



- **PROTEIN A VALUABLE INGREDIENT FROM THE STARCH INDUSTRY**



Marie-Laure EMPINET – ROQUETTE/STARCH EUROPE– PLANT PROTEIN SEMINAR - 18 November 2019

AGENDA

- 1 • The European Starch Industry
- 2 • ROQUETTE in brief
- 3 • Global food challenge
- 4 • Plant based protein food
- 5 • Conclusion

STARCH EUROPE, IN FIGURES



60.000
EU Farmers producing
24 Million
Tonnes of **RAW MATERIALS**

73 PLANTS
in **20** EU Members States providing
16.000 JOBS
and revenues of **€7.4 Billion**



PROTEINS & FIBRES

5.3M Tonnes

STARCHES
(Native & Modified)

5M Tonnes

STARCH DERIVATIVES
(Maltodextrins, Sugars, Polyols)

6M Tonnes



FEED
5M Tonnes



FOOD & DRINK
>6M Tonnes



NON-FOOD
>4.5M Tonnes



FUEL
<0.5M Tonnes



STARCH EUROPE

WHAT DO STARCH EUROPE MEMBERS DO ?

The EU starch industry extracts starch, proteins and fibers from EU agricultural raw materials (primarily wheat, maize and starch potatoes, but also barley, rice and peas);

- For food applications (60% of EU starch applications) the starch industry develops plant-based ingredients which enhance a food's texture, taste, and nutritional values.
- In industrial applications, starch-based ingredients are widely used,
- Non -Starch products ie proteins, fibre and oil provide specific functionality to food, specialised feed, and compound animal feed applications.

RAW MATERIAL USAGE



WHEAT
8.5M TONNES



POTATOES
7.5M TONNES



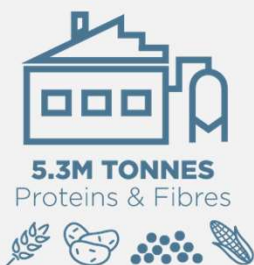
MAIZE
8M TONNES



WHAT DO WE DO ?

PROTEINS: food and feed complementarity

Of the 5.3 million tonnes of proteins and fibres produced by the European Starch industry in 2017, 1.1 million tonnes are classified as very high protein content products (above 60% protein content). With the rise in more [vegetable-based diets](#), especially in Europe, some of the proteins are [used increasingly in food](#), as an [alternative to animal proteins](#). They are a very useful and flexible alternative for consumers following a vegetarian or vegan diet, who need to find a [varied source of protein](#).



VERY HIGH PROTEIN CONTENT (60% - 90%)

1.1M TONNES



MEDIUM PROTEIN CONTENT (15% - 30%)

4.2M TONNES



MAIZE GLUTEN MEAL



PEA PROTEINS



(VITAL) WHEAT GLUTEN



POTATO PROTEINS



RICE PROTEINS



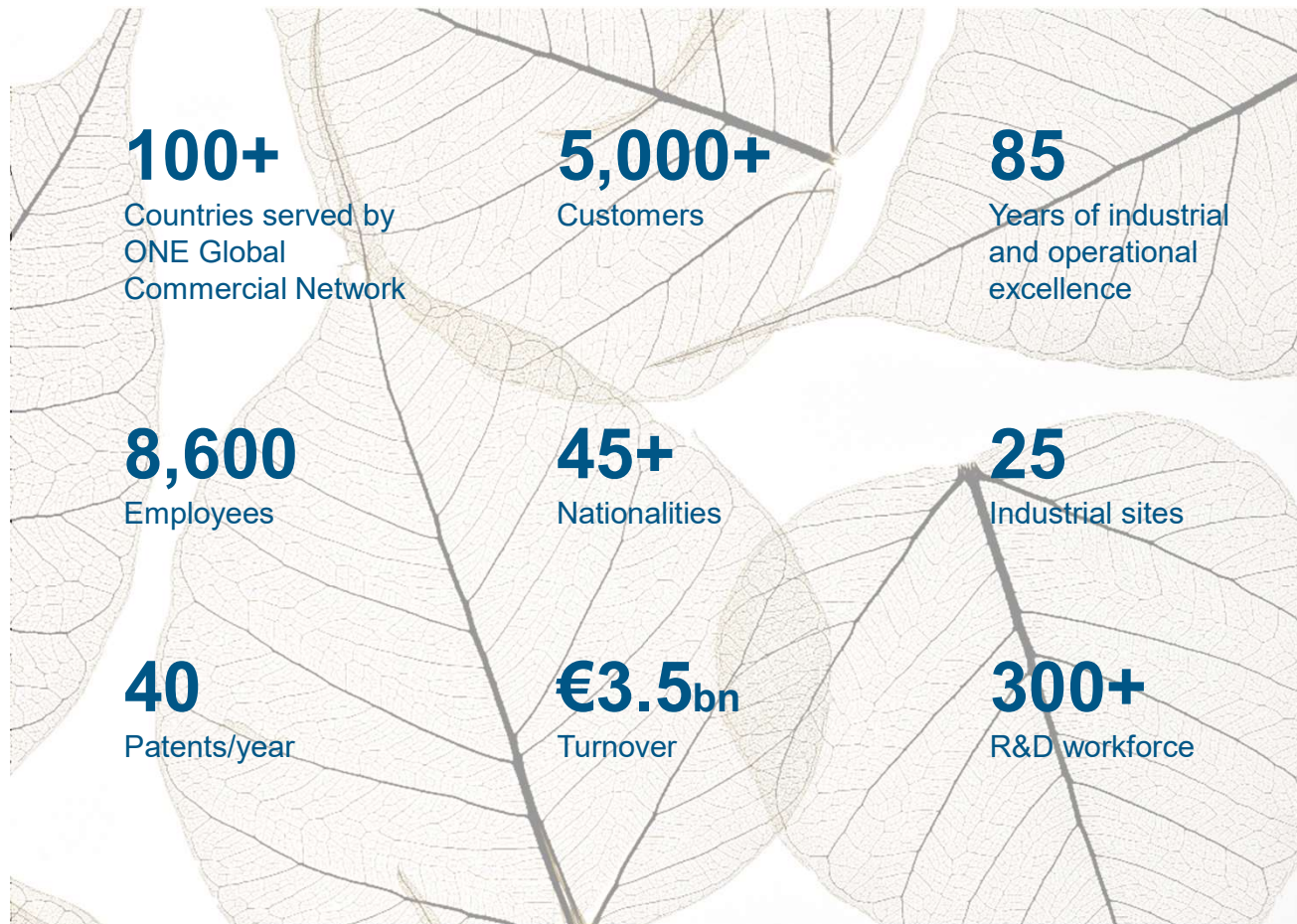
STARCH EUROPE MEMBERS



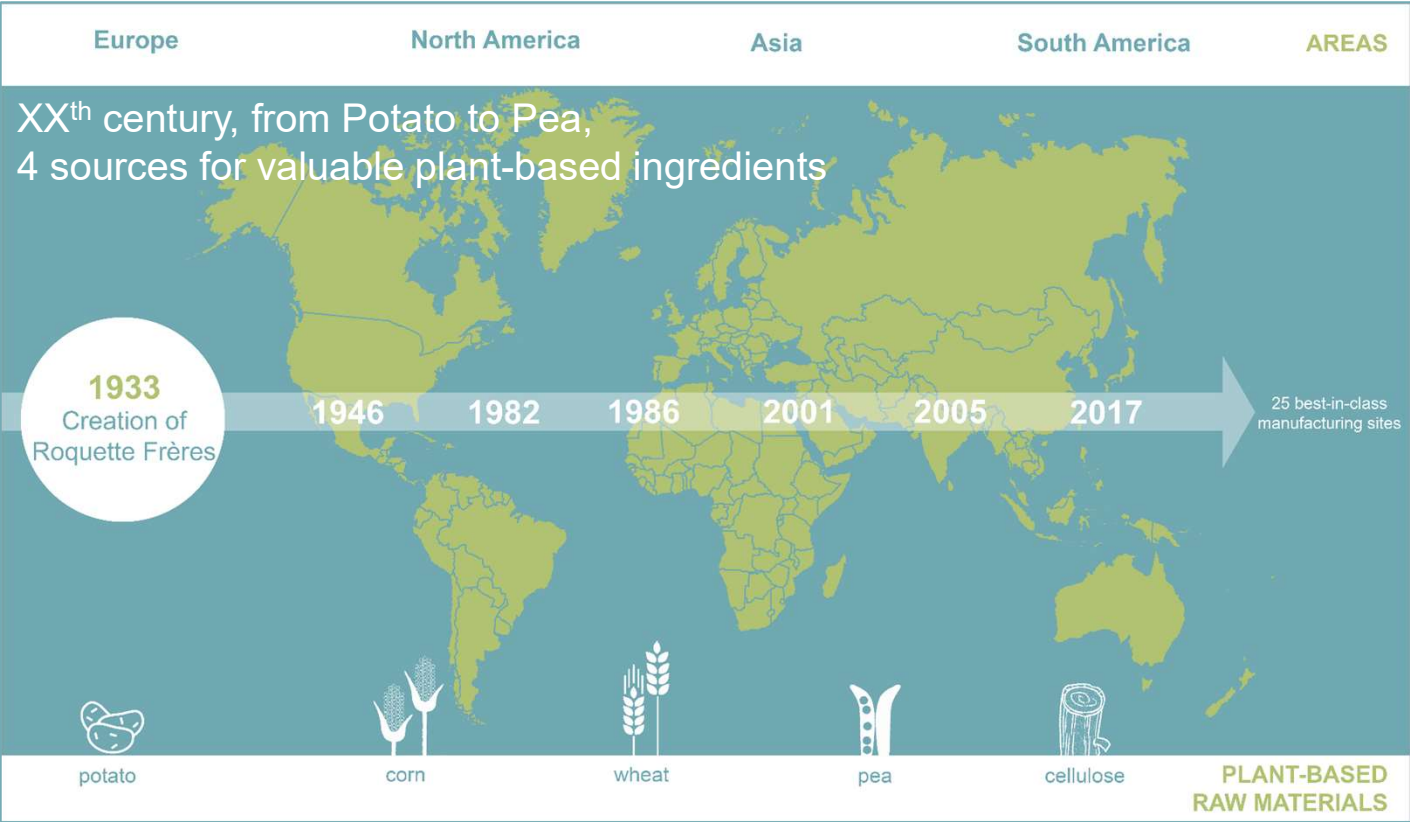
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ROQUETTE, A GLOBAL PLAYER



A STRONG GLOBAL MANUFACTURING CAPABILITY





ROQUETTE PIONEERS NEW PLANT PROTEINS
It is in our DNA

More than **40 years' experience** in researching and producing **plant protein**



One of the **pioneers** in plant **protein specialties** for **Food, Nutrition & Health markets**



The first Protein patent Roquette filled was potato-based in 1974

WE BENEFIT FROM A **STRONG PLANT PROTEIN POSITION**

Today: 15 years expertise in pea processing
> 600 kT of protein / year produced in 20 factories
4 botanical origins

AMBITION



To become the **long-term leader** in **new plant protein specialties** for **human nutrition**
by offering **high performance** and **sustainable solutions**



WE KEEP ON INNOVATING WITH NUTRALYS®
THE WIDEST RANGE TODAY AVAILABLE ON THE MARKET

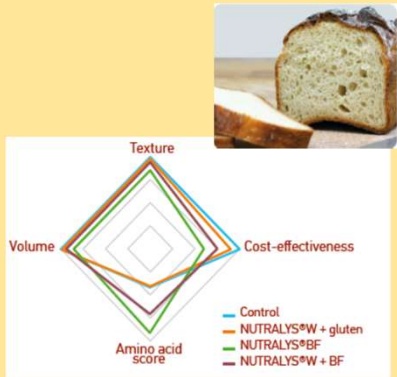


New texture



Nutralys
PEA PROTEIN
Trusted • Competitive • Unique

Texture improvement



Texture
Volume
Cost-effectiveness

Amino acid score

- Control
- NUTRALYS®W + gluten
- NUTRALYS®BF
- NUTRALYS®W + BF

Nutralys
PEA PROTEIN
Trusted • Competitive • Unique

High solubility



Nutralys
PEA PROTEIN
Trusted • Competitive • Unique

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Sustainability in a world of 9 billion people in 2050:
2 challenges

1.

Achieve global food
security, with nutritious
food for all

2.

Improve agricultural
production
sustainability



FOOD MEGA TRENDS



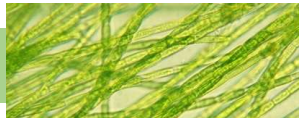
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PROTEIN ASSESSMENT

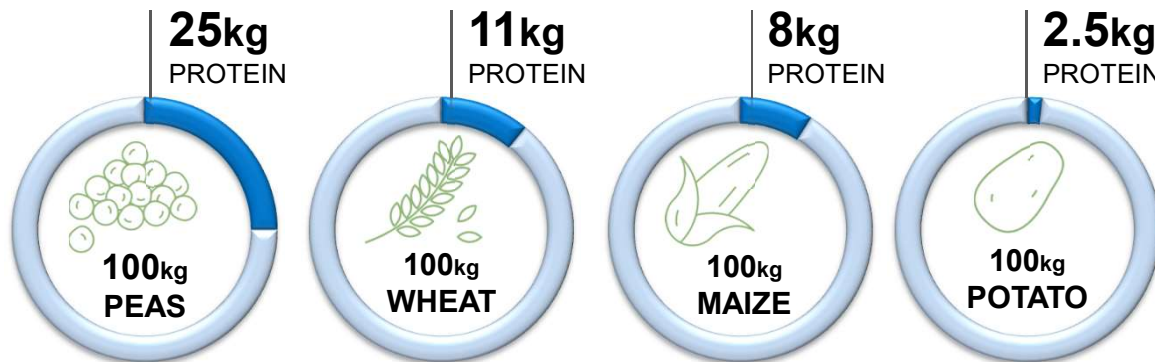
- selection of plant protein sources

Focus on the **most effective** and **sustainable sources**
and aligned with the **needs of food producers**

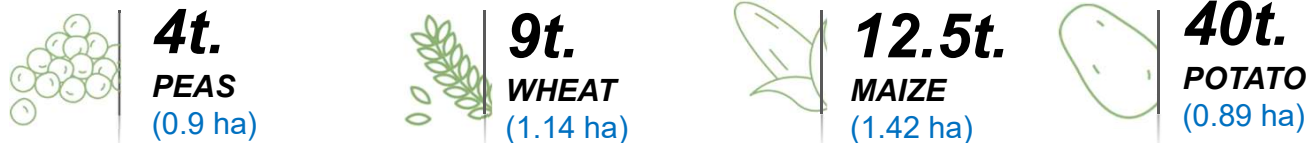
CEREALS		Wheat, Maize, Oat, Rice, Sorghum, buckwheat, spelt
MICRO-ORGANISMS		Fungi, microalgae, yeast
PULSES		Peas, Favabean, lentils, mungbean, chickpea
OILSEEDS MEALS		Flax, sunflower, canola, hemp
FRUITS & NUTS		Hazelnuts, chestnuts
TUBERS & VEGETABLE		Potatoes, alfalfa, water lentils

Empowering Plant Proteins

PROTEIN CONTENT

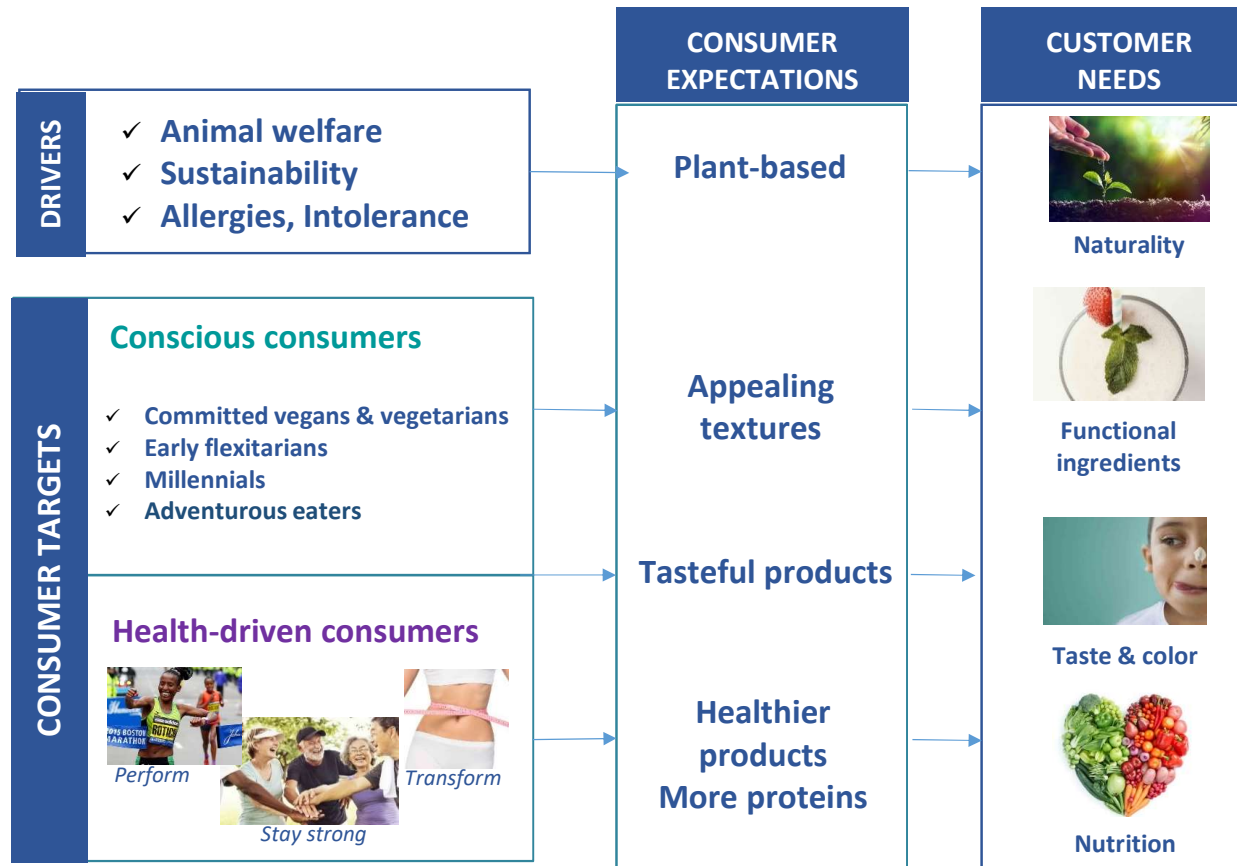


to get 1 TON of PROTEIN we need:



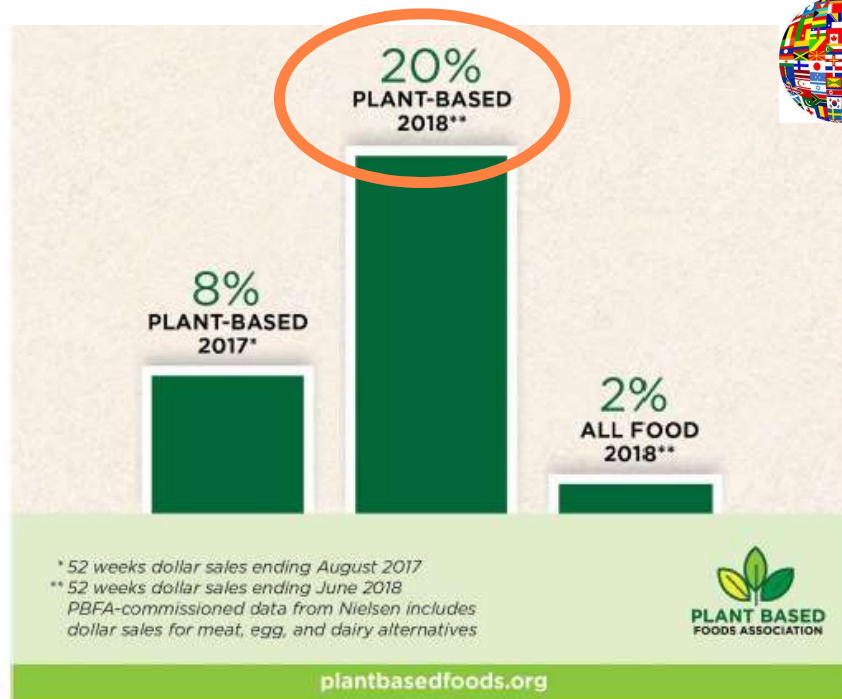


FROM PLANT-BASED EATING TREND TO NEW PROTEIN INGREDIENT PRODUCTS





Total Growth of all PLANT-BASED FOODS in Retail



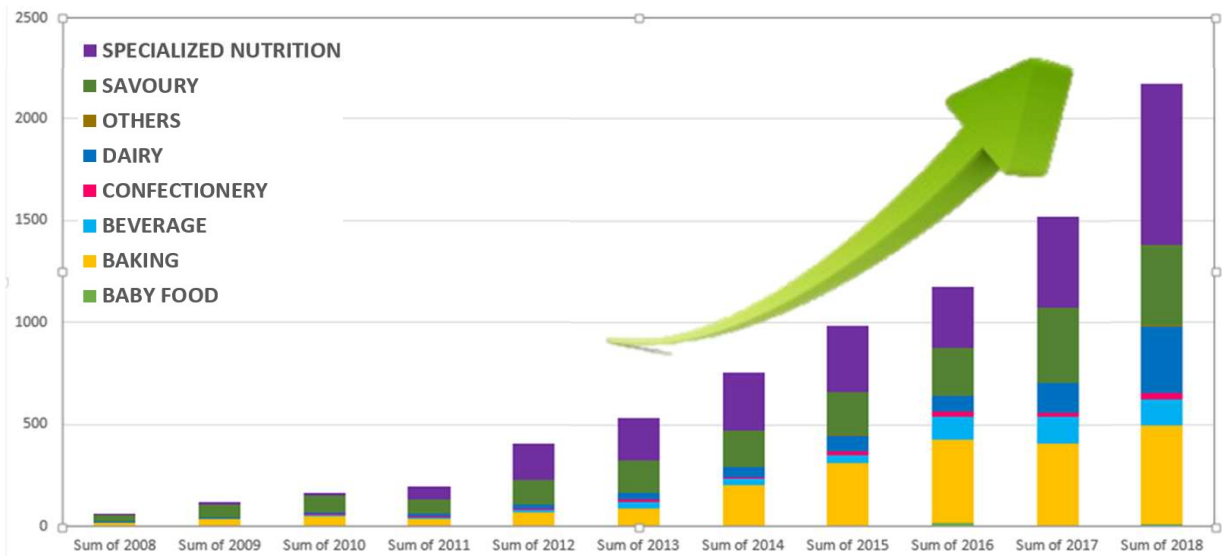
The total market for the **Plant-based foods** sector stands at **\$ 4.5 billion in 2018**

↑ 22% (80 million) than 2017



PLANT-BASED FOODS
MORE THAN A TREND, A MARKET DRIVER...

New product launches – Globally – All food sectors
Containing Pea Protein, Pea Protein Concentrate, Pea Protein Isolate



CAGR 2013 – 2018 **32.4%**

Source: Innova Market Insights



PLANT-BASED FOODS

MORE THAN A TREND, A MARKET DRIVER...

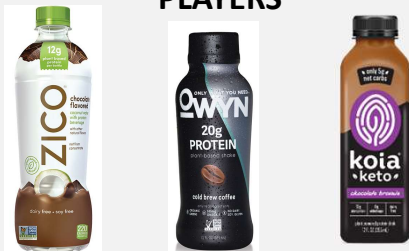
PLANT-BASED INDULGENCE

Global CAGR 2013 – 2017
DAIRY alternatives,
launched with an indulgent &
PREMIUM CLAIM

+23%



GOING MAINSTREAM FROM NEW PLAYERS TO BIG PLAYERS



STRENGTHENED PLANT PROTEINS

Global CAGR 2013 – 2017
SPORTS POWDERS
launched with
a PLANT PROTEIN
CLAIM

+16%



*“Loaded with
Plant-based protein”*

SNACKS launched with a
PLANT PROTEIN claim

x 3 2017 vs.
2016



Global CAGR 2014 – 2018
MEAT SUBSTITUTES
LAUNCHES **+16%**



FROM SPECIALIZED RESTAURANTS TO BIG CHAINS

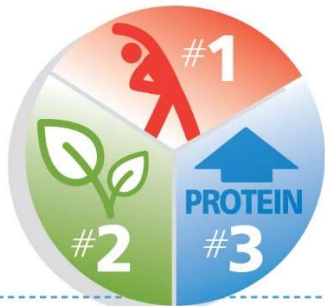


Source: Innova Market Insights

ROQUETTE AMERICAS CONSUMER PROTEIN SURVEY



Protein is a top food & beverage ingredient sought by consumers across a variety of categories



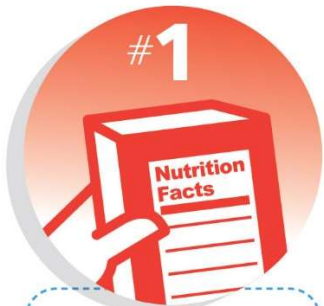
Health & Wellness, Plant-based, Protein Content – reasons to choose products with pea protein



Plant-based Beverage - more than half are extremely or somewhat likely to try



Dairy + Plant Protein Yogurt – most are extremely or somewhat likely to try



Nutrition #1 Reason to try Dairy + Plant Protein Yogurt or 100% Plant-based Beverage



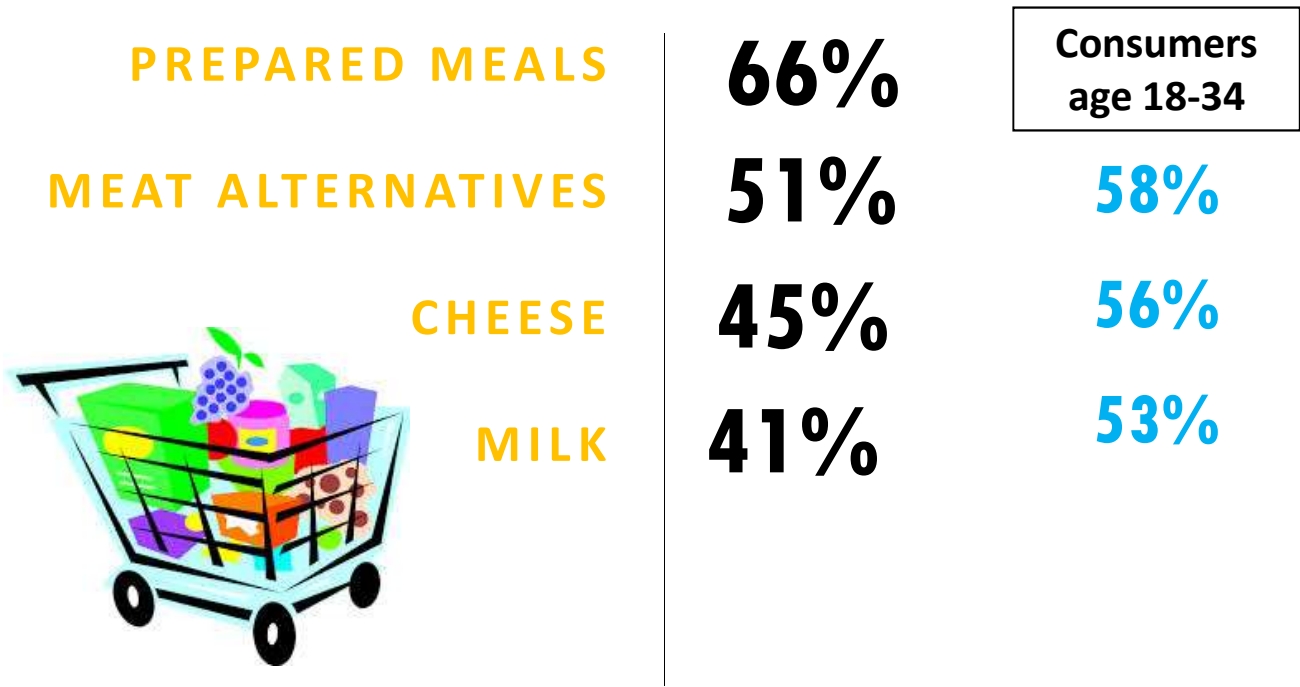
48% would like to try pea protein and 19% have tried it



40% are aware of the term *complete protein*
20% feel they know what it means nutritionally
5% say it's important to them

WHEN DO AMERICA CONSUMERS EAT PLANT-BASED PROTEINS?

Consumers are most likely to eat plant-based proteins in:



Source: Mintel

MEAT SUBSTITUTES

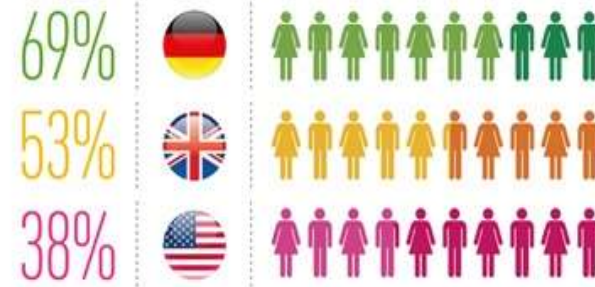
• IN EUROPE FLEXITARIAN CONSUMERS DRIVE THE CHANGE



Please Look at the Following Statements and
Tick All That Apply: 2019



% of consumers that reported eating meatless meals once a week or more:



FUTURE VIEWS ON PLANT BASED MEAT - 2030

 **UBS** \$85BN

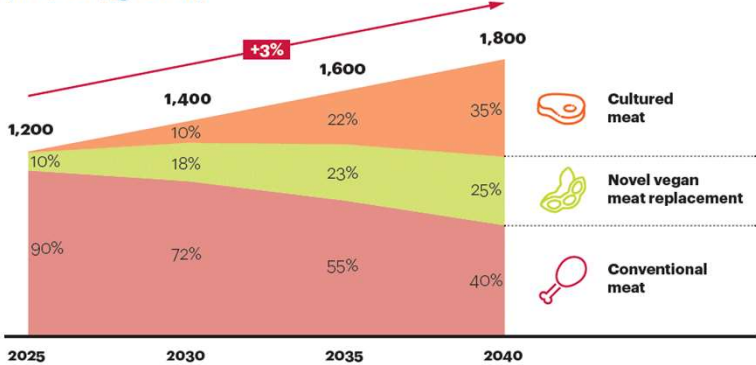
The plant-based protein segment could growth at a compound annual growth rate of 28% by 2030 (from USD 4.6bn in 2018 to USD 85bn).

 **BARCLAYS** \$140BN

OUR WORK SUGGESTS A POTENTIAL MARKET SIZE OF \$140BN BY 2029, FROM LESS THAN \$14BN TODAY.

*AT***Kearney** \$252BN

Global meat market forecast
(in \$ bn, global)



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ROQUETTE INVESTS HEAVILY

In France and Canada

Roquette is investing half a billion € (from 2015 to 2020)
to meet the increasing global demand for high-quality pea protein
WE INVEST:

... IN CAPACITY

2018: **Capacity increase**, Vic-sur-Aisne (FRANCE)

2020: **New plant commissioning**, Portage la Prairie (CANADA)

In 2020, ROQUETTE will have the **largest pea processing capacity worldwide**

... IN ENERGY

100% green electricity



... IN PRACTICE

Quality & Food Safety	ISO9001 / ISO22000
Customs-Logistics:	OEA
Food Safety	Halal / Kosher
Feed Safety	EFISC / GMP + Feed
Energy	ISO 50001 (2016)



2020 PERSPECTIVE

Two production plants inside the pea crop areas

Roquette has historically set up its production plants where their raw material is grown

