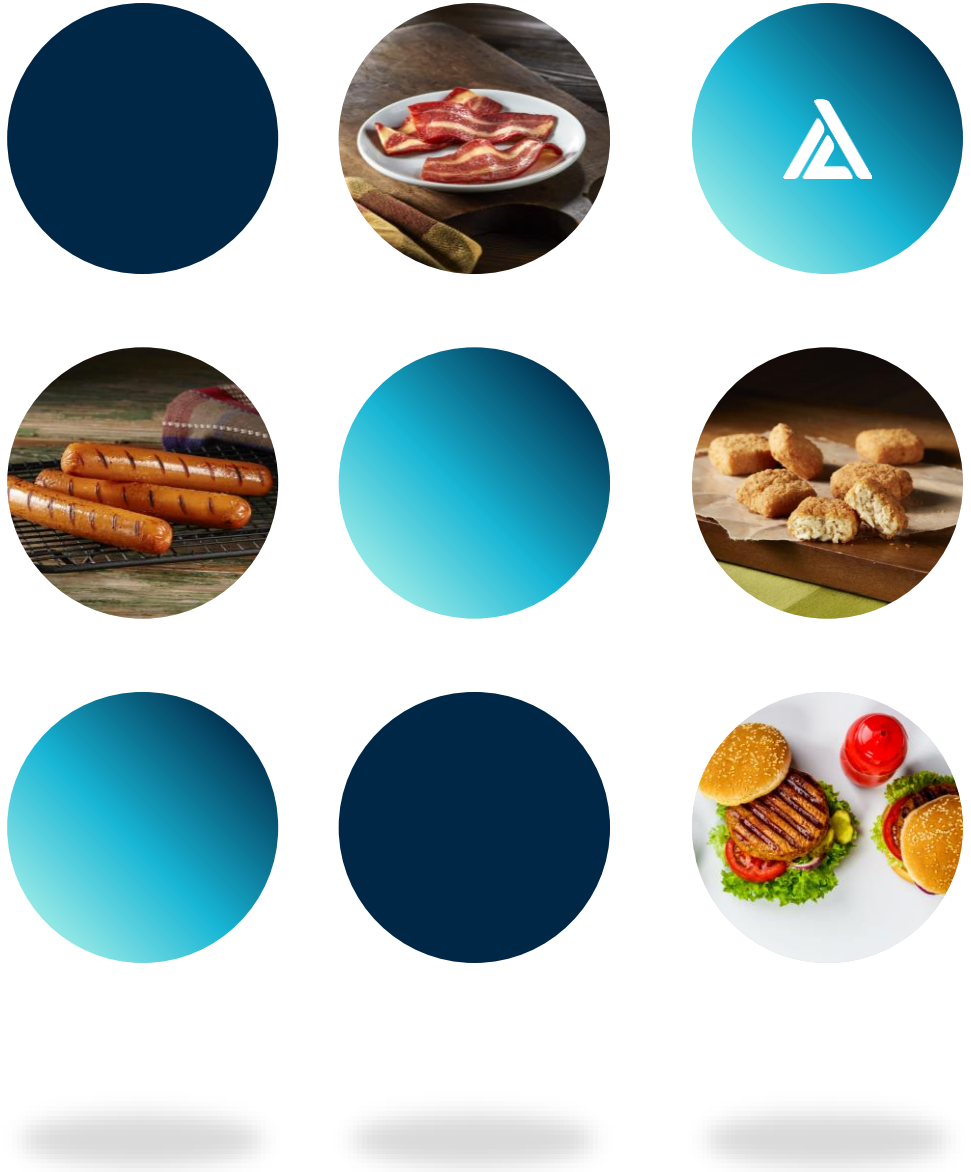
Intro to Alternative Protein

07.09.23



01 **Market Overview**: Market Sizing

02 **Market Overview**: Is the Plant-based Category Dead?

03 **Market Study**: Plant-based Launches in Europe

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The Plant-based Meat Market in Europe

Sustainability is a key driver of the plant-based meats market in Europe with **27%** of flexitarians citing '**environmental concerns'** as their main reason for choosing plant-based meat alternatives.

Market Value 2021-25P

2.1Bn Euro 2021

3Bn Euro 2025 -P

CAGRs of up to 13%

In some regions.

The UK is the most established market followed by the DACH region.

Growth of this market is attributed to the rising/ **increasing vegan and flexitarian population** across the world.

46% of Europeans claim to be reducing their meat consumption.

- Gen **X,Y and Z** (post 1960s)
- **25%** of Europeans = 'flexitarian'
- Indexed towards **female** consumers

Substituting 5% of Germany's beef consumption with pea protein could save **8 million tonnes CO2e** annually...

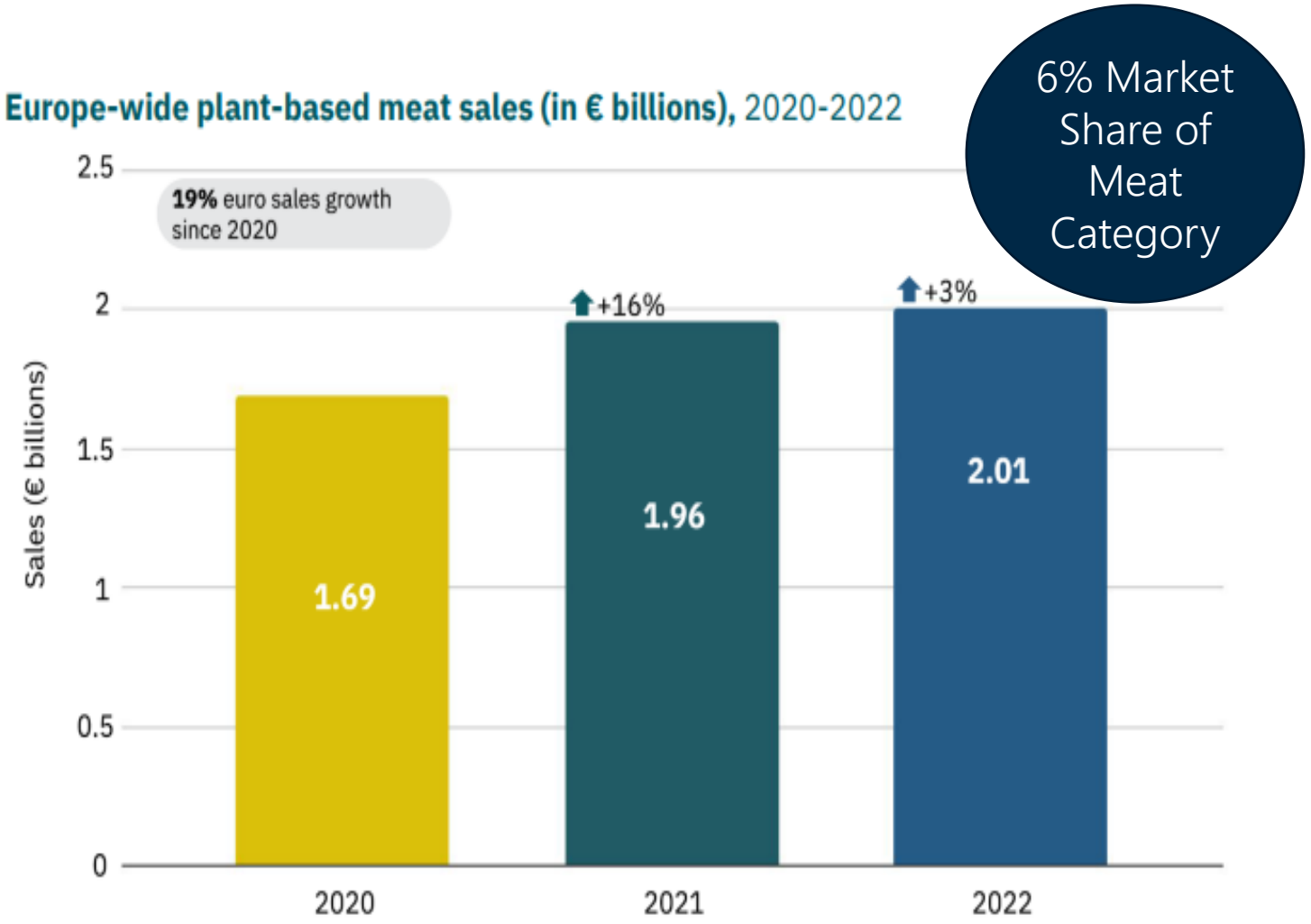
...The equivalent of taking **1.7million cars** off the roads of Europe for one year!

Sources: Global Data 2021

SmartProteinProject.eu (2021)

Saget et al. Journal of Cleaner Production (2021)

Is Plant-based Category Dead?



- The value of plant-based meat sales **grew by 19% between 2020 and 2022**, outpacing the growth of conventional meat sales by almost five times.
- **Unit Comparison:** While plant-based meat unit sales grew 21% between 2020 and 2022, conventional meat unit sales decreased by 8%.
- **Average price per unit**,. Plant-based meat prices increased by 1%, whereas conventional meat prices increased by 11%.

Source: GFI 2023

Plant-based Meats continue to grow driven by consumer demand

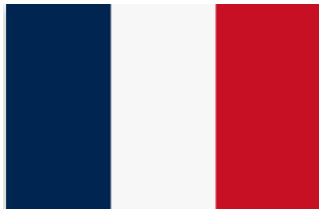
Europe and Russia market valued at > €2Bn

UK is most established market followed by DACH region.

High CAGRS>10% in Germany, France and Sweden.






Revenue (€)	€633M	€488M	€186M	€183M	€143M	€15M
CAGR 22-26	7%	8%	5%	4%	10%	3%

Source: Global Data 2022

2022/23 New launches Plant-based Meat Market Study

Pan European Plant-based Market Sweep

- ❖ Review of all plant-based meat / fish Alts launches Europe
- ❖ Timeline: January 2022 – June 2023

- ❑ Examine market dynamics
- ❑ New movers / players
- ❑ Emerging product categories
- ❑ Nutritional trends

and more

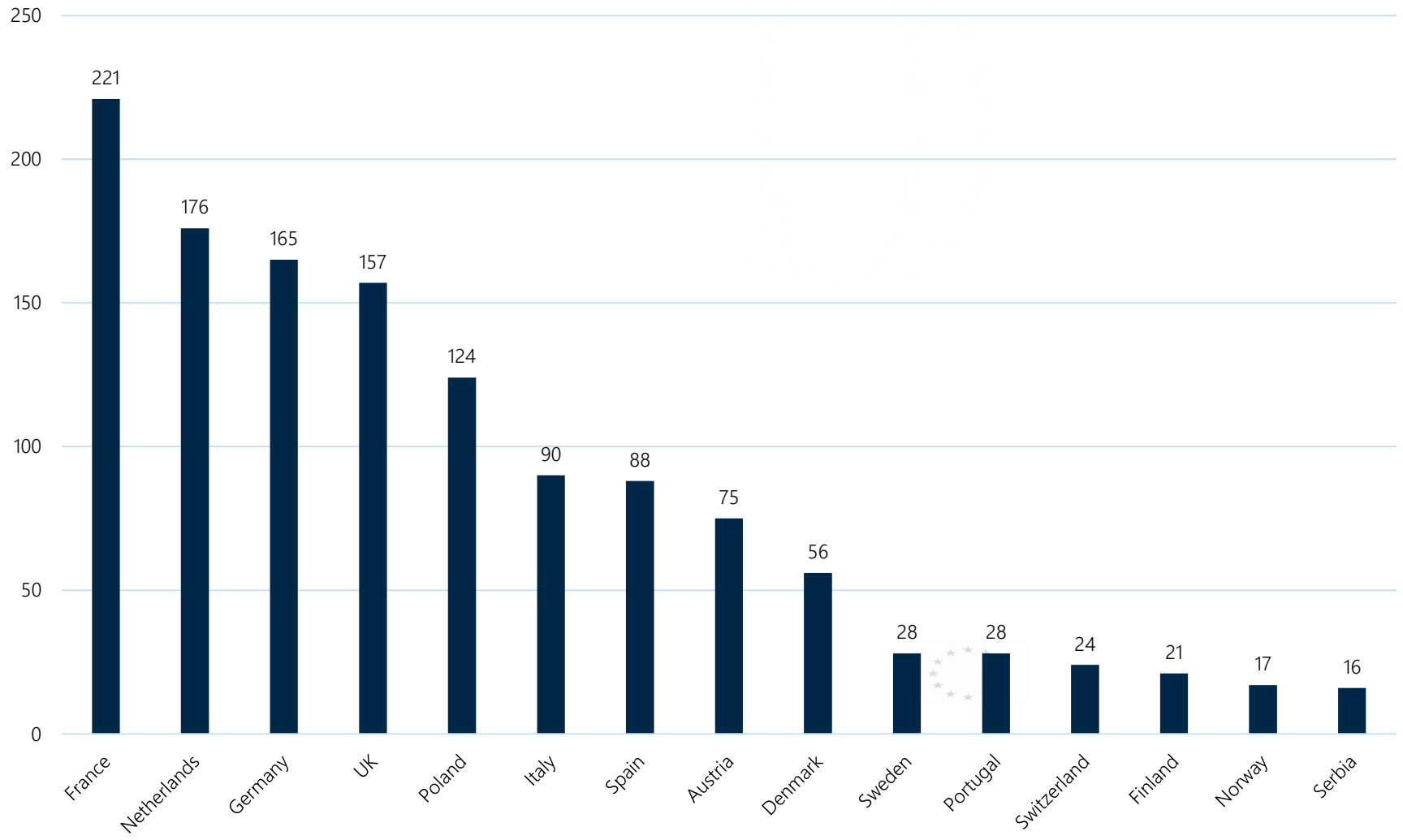
Source: Mintel 2023

Meat / Fish Alternative Launches in Europe

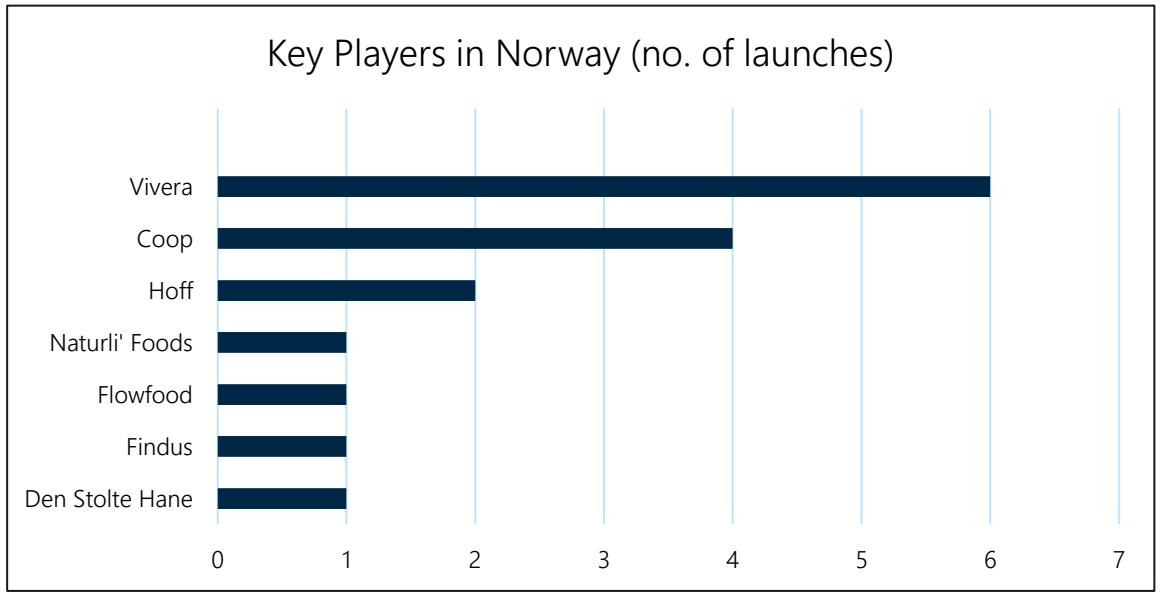
1373

Plant-based launches across Europe

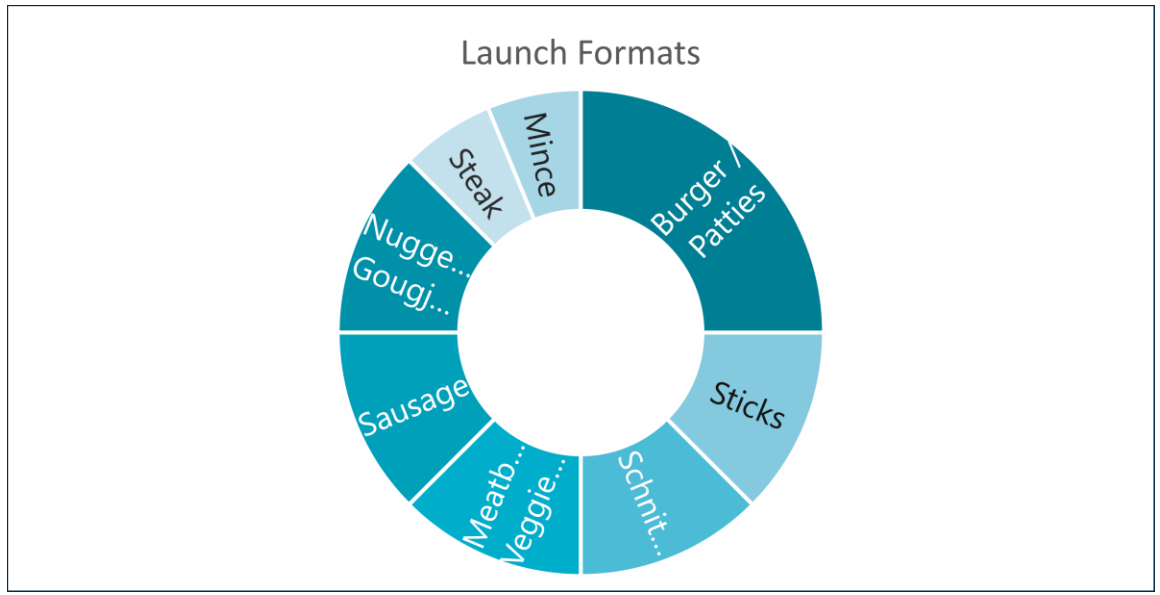
FR n=221
NL n=176
DE n=165
UK n=157
NO n=17

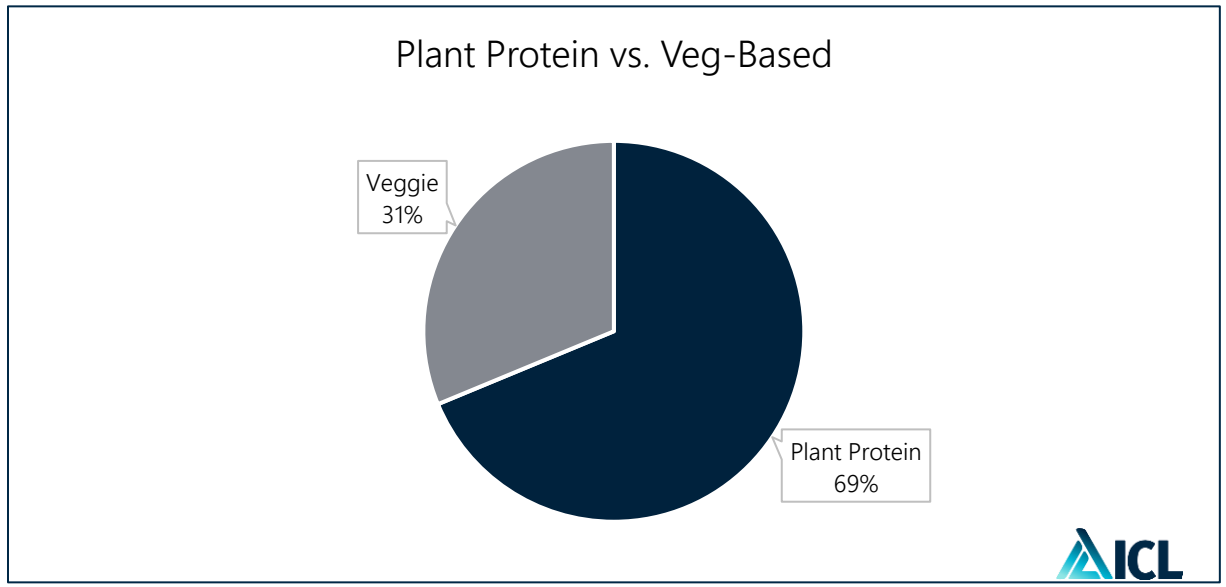


Meat Alternative Launches in Norway



Energy kcals/100g	213	199
Protein g/100g	14.8	11.6
Fat g/100g	10.3	10.5
Salt g/100g	2	1.3
Fibre g/100g	5.1	3.7





Key Trends Plant-based Market Trawl

	Taste & Texture	360° Health	Sustainability	Category Breakthroughs	Emerging Proteins
Consumer Insight	**Taste & texture are still King for consumers.** They are the main driver of repeat purchase.	Plant-based consumers are becoming more **nutritionally aware**. **Regional nutritional regulations** also informing the category	Many consumers are looking to reduce **carbon footprint.** Brands tapping into this trend and incorporating sustainable messaging and packaging in their products	More **choice** is a key consumer demand for this category. New opportunities for manufacturer are in the underdeveloped categories.	Not all proteins are created equal. Soya and wheat have dominated the market but **non-allergen and novel proteins** are emerging.
Market Example		 	 	 	

Rovitaris® Alternative Protein Portfolio

The Texture Experts

FIBERS	TEXTURATES	EMULSIONS	CHEESE ALTERNATIVES	VEGAN FLAVORS
ROVITARIS® PX 1016 **Premium texture for vegan light meat**	**ROVITARIS® PX 365, FBX 360** **Next generation texture for vegan beef and pork**	**ROVITARIS® HS 1000 series** **Powerful compositions without soy and gluten**	**BEKAPLUS® DV-LINE** **New generation technologies for vegan alternatives for cheese**	**TAROMA® V-LINE** **Premium flavor solutions for vegan/vegetarian meat or fish substitutes**
• Chicken Nuggets • Chicken Breast • Fish Filet • Fish Fingers • Popcorn shrimps • Scallops • Crab Cakes	• Burger Patties • Meat Balls (suitable for soups as well) • Ground Meat • Taco Meat • Breakfast Sausages • German 'Bratwurst'	• Hot Dogs • Frankfurter & Wiener Sausages • Deli Meats / Cold Cuts • Bacon	• Heat stable block/slices • Re-meltable block/slices • Cream Cheese • Processed Cheese • Mayonnaise	• Burger Type • Frankfurter • Chicken Nuggets • Mortadella • Cooked Chicken • Cooked Ham • Fish • Chicken • BBQ Meat • Onion Meat • Roast Meat

CONTINUOUSLY INCREASING OPTIONS

1. Fibers

Wet Textured Pea Protein PX1016

Benefits:

- Provides realistic meat-like texture and appearance
- **No pre-hydration** process needed, very easy handling
- Neutral taste; no off-notes in need of masking
- For use in nuggets, whole breasts, seafood selections, etc.

Finished Product

- Highly adaptable ingredient technology to achieve optimum texture
- Desirable mouthfeel resembling meat: succulence, flakiness
- Retains moisture and integrity during cooking and microwaving

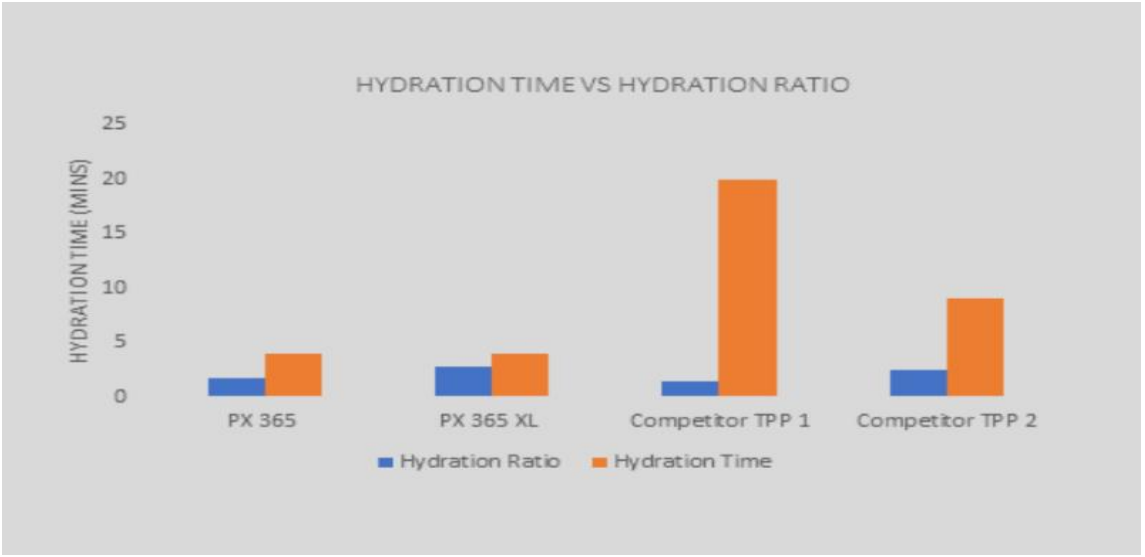
- ✓ Non-GMO
- ✓ Allergen-free
- ✓ Kosher and halal certified
- ✓ High satiety
- ✓ Reduced calories and fat compared to traditional products containing meat
- ✓ Comparable eating experience to traditional meat products

2. Texturates

Allergen-free dry textured protein

Benefits:

- Provides realistic meat-like texture and appearance
- Pea and fava bean based
- **Faster pre-hydration** than competitor products
- Neutral taste; no off-notes in need of masking
- For use in nuggets, whole breasts, seafood selections, etc.



ROVITARIS® PX 365 has more balanced relation between hydration ratio and hydration time compared to other texturized pea proteins on the market

- Hydration Ratio: The lower need for water yields higher protein after hydration
- Hydration Time: Shorter time improves on customer process time

3. Emulsions

Allergen-free functional blends for vegan cold cuts / deli meats and charcuterie



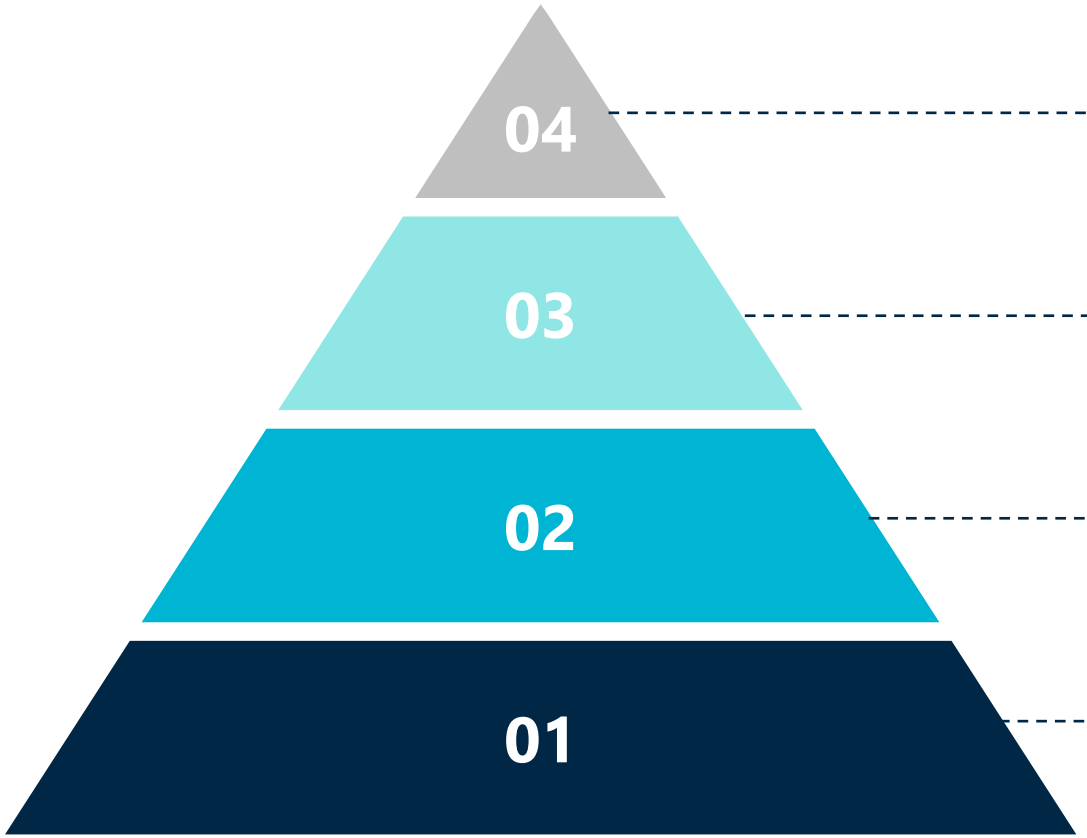


Benefits:

- Superior **all-in-one solution** to be applied in an **easy process** with **no special equipment** requires
- **Snappy bite** and **texture** that keeps integrity during refrigeration or frozen storage
- **Retains moisture** during cooking and grilling
- **Texture** can be modified in line with customer preference.

5. Taroma Flavours

Vegan suitable flavouring that are tested in application to deliver authentic meat-like sensory experience



Top-notes

Herbs and spices to deliver bespoke flavour profile

Culinary Direction

Roasted, boiled etc..

Chicken, pork, beef

Foundation Flavour

Creating more-ish, savoury flavour profile

Plant Protein Substrate

Pea or fava bean protein

Rovitaris® Application Examples

Delivering Authentic Meat-like Texture in a sustainable way

White Meat Alternatives

- Nuggets
- Schnitzel
- Tenders
- Chicken pieces

And more

Fish Alternatives

- Fish Finger
- Fish Fillets
- Scampi
- Shrimp

And more

Minced Meat Alternatives

- Burger
- Meat Ball
- Kofta
- Gyros

And more

Deli Meats / Cold Cuts

- Bacon
- Mortadella
- Plant-based ham

And more

Plant-based Sausage

- Merguez
- English Breakfast Sausage
- Bratwurst

And more

Vegan Frankfurter

Vegan frankfurter based on fava bean protein made from one-bag emulsion system.

Ingredients	Total %
Cold Water	76
Rovitaris® HS1025	12
Vegetable Oil	12
Total	100

Additional Ingredients	Total %
TAROMA® Frankfurter V	3

Meat(less) Balls

Allergen-free no-meat ball based on pea protein with excellent

taste and superior meat-like texture.

Ingredients	Total %
Water	65.2
ROVITARIS® PX 365	30
Taroma Roast Meat V	3.6
Caramel	0.8
Natural Beetroot Powder	0.4
Total	100

Binder	Total %
Water / Ice 50:50	80
Rovitaris MC 300	10
Vegetable Oil	10

Vegan Cold Cuts

Delicious vegan cold cuts with authentic pork-y and savoury notes

Ingredients	Total %
Water / Ice	75.5
ROVITARIS® HS 1031 V2	9
Vegetable Oil	15
Colour NR	0.5
Total	100

Additional Ingredients	Total %
TAROMA exper. V	3.5

Vegan Bratwurst

Our take on a traditional Bratwurst Sausage with pork-y and spicey notes.

Ingredients	Total %
Water / Ice	66.5
Rovitaris HS 1025 PG	13.5
Vegetable Oil	15
Total	100

Additional Ingredients	Total %
TAROMA Bratwurst V	5

Fishless Sticks

Crunchy vegan fish sticks with a crispy breadcrumb and light seafood flavour made with wet textured pea fibre

Ingredients	Total %
Water / Ice	80
Rovitaris MC 300	10
Vegetable Oil	10
Total	100

Additional Ingredients	Total %
Rovitaris PX 1016	76.5
Taroma Crab V	3.5

No Chick Nuggets

A perfect foodservice style nugget with a crispy coating and delicious more-ish and savoury chicken flavour

Ingredients	Total %
Water / Ice	80
Rovitaris MC 300	10
Vegetable Oil	10
Total	100

Additional Ingredients	Total %
Rovitaris PX 1016	77
Taroma Chicken V	3
Binder	20

Meat-free Schnitzel

Succulent schnitzel alternative with firm bite and meat-like texture.

Leverages our pea texturate and functional binding expertise to create authentic schnitzel texture.

Ingredients	Total %
ROVITARIS® PX 1016	79.75
Water	13.50
TAROMA® Chicken V	3
Vegetable Oil	2
ROVITARIS® MC 300	1
ROVITARIS® MC HS 300	0.75
Total	100

Vegan Bacon

Incredibly tasty, juicy vegan bacon alternative.

Emusion system technology combined with Taroma vegan flavours to create authentic bacon alternative

Red Layer Ingredients	Total %
Water	71.20
ROVITARIS® HS 1025 CP	16.80
Vegetable Oil	12
Total	100

White Layer Ingredients	Total %
Water	77
ROVITARIS® HS 1026 WL	8
Vegetable Oil	15
Total	100

Additional Ingredients	Total %
TAROMA® bACON	4

Thanks for Listening!

Find out more about Rovitaris™

Useful Resources:

1 ICL's Plant-based Meats Homepage

Vegan Formulations, Plant Protein Ingredients, ROVITARIS® BEKAPLUS® (iclfood.com)

2. ROVITARIS Video

https://www.youtube.com/watch?v=q6NS_RqWBL0

3. In Media: Rovitaris™ wins 2019 FI Protein Innovation Award

Fi Innovation Awards honor sustainable efforts, protein innovation | 2019-12-16 | Food Business News

Fi Innovation Awards winners (nutraceuticalbusinessreview.com)

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