

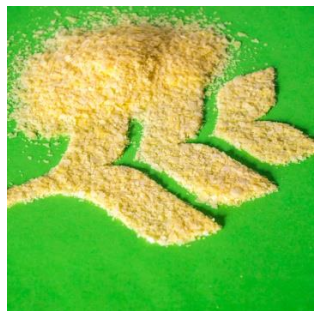
Tavola Rotonda AITA Ottobre 2023

A.A.D.E.A.

Materie prime, Ingredienti e Miscele di Qualità

**INNOVAZIONE DI INGREDIENTI
PER LO SVILUPPO DI PRODOTTI
IN LINEA CON LE ATTUALI ESIGENZE DI CONSUMO
27 OTTOBRE 2023**

beneo
connecting nutrition and health





AZIENDA DI PROPRIETÀ' E GESTIONE FAMILIARE, SUL MERCATO DA 90 ANNI



DISTRIBUZIONE DI INGREDIENTI E ADDITIVI ALIMENTARI



FOCUS SULL'INDUSTRIA ALIMENTARE ITALIANA



**> 350
INGREDIENTI E ADDITIVI
IN PORTAFOGLIO**

**> 1.500
AZIENDE ALIMENTARI
SERVITE**

PORTAFOGLIO PRODOTTI



AMIDI NATIVI, PREGEL E MODIFICATI DI

- RISO
- MAIS
- PATATA
- FRUMENTO
- TAPIOCA

HPMC

FIOCCHI DI PATATE

FARINE DI RISO

FRUTTA

- SUCCHI
- PUREE
- FREEZE-DRIED

COCCO RAPE'

SCIROPPI DI GLUCOSIO&FRUTTOSIO

MALTODESTRINE

POLIOLI

IDROCOLLOIDI

POLVERE DI CACAO

LATTE IN POLVERE

- INTERO
- SCREMATO
- SIERO
- PROTEINE DEL SIERO

CARAMELLO

SCIROPPI DI ZUCCHERO INVERTITO

ISOMALTULOSIO

UOVO IN POLVERE

- TUORLO
- ALBUME
- INTERO

DESTROSIO &FRUTTOSIO

PROTEINE VEGETALI

- CONCENTRATE
- TESTURIZZATE

GLUTINE

FIBRE VEGETALI

- SOLUBILI
- INSOLUBILI

POLIDESTROSIO

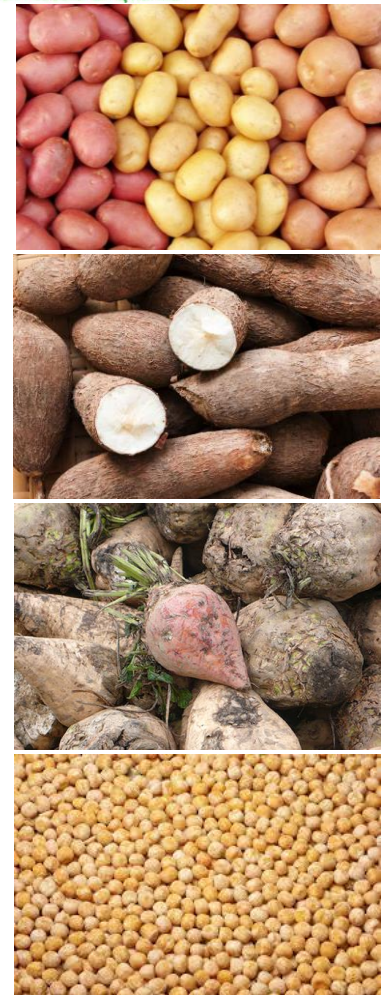
MISCELE E SEMILAVORATI LIQUIDI E IN POLVERE

LECITINA

- ACIDO CITRICO
- ACIDO ASCORBICO
- ACIDO TARTARICO

FOSFATI

GLICERINA& GLICOLE



BNEO's naturally sourced ingredients

Offer functional and physiological benefits


Functional Fibres

from chicory root

Orafti® Inulin and Oligofructose

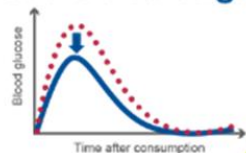
- Sugar reduction
- Fat reduction
- Calorie reduction

Improve digestive health:

- Fibre-enriched
-  prebiotic



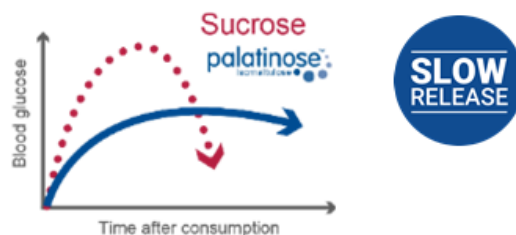
Reduce the blood sugar levels*



Functional Carbohydrates

from sugar beet

- **Palatinose™** (isomaltulose) is a healthy alternative sugar



Isomalt the only sweetener exclusively derived from sugar beet



Specialty Rice Ingredients

Rice starch, rice protein and rice flour

- **Natural***: for clean label & organic products
- **Free from:** Gluten, dairy, eggs, additives (non-GMO)
- **Nutrition:** Highly digestible, suitable for fat replacement, hypo allergenic
- **Structure & stability**
- **Texture:** crispy, crunchy, brittle, creamy, succulence



Functional Proteins

from wheat, faba, ...

Vital Wheat Gluten (VWG)

- Bakery, Petfood and Feed
- Technical and nutritional benefits

Faba bean

- Egg replacement
- Dairy-free solutions
- Meat & fish alternatives
- Bakery solutions



Textured Wheat protein (TWP)

- Wheat based meat & fish alternatives
- Dry extrusion



Meatless®

- Meat & fish alternatives
- Various raw materials possible
- Based on hydrocolloid technology



BENEIO Specialty Rice Ingredients

Locations



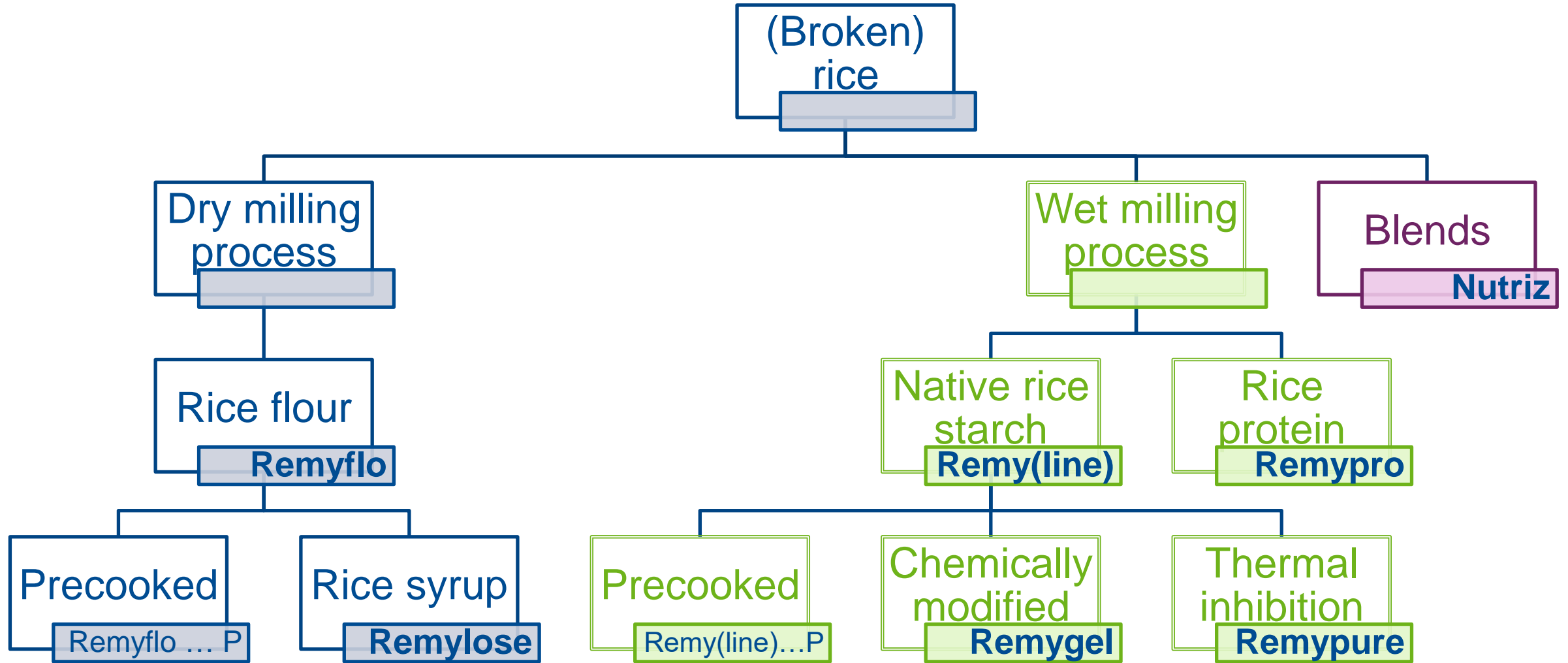
Wijgmaal (BE)



Confienza (IT)



- Worldwide **N°1** producer of **rice starch**
- Worldwide **N°1** non-Chinese producer of **food grade rice protein**



T - time

RETORTING
(121°C - long time)

UHT
(>121°C - short
time)

PASTEURISATION
(<100°C)

pH

ACID

NEUTRAL

shear

COLLOID MILLS

HIGH SHEAR
MIXERS

PUMPS

APPLICATION



Dressing



Baby food jar

2nd generation
functional native
rice starch



Fruit
preparation

1st generation
functional native
rice starch

Dairy
dessert



Native rice starch



Sauce



Meat

BENEO Functional proteins - key activities

Vital Wheat Gluten



Wheat



FABA Bean



Faba



Textured Wheat Protein



Wheat



Meatless®



Multiple raw materials



Rice protein



Rice



Wheat Protein Powder

Faba Proteins & Flour

Dry extruded wheat protein

Texturizing solutions

Rice Protein Powder



Bakery/ Aquafeed

Protein enrichment

Meat/Fish alternatives

Hydrocolloid based

Protein enrichment

Dairy/Bakery/Feed

Meat/Fish alternatives

Cereals/Bakery/Petfood



Meat & fish alternatives with Meatless®

The company

- Located in Goes, the Netherlands
- Delivering textured plant-based ingredients since 2005
- **Unique hydrocolloid technology**
- Part of BENEIO since May 2022
- Strictly B2B
- Worldwide distribution



Meat & fish alternatives with Meatless®

Unique benefits of Meatless® flakes



- Hydrocolloid-based texturing solutions => irregularly formed flake
- High flexibility & variety in raw materials
- Particle size: **fine** (≤ 10 mm*) and **coarse** (2-20 mm)



- Colour: ranging from **very white** to **brownish**, depending on the raw material
- **Clean taste**
- Protein content is depending on the type

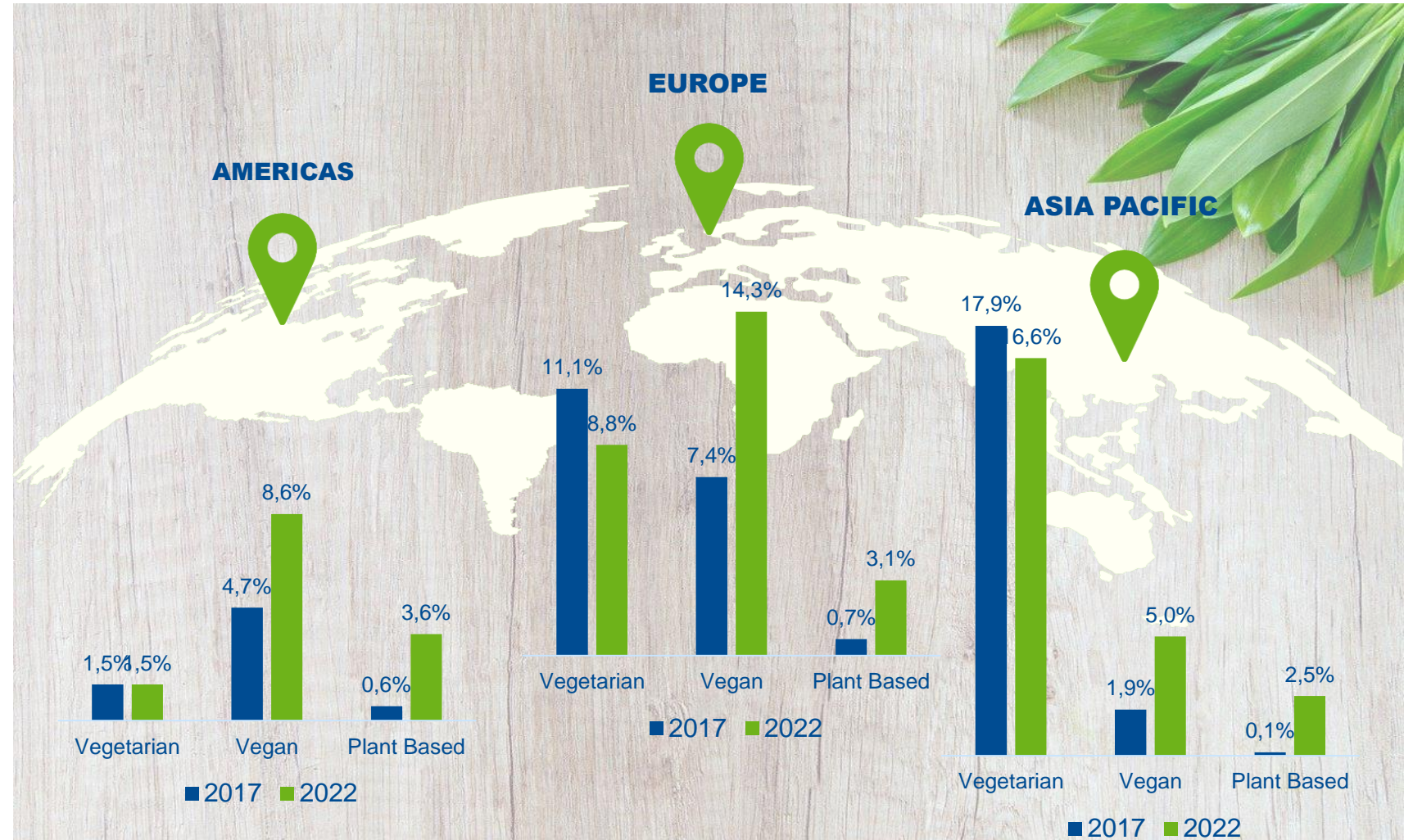


* For frozen fine flakes ≤ 10 mm; for dehydrated fine flakes ≤ 3 mm

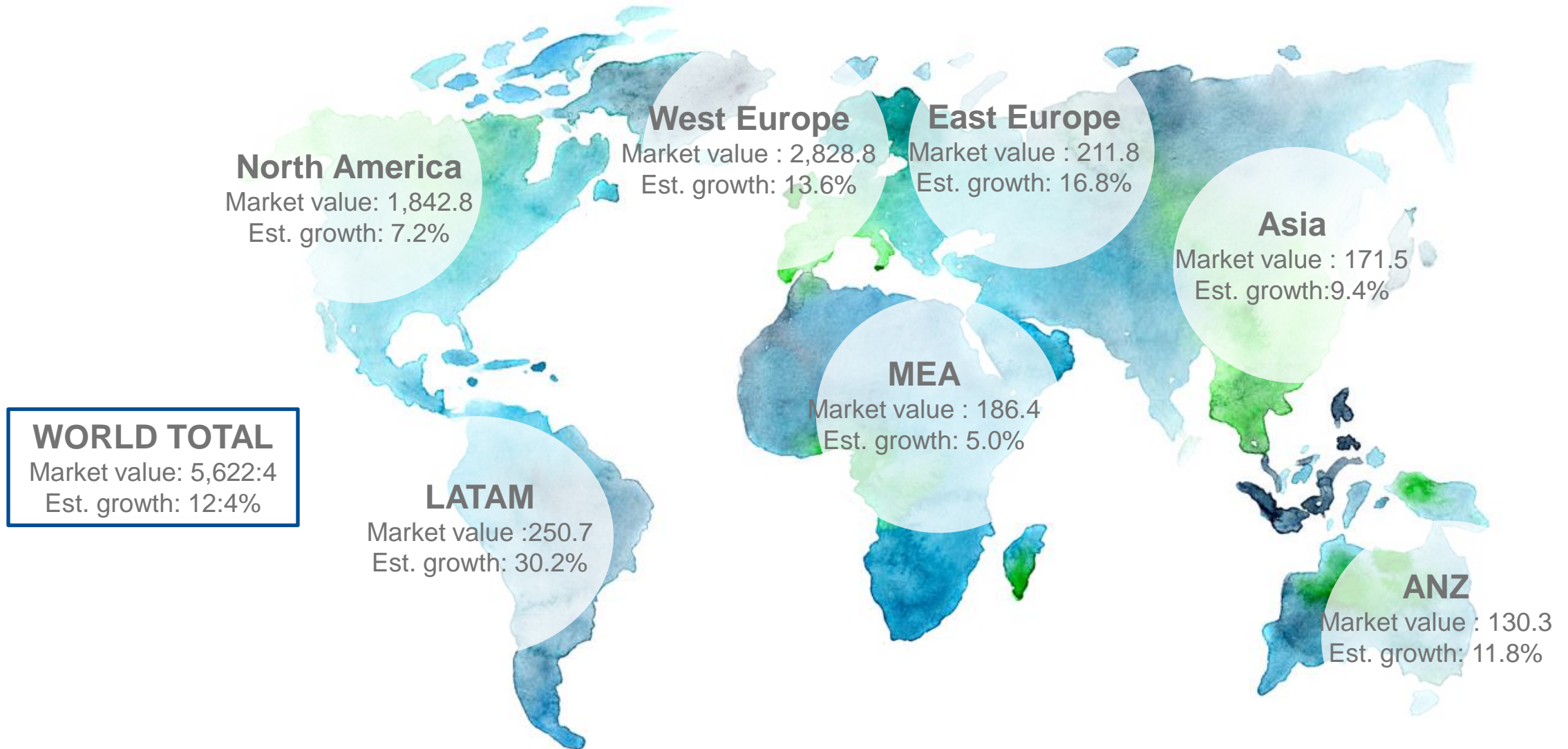
Consumer interest in plant-focused products and diets is high



Nearly 6 in 10 consumers across the globe are **interested in plant-based foods and beverages**¹



Market overview of Meat & Fish alternatives

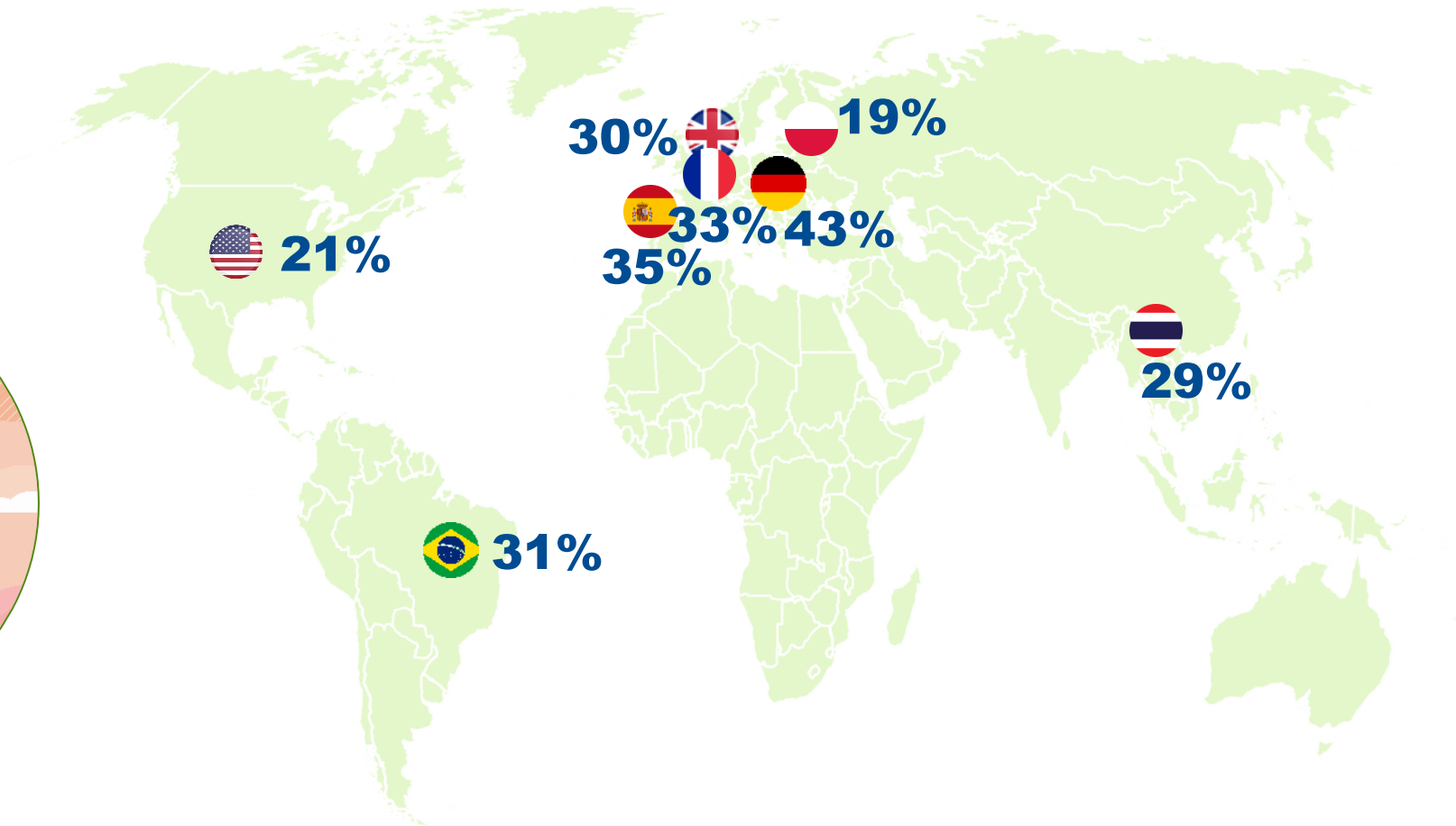


The market for a pro-plants diet is bigger than Vegan and Vegetarian

10%
Vegan
Vegetarian
Pescatarian

30%
Flexitarian

“I am a flexitarian”

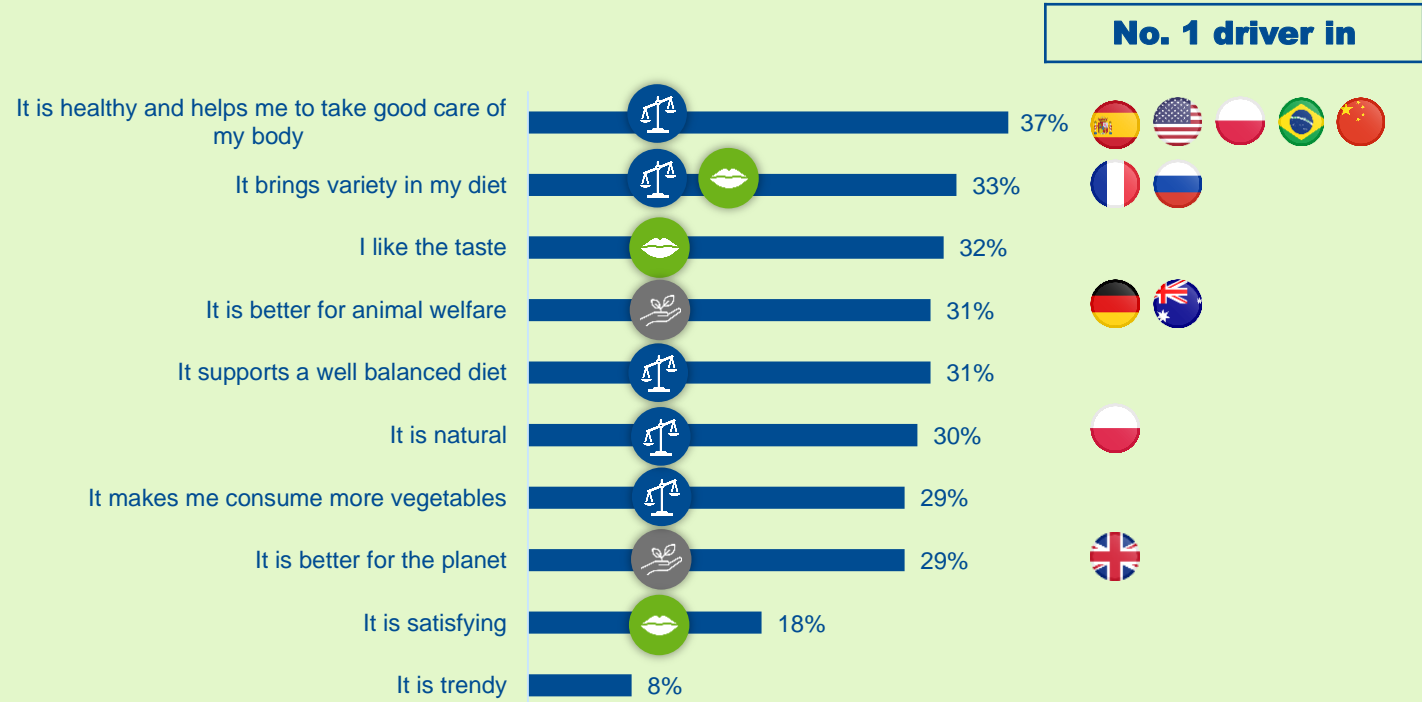


What motivates meat & fish alternative buyers?



4
PLANTS MADE CONVENIENT

For what reasons do/would you buy plant based alternatives for meat & fish? (Top 10)



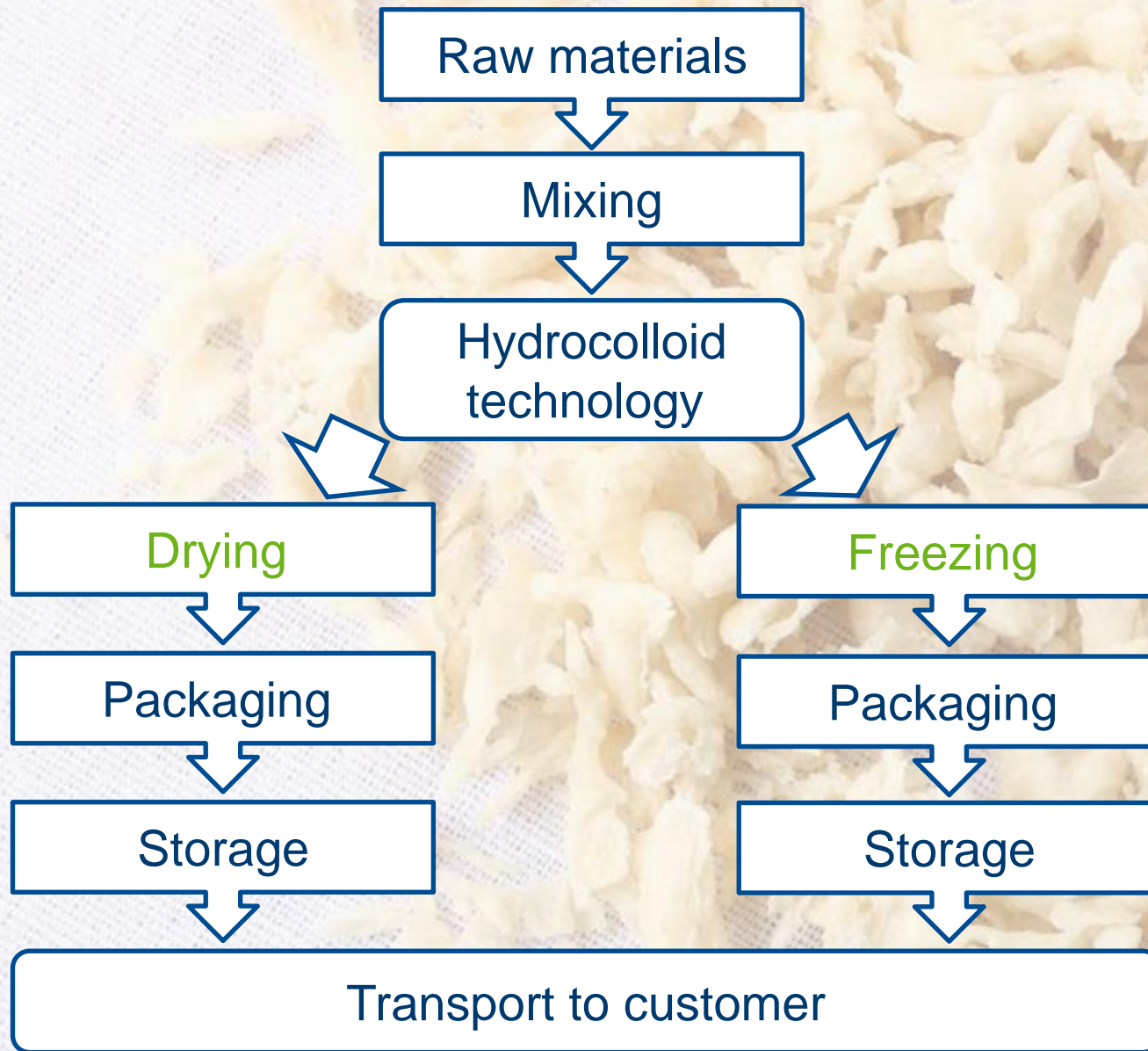
BALANCED DIET related
 TASTE related
 ENVIRONMENT related

Meat & fish alternatives with Meatless®

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- Fast scalable
- Not dependent on the functionality of proteins: different raw materials possible



Wheat



Tjoena



Pea

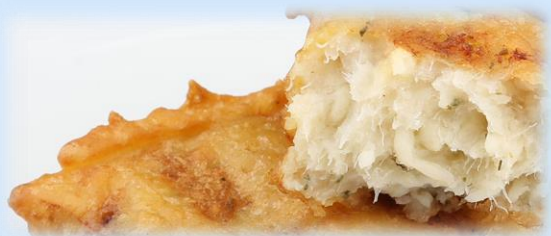


Faba bean



Rice

- Dry: Water Holding Capacity (WHC) and heat stability
- White colour available
- Hypo allergenic available
- Flexibility in raw materials
- Price competitive in wet texturates
- Clean taste
- Frozen ingredients: Ready-to-use
- Low processed → Low carbon footprint
- Simple labelling



Meatless® ingredients

Applications: Meat & fish alternatives



Hybrid and Vegan burger



Vegan nugget



Vegan Tjoena pizza



Vegan spread

And many more ...



Meatless® Chicken Chunks - Patent pending



Meatless® minced meat



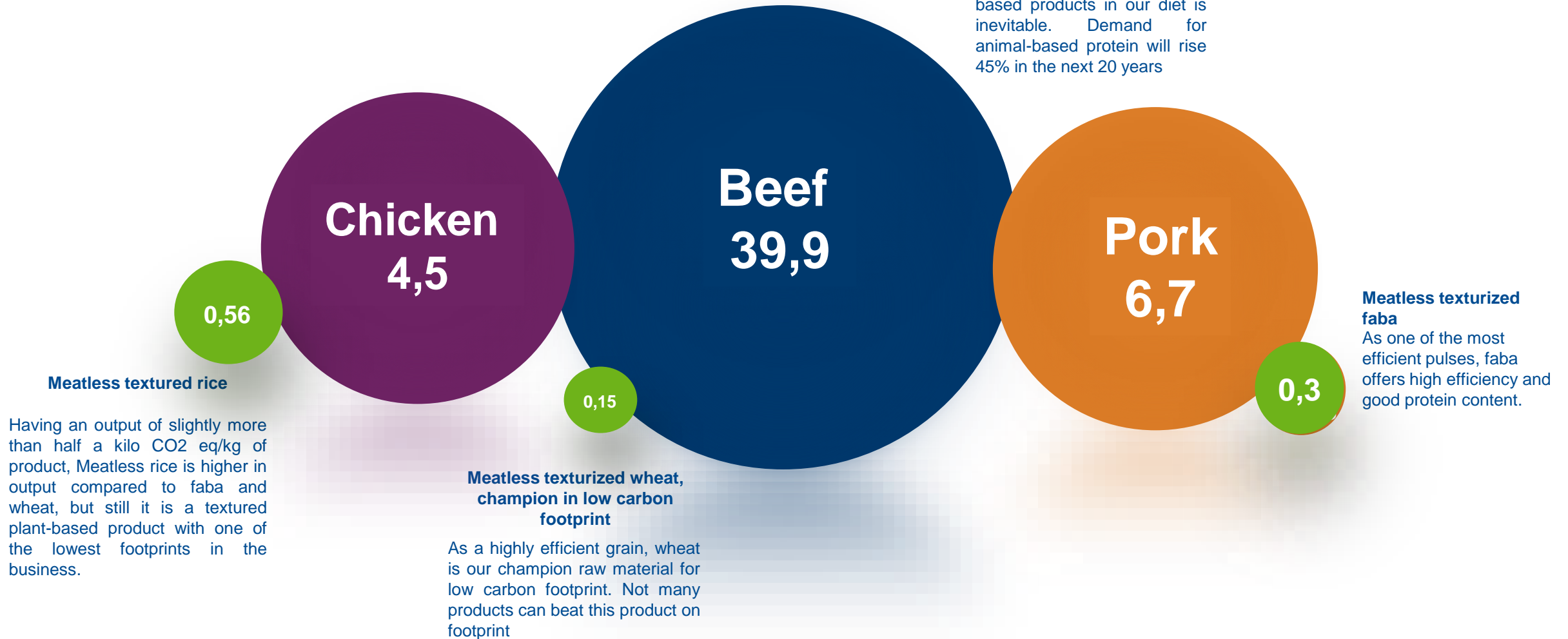
Vegan Fish sticks

Meatless® ingredients

Sustainability – carbon footprint

Meat reduction is inevitable

The necessity to produce more food in near future means a reduction of animal-based products in our diet is inevitable. Demand for animal-based protein will rise 45% in the next 20 years



Meatless® ingredients

A unique position in the market of textured products



	Mycoprotein	Powerheater	Dry extrusion	Hydro colloids	High-moisture extrusion
Price	Medium	Medium	Medium	Medium	High
Scalability	+++++	+++	++++	+++++	+
Water holding capacity	++	+++	+++	++++	+++
Protein content	++	+++	+++++	++ (+)	++++
Raw materials	Glucose	Mainly soy or wheat	Mainly wheat, pea and soy	Flexible	Soy only, some pea
Hypo Allergenic	available	available	No, except pea and faba	available	No
Easy to process	Frozen	Frozen	Only dehydrated	Frozen & dehydrated	Only frozen

The consumer today is hungry for more information...



Globally **64%** of consumers **reads labels** on food packages

When shopping for a new product **53%** of consumers say to **read the ingredients list**

1 in 3 consumers around the globe said to have **increased their research on ingredients** over the last year

People around the globe are cleaning up their diet

**WE WANT
THE RECOGNIZABLE**

52%

of consumers in Mexico usually/always chooses foods/beverages because they contain only ingredients they recognize

NO ARTIFICIALS

61%

of German consumers intentionally avoids foods/beverages with artificial ingredients and look for natural products

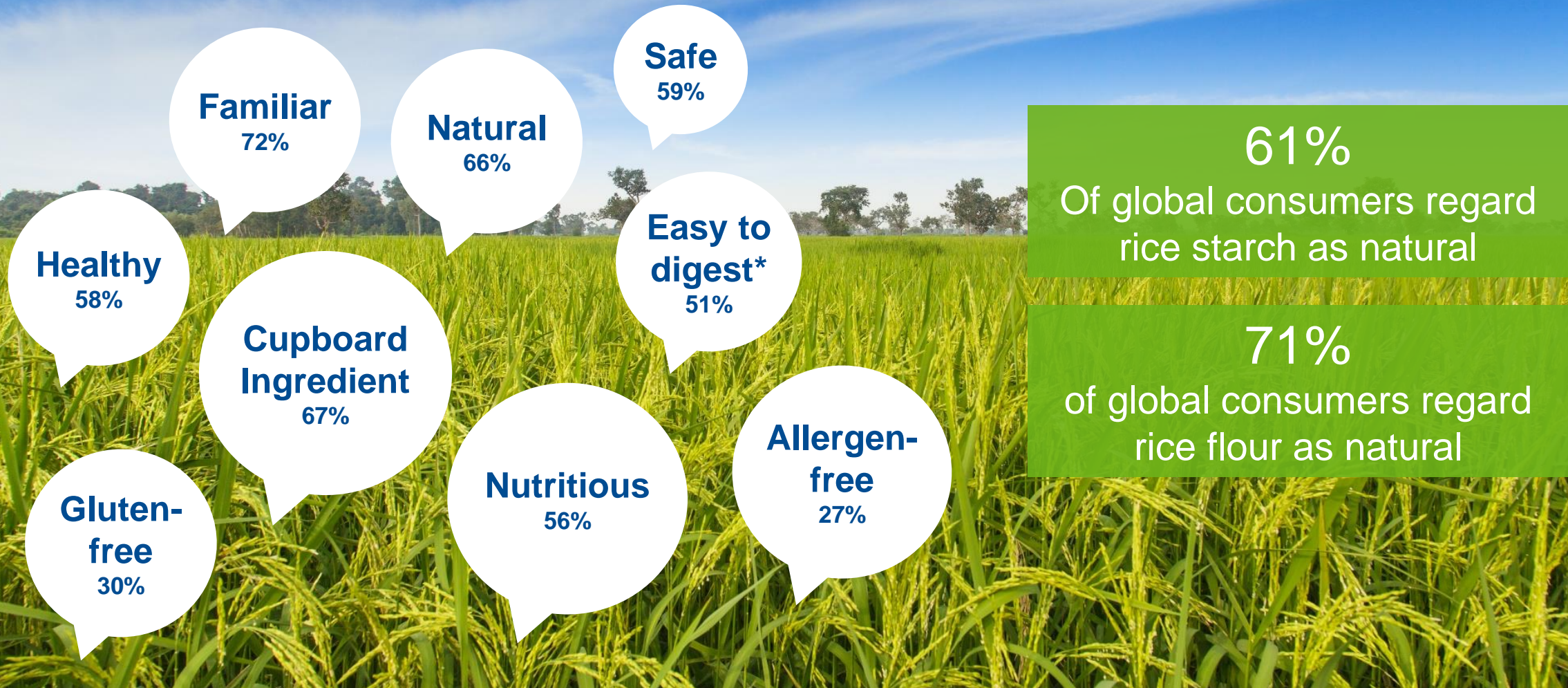
NATURAL = HEALTHY

99%

of consumers in India say that using natural ingredients makes foods and beverages seem a lot/somewhat healthier

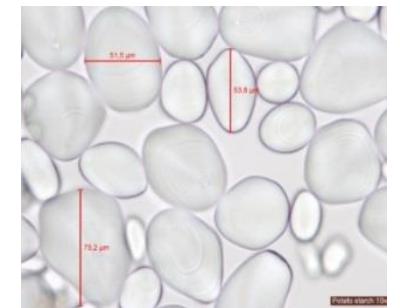
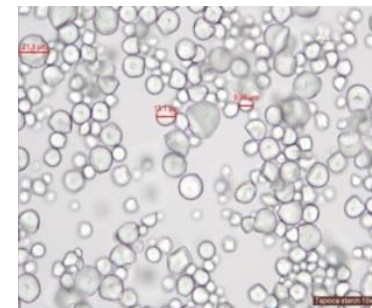
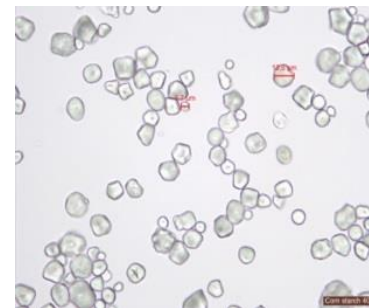
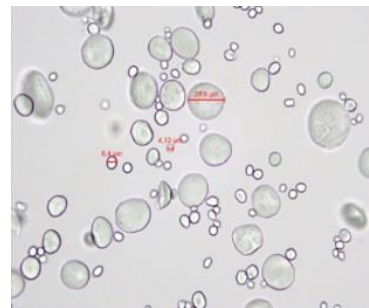
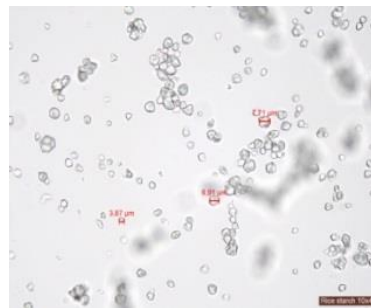
Rice is perceived as a familiar and natural product

Q: Which of the following characteristics would you associate with these ingredients? **RICE**



What's unique about rice starch?

	Rice starch	Wheat starch	Maize starch	Tapioca starch	Potato starch
Granule size (µm)	2 - 8	3 - 40	15 - 25	15 - 35	10 - 80
Granule shape	hexagonal	round lenticular	hexagonal (round)	round truncated	oval
Colour	very white	greyish white	yellowish white	greyish white	white
Taste	neutral	cereal taste	protein taste	light off taste	potato taste
Gel structure	soft and creamy	firm	firm	sticky	sticky



T - time

pH

shear

APPLICATION

RETORTING
(121°C - long time)

UHT
(>121°C - short time)

PASTEURISATION
(<100°C)







ACID

NEUTRAL

COLLOID MILLS

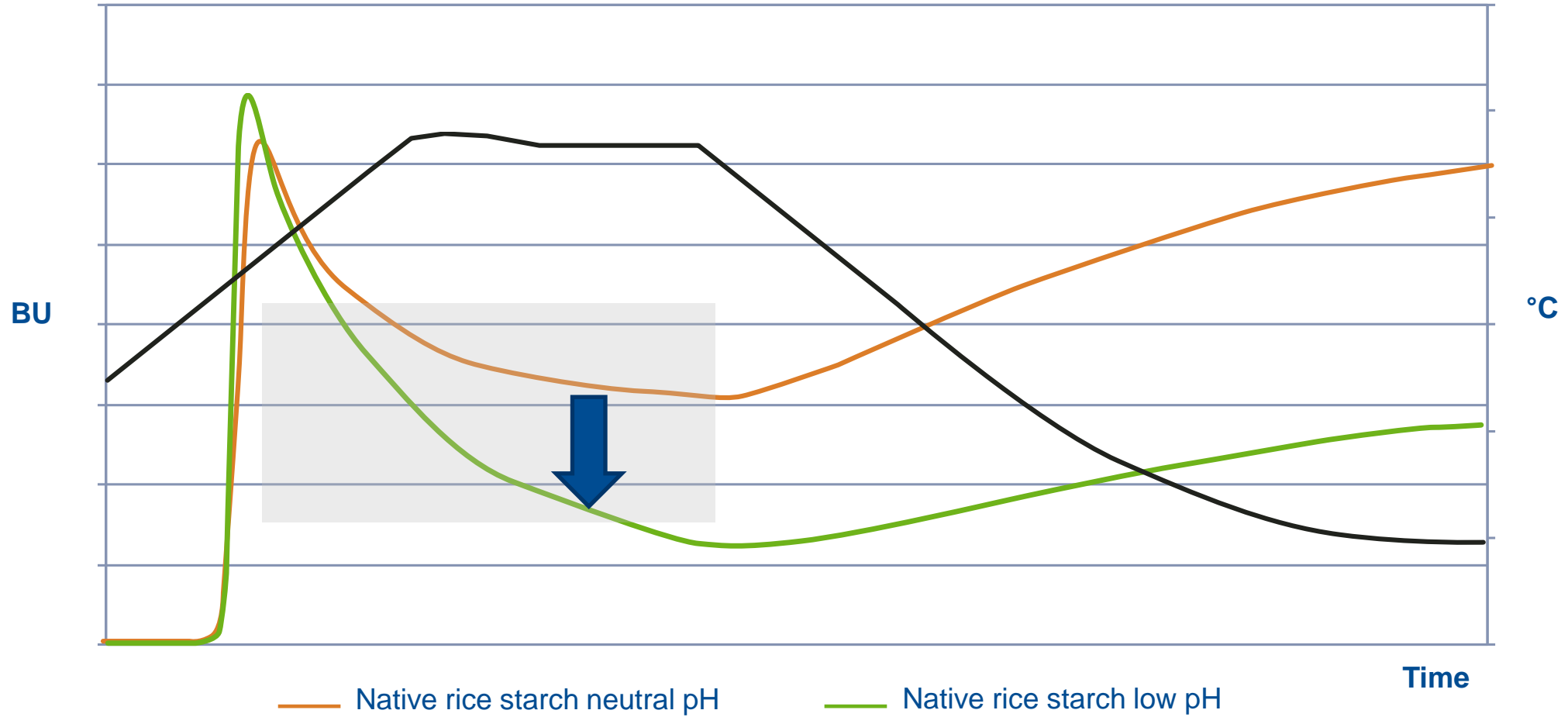
HIGH SHEAR MIXERS

PUMPS

 <p>Dressing</p>	 <p>Baby food jar</p>	<p>2nd generation functional native rice starch</p>
 <p>Fruit preparation</p>		<p>1st generation functional native rice starch</p>
 <p>Dairy dessert</p>		
 <p>Sauce</p>	 <p>Meat</p>	<p>Native rice starch</p>

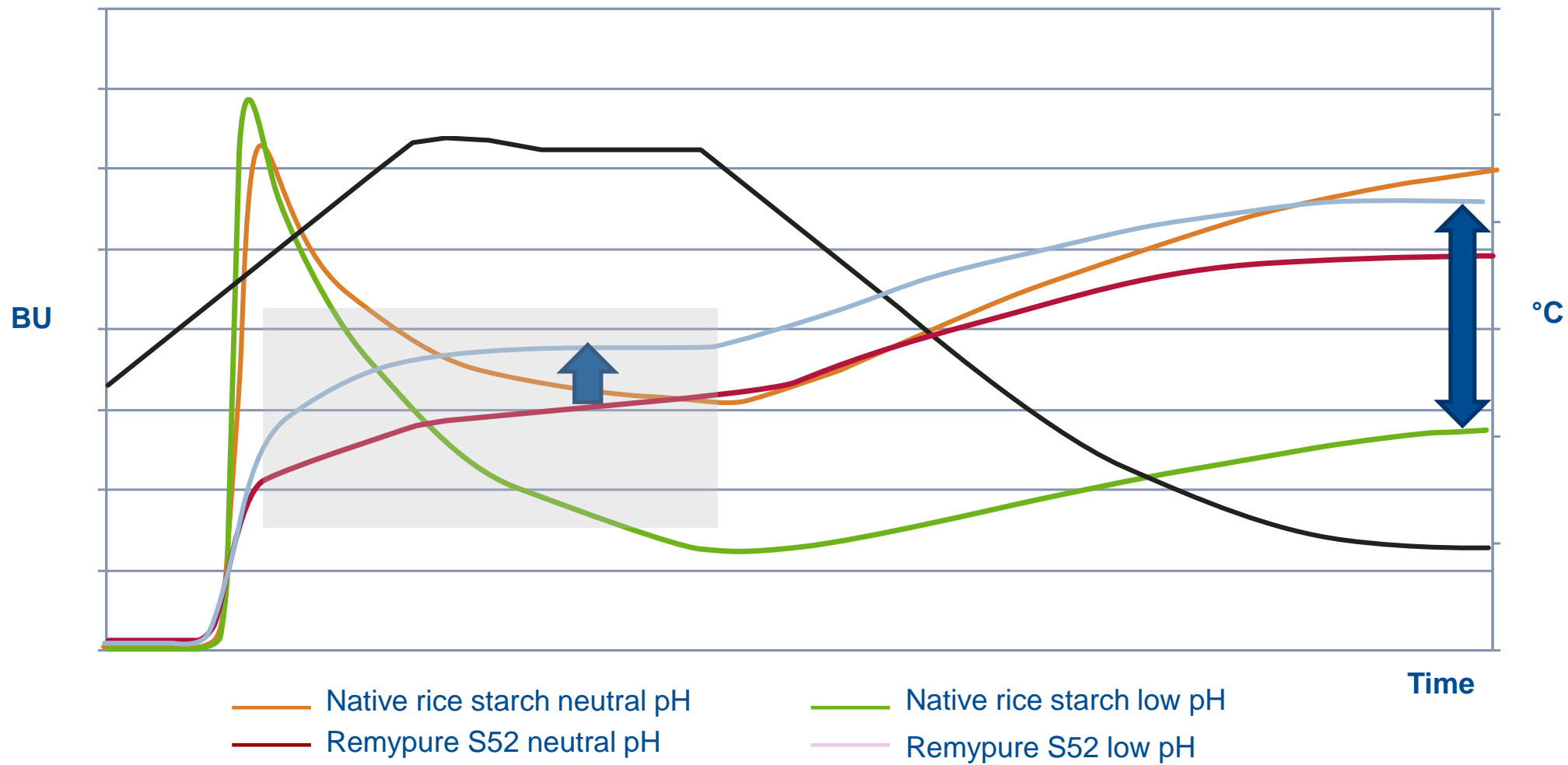
Remypure

Improved functionality



Rempypure

Improved functionality



Bring clean textures into spoonable dressings

Prototype recipe

INGREDIENTS (%w/w)	Test recipe
Water	57.0
Oil	25.0
Remypure S52	5.5
Vinegar	4.0
Egg yolk powder	3.0
Minor ingredients (e.g. sugar, mustard, salt, preservative)	q.s.
TOTAL	100.0

Key advantages:

- Remypure S52 is used as **clean label texturiser**
- Process stable solution
- Very nice & smooth texture
- Pleasant taste profile





- European leader in textures for whitefish imitation
- Based on whole food rice.
- In 2022, Meatless has also introduced a cannable tuna flake based on combination faba bean, pea, quinoa and rice.

Meat & fish alternatives with Meatless®

Vegan fish stick imitation: Prototype recipe

INGREDIENTS (% w/w)	Test recipe 1	Test recipe 2
Meatless® TRF Fine	79.00	-
Meatless® TRF Coarse	-	79.00
Water	15.23	15.23
Meatless® Vegan Binding	4.00	4.00
Flavour ¹⁾	1.00	1.00
Salt	0.65	0.65
Flavour ²⁾	0.12	0.12
TOTAL	100.00	100.00

Key benefits:

- Textured rice flake is used as **fish replacer**, while Meatless® Vegan Binding is improving the cohesiveness of the mass & bite of final product
- Depending on the **particle size** of Meatless® TRF (**Fine or Coarse**), the vegan fish sticks have inside a slightly different structure
- **White** colour inside and clean taste (no off-taste)
- **Vegan** and **freeze/thaw stable** solution
- Different nutrition claims** possible such as low fat, source of fibre



Meat & fish alternatives with Meatless®

Vegan fish stick imitation: Process

- Add Meatless® TRF Fine or Coarse in a Hobart bowl, followed by all other ingredients.
- Mix for 2 min at the lowest speed.
- Mix for 1 min at speed 2.
- Form patties in the desired shape.
- Dip patties into a batter¹⁾ and coat with bread crumb²⁾.
- Pre-fry in a deep fryer (40 s, 180°C) and store frozen.



Mass after 2 min mixing at lowest speed



Mass after 1 min extra mixing at speed 2

Meat & fish alternatives with Meatless®

Vegan mayo tjoena: Prototype recipe (MEA_ALT_020_EU)

INGREDIENTS (% w/w)	Test recipe
Meatless® TTHP	52.60
Vegan mayonnaise ¹⁾	12.00
Tomato ketchup ²⁾	12.00
Red onions	7.00
Silver onions	7.00
Pickles	6.00
Capers	1.50
Tuna flavour ³⁾	1.50
Salt	0.40
TOTAL	100.00
<i>Energy (kJ/kcal)</i>	<i>682/163</i>
<i>Protein (g/100 g)</i>	<i>10.5</i>

Key benefits:

- Textured tjoena flake high protein is composed of an unique combination of raw materials* making it a perfect **replacer of canned tuna**. It provides a **firm** texture, good **elasticity** & nice **colour**
- **High protein** claim** is possible to make because of high protein content (18.8 g/100 g) in Meatless® TTHP
- **Vegan and tasty** solution



¹⁾ Vegan mayonnaise (Hellmann's); ²⁾ Tomato ketchup (Heinz); ³⁾ Natural tuna flavour vegan – 382410 (Food ingredients & Specialties); * Combination of pea protein, rice protein, faba bean protein and protein rich quinoa flour;

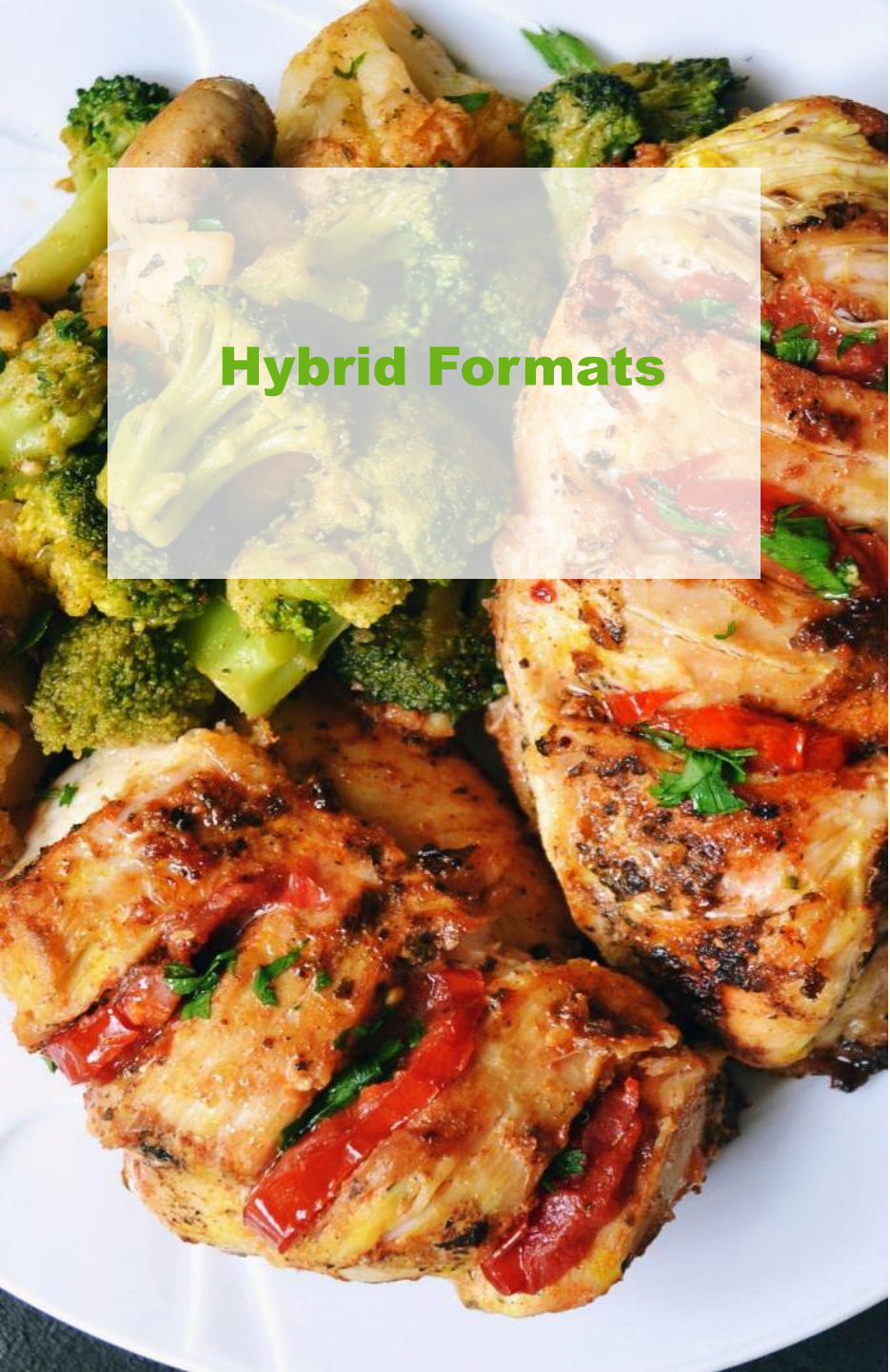
** Depending on local legislation



Meatless® Chicken Chunks*:

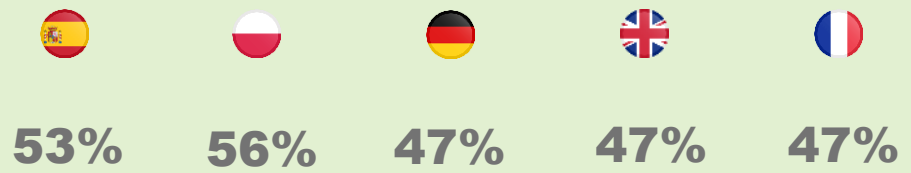
- Meatless® hydrocolloid technology in combination with mycoprotein
- Irregularly formed pieces: max. 3 cm thick; max. 4 cm long
- Protein content: ±13-14%
- Nice texture & juiciness
- Natural taste with a mild chicken aroma
- Natural colour, off white or off yellow
- Low processed => low carbon footprint, sustainable
- Frozen storage
- Ready-to-use product => easy to prepare (e.g. defreeze the chunks, bake at high temperature in oil, add spices according to your preferences)

**Patent pending*

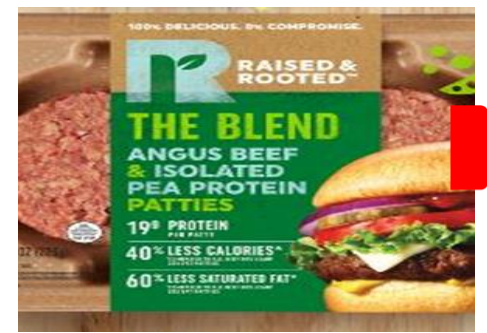


Hybrid Formats

% European consumers interested in products combining meat and plant-based proteins



Mintel Hybrid products could attract new consumers to the category



Meat & fish alternatives with Meatless®

Hybrid beef burger (15% replaced): Prototype recipe (MEA_HYB_002_EU)

INGREDIENTS (% w/w)	Reference	Test recipe
Beef lean meat (2% fat)	94.25	80.25
Meatless® TRF Coarse	-	14.00
Onions	3.00	3.00
Powder mix of spices and herbs ¹⁾	2.75	2.75
TOTAL	100.00	100.00
<i>Fat (g/100 g)</i>	<i>2.0</i>	<i>1.7</i>
<i>Fibre (g/100 g)</i>	<i>0.2</i>	<i>0.5</i>
<i>Protein (g/100 g)</i>	<i>21.3</i>	<i>18.4</i>

Key benefits:

- Meatless® TRF Coarse is used to replace 15% of the meat, resulting in a **hybrid** burger with a **more juicy mouthfeel** compared to the reference
- Depending on local meat prices, **cost reduction** can be possible
- **Freeze/thaw stable** solution
- Pleasant taste & texture



1) Hamburger hambí special (Solina Netherlands BV)

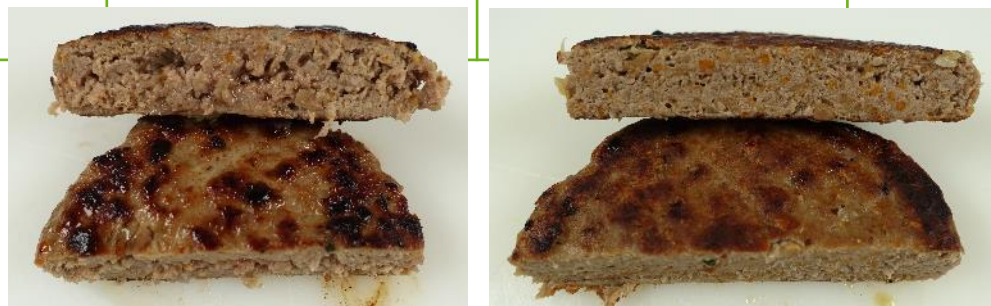
Meat & fish alternatives with Meatless®

Hybrid beef burger (40% replaced): Prototype recipe (MEA_HYB_003_EU)

INGREDIENTS (% w/w)	Reference	Test recipe
Beef lean meat (2% fat)	94.25	57.25
Meatless® TFF Brown Coarse	-	27.00
Water	-	7.00
Meatless® Vegan Binding	-	3.00
Onions	3.00	3.00
Powder mix of spices and herbs ¹⁾	2.75	2.75
TOTAL	100.00	100.00
<i>Fat (g/100 g)</i>	<i>4.1</i>	<i>3.5</i>
<i>Fibre (g/100 g)</i>	<i>0.2</i>	<i>2.3</i>
<i>Protein (g/100 g)</i>		

Key benefits:

- Delicious **hybrid burger** by replacing 40% of the meat by Meatless® TFF Brown Coarse, which results in a burger with **firm** texture, good **mouthfeel** and nice **colour**
- Meatless® Vegan Binding is keeping the mass nicely **together** and contributing to the **bite** of the final product
- **Cost reduction** possible, depending on local meat prices
- **Freeze/thaw stable** solution
- **Nutrition claim*** possible such as source of fibre



¹⁾ Burgermix with salt A376920 (Solina Netherlands BV);
* Depending on local legislation



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