt, maltodextrin, gum arabic , silicon dioxide, leavening (sodium bicarbonate, ammonium bicarbonate), molasses, milk



Acacia Gum in Biscuits

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STUDY ON ACACIA GUM IMPACT IN WAFERS

TRIALS DONE IN OUR APPLICATION LABORATORY

The wafer recipe contains :

- Flour
- Sugar
- Egg
- Butter
- **Acacia Gum Senegal 396i**

OUR OBJECTIVES:

- Sugar reduction
- Fiber enrichment
- Maintain consumers' enjoyment: taste, texture, appearance

Acacia Gum in Biscuits

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STUDY ON ACACIA GUM IMPACT IN WAFERS

RECIPES

Ingredients	Control 1 100% sugar (%)	Control 2 30% sugar reduction Without Acacia Gum (%)	Trial 1 30% sugar reduction With 3% Acacia Gum (%)	Trial 2 30% sugar reduction With 6% Acacia Gum (%)
Flour	35	41	38	35
Sugar	20	14	14	14
Egg	20	20	20	20
Butter	25	25	25	25
Acacia Gum 396i	-	-	3	6

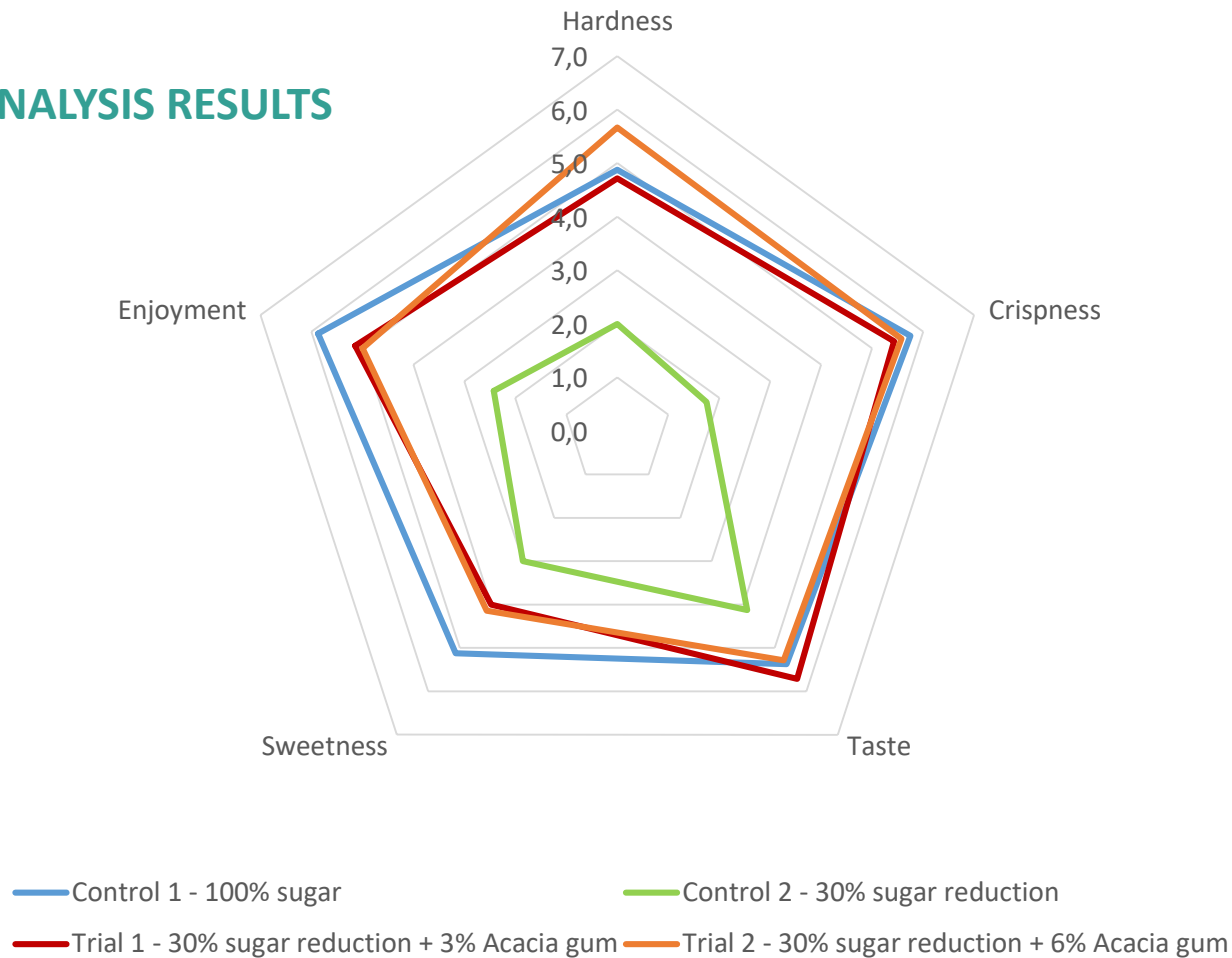
Acacia Gum in Biscuits

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STUDY ON ACACIA GUM IMPACT IN WAFERS

SENSORY ANALYSIS RESULTS



Acacia Gum in Biscuits

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STUDY ON ACACIA GUM IMPACT IN WAFERS

RESULTS

Acacia Gum addition:

- > **Fiber enrichment** → can allow a fiber claim
- > **Sugar reduction**

NEXT STEPS

- > **Higher sugar reduction with sweeteners (polyols, stevia, etc.)**
- > **Shelf life study and transport simulation**
- > **Other biscuit and sweet good varieties: muffins, cookies, etc.**

Conclusion

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AN INGREDIENT IN LINE WITH TODAY'S TRENDS



More fiber,
less sugar



Vegetarian/
vegan diets



Ethic food



Clean & clear
label



Healthy & organic
food

Conclusion

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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

Thank you for attending !

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