



THE USE OF PLANT-BASED PROTEINS IN FOOD AND BEVERAGES IN THE EU A 10-year review of New Product Launches Containing Plant-Based Proteins across EU 28

GENERAL SUMMARY

Introduction

EUVEPRO members are producers of all major sources of vegetable proteins for food use in Europe. In 2018 EUVEPRO commissioned a report into new food product launches containing plant-based proteins across the EU over the period 2007-2017.

In general, we see a huge increase in New Product Launches (NPLs) containing plant-based proteins in the period from 2007 to 2017. The average annual growth in plant-based protein NPLs over this 10-year period is 13.5%. In 2007, there were ca 750 NPLs containing plant-based proteins, whereas in 2017 there were ca 5000.

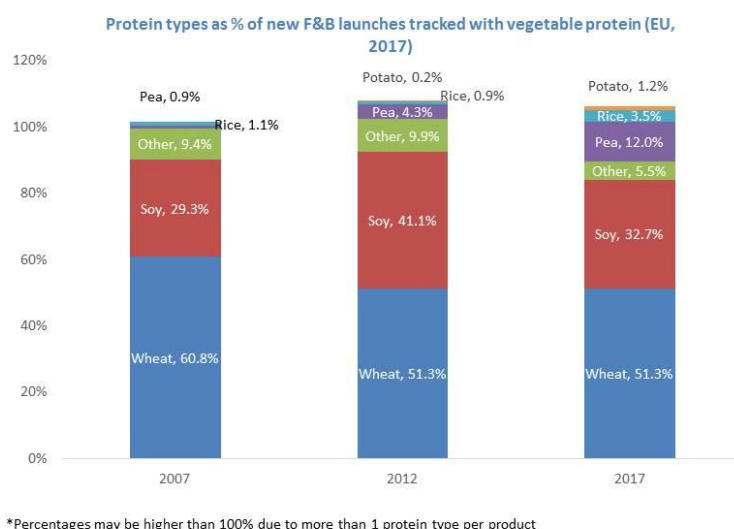
Several factors are driving this:

- **Socio-ecological factor**
Pressure of animal-based proteins on the planet is enormous; this has become clear in the last couple of years in particular with more and more facts and figures. Hence, a lot of people decided to take action and make the shift, partially or fully, to consumption of plant-based protein types. This leads to less pressure on the environment and climate. Increasing preference for consumption of plant-based protein rather than animal-based protein may also be because of its beneficial role in weight management and reducing risks to chronic diseases (Marsh *et al.* 2013).
- **Ethical factor**
Others may have taken this shift for ethical reasons such as animal welfare.
- **Health factor**
Research is increasingly demonstrating that plant-based protein diets are healthier than animal-based protein diets (The Lancet, 2019).
- **Consumer Trends**
Plant-based foods are making inroads with consumers, owing to the changing trends in terms of flexitarian, vegetarian, vegan or simply healthy eating habits. A recent survey by Mintel (2018) revealed that taste and perceived health benefits ranked highest among the reasons for US adults to eat plant-based proteins, which outranks concerns over diet, animal protection, and the environment.
- **Sustainability**
Substituting meat with other protein sources has the potential to improve the sustainability of the food supply in Europe (EUFIC, 2017).

Key findings

Wheat and soy protein remain the biggest players in the plant-based protein market, with continuing, high numbers of NPLs during 2015-2017 (ca 84% of all plant-based protein NPLs). However, the relative share of wheat and soy proteins to the total plant-based protein NPL market is decreasing, because this innovative and dynamic market is growing and is increasingly attracting diversified sources of plant-based proteins.

Total vegetable protein overview

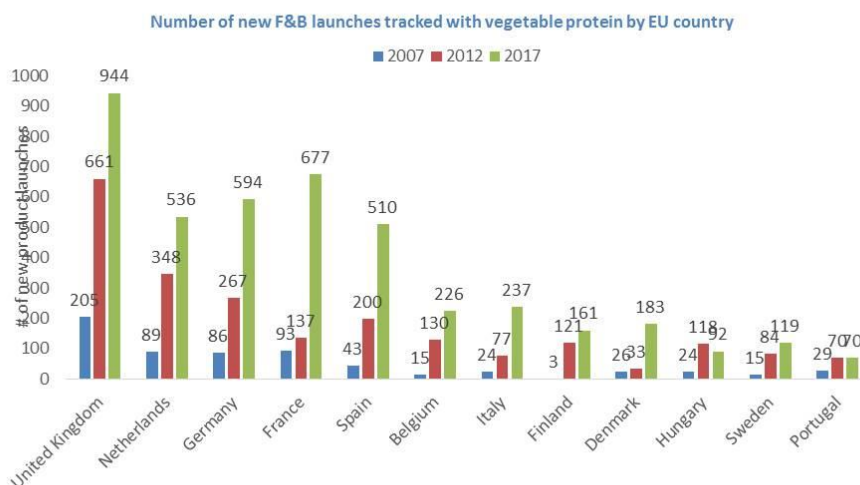


The UK is still the country with the highest number of NPL's with plant-based proteins; however, France is coming closer, demonstrating the growing interest on the part of French consumers to purchase plant protein-containing foods.

Top & fastest growing countries and categories for vegetable protein

TOP					FASTEST GROWING					
COUNTRIES	Top countries/categories (in # of product launches tracked in 2017)	Total vegetable protein				Top fastest growing countries/categories	Total vegetable protein			
		2007	2012	2017	Growth (CAGR 2012-2017)		2007	2012	2017	Growth (CAGR 2012-2017)
	United Kingdom	205	661	944	+7.4%	Denmark	26	33	183	+40.9%
	France	93	137	677	+37.6%	Ireland	18	23	125	+40.3%
	Germany	86	267	594	+17.3%	France	93	137	677	+37.6%
	Netherlands	89	348	536	+9.0%	Croatia	-	5	16	+26.2%
	Spain	43	200	510	+20.7%	Italy	24	77	237	+25.2%
	Bakery	215	677	1,442	+16.3%	Soft Drinks	10	2	54	+93.3%
	Meat, Fish & Eggs	115	630	992	+9.5%	Desserts & Ice Cream	4	20	102	+38.5%
	CATEGORIES	Ready Meals	150	426	729	+11.3%	Baby & Toddlers	7	4	14
Cereals		49	190	387	+15.3%	Fruit & Vegetables	5	7	16	+18.0%
Sports Nutrition		41	168	377	+17.5%	Sports Nutrition	41	168	377	+17.5%

Total vegetable protein launches by country



Zooming in on **soy proteins**:

Soy proteins are one of the longest-standing plant-based proteins on the market, with 222 NPLs even in 2007 (>29% of all plant-based protein NPLs in that year). The number of NPLs for soy protein has increased 7.3-fold between 2007 and 2017, although the number of NPLs in the years 2015 to 2017 has stabilized at ca 1600 per annum. The UK continues to be the market with the highest number of soy protein NPLs, but the most significant growth in NPLs over the period 2007-17 has been in Spain and the Netherlands, in particular; the number of NPLs per annum in these countries now coming close to the number in the UK. The main food product category for soy protein NPLs in 2017 continues to be *meat, fish & eggs*, but the food areas that have shown the most significant growth are: *cereals* and *sports nutrition products*.

Top & fastest growing countries and categories for soy protein

TOP					FASTEST GROWING				
Top countries/categories (in # of product launches tracked in 2017)	Total soy protein				Top fastest growing countries/ categories	Total soy protein			
	2007	2012	2017	Growth (CAGR 2012- 2017)		2007	2012	2017	Growth (CAGR 2012- 2017)
United Kingdom	48	203	275	6.3%	Denmark	10	8	75	56.5%
Spain	19	88	261	24.3%	Ireland	4	8	59	49.1%
Netherlands	33	178	203	2.7%	France	11	21	121	41.9%
Germany	21	97	156	10.0%	Italy	3	20	81	32.3%
France	11	21	121	41.9%	Spain	19	88	261	24.3%
Meat, Fish & Eggs	64	419	525	4.6%	Soft Drinks	8	2	24	64.4%
Sports Nutrition	21	115	219	13.7%	Cereals	9	60	180	24.6%
Ready Meals & Side Dishes	36	193	211	1.8%	Confectionery	6	9	18	14.9%
Cereals	9	60	180	24.6%	Desserts & Ice Cream	2	3	6	14.9%
Snacks	33	77	150	14.3%	Snacks	33	77	150	14.3%

COUNTRIES

CATEGORIES

Zooming in on **wheat proteins**:

Wheat proteins are the most widely used plant-based proteins in Europe. Product launches including these proteins represent more than 50 % of the launches with plant-based proteins (51.3%) with a steady growth (13.5% CAGR) over the last 10 year period. Several types of wheat proteins are offered. Actually, vital wheat gluten is included in 80 % of the launches whereas wheat proteins, wheat isolate hydrolyzed and textured protein cover the rest.

The UK and France followed by the Netherlands and Germany are the top countries using wheat proteins (representing 70% of all launches). The growth of launches exceeds 30 % CAGR in Denmark, France and Ireland. In terms of food categories, *bakery*, not surprisingly is the largest food category involved (close to 50% of the launches) whereas the largest growth is seen in snack foods and ready meals (CAGR of 26 and 19%).

Top & fastest growing countries and categories for wheat protein

		TOP				FASTEST GROWING				
	Top countries/categories (in # of product launches tracked in 2017)	Total wheat protein				Top fastest growing countries/ categories	Total wheat protein			
		2007	2012	2017	Growth (CAGR 2012- 2017)		2007	2012	2017	Growth (CAGR 2012- 2017)
COUNTRIES	United Kingdom	145	416	515	+4.4%	Denmark	13	14	69	+37.6%
	France	77	115	450	+31.4%	France	77	115	450	+31.4%
	Netherlands	45	141	298	+16.1%	Ireland	13	13	49	+30.4%
	Germany	54	131	277	+16.2%	Bulgaria	3	5	17	+27.7%
	Spain	14	81	210	+21.0%	Czech Republic	2	5	16	+26.2%
	Bakery	190	603	1,247	+15.6%	Snacks	21	43	136	+25.9%
	Ready Meals & Side Dishes	94	174	416	+19.0%	Ready Meals & Side Dishes	94	174	416	+19.0%
	Meat, Fish & Eggs	41	213	409	+13.9%	Desserts & Ice Cream	2	11	25	+17.8%
	Snacks	21	43	136	+25.9%	Bakery	190	603	1,247	+15.6%
	Cereals	37	138	120	-2.8%	Meat, Fish & Eggs	41	213	409	+13.9%
CATEGORIES										

Zooming in on **pea proteins**:

In the current plant-based protein market, pea protein is the best alternative: for its nutrition, functionalities and sustainability. Moreover, the dynamics of the market highlight the popularity of pea protein: only 7 new products in 2007 containing pea protein compared to almost 600 new products in 2017. The UK is the most active with more than 120 product launches in 2017 (a threefold increase in 5 years), followed by Germany and France. Pea protein is largely used in *bakery* (mainly bread, with a 42% increase of new products in 5 years), *meat, fish & eggs* and *ready meals*. The main driver of pea protein market is the plant-based trend, which more and more mimics the mainstream market. That is why the dairy category is booming with an increase of 90% of product launches in 5 years.

NPLs with pea protein represent more than 10% of the launches in 2017, whereas they were nearly zero in 2007.

Top & fastest growing countries and categories for pea protein

		TOP				FASTEST GROWING				
	Top countries/categories (in # of product launches tracked in 2017)	Total pea protein				Top fastest growing countries/ categories	Total pea protein			
		2007	2012	2017	Growth (CAGR 2012- 2017)		2007	2012	2017	Growth (CAGR 2012- 2017)
COUNTRIES	United Kingdom	2	36	121	27.4%	Spain	-	1	26	91.9%
	Germany	-	7	103	71.2%	France	2	5	93	79.4%
	France	2	5	93	79.4%	Denmark	-	2	37	79.2%
	Netherlands	1	24	44	12.9%	Germany	-	7	103	71.2%
	Finland	-	10	38	30.6%	Sweden	-	3	36	64.4%
	Bakery	-	19	111	42.3%	Cereals	1	2	56	94.7%
	Meat, Fish & Eggs	4	24	94	31.4%	Dairy	-	1	26	91.9%
	Sports Nutrition	-	14	89	44.8%	Confectionery	-	1	18	78.3%
	Ready Meals & Side Dishes	1	28	77	22.4%	Spreads	-	1	14	69.5%
	Cereals	1	2	56	94.7%	Desserts & Ice Cream	-	6	50	52.8%
CATEGORIES										

Zooming in on **rice protein**:

In 2017, there were 5,5 times more NPLs with rice protein per year in comparison with 2007. Growth is especially located in the UK, France and Germany. Most important applications for rice protein are *cereals* and *sports nutrition* (bars and powders). Rice is still a smaller player in the plant-based protein market compared with some of the longer-established plant-based proteins. However, especially in cereals the growth in the last 5 years is quite tremendous. Back in 2012 there was only 1 new cereal product launch with rice protein compared to 57 products in 2017.

Top & fastest growing countries and categories for rice protein

		TOP				FASTEST GROWING				
	Top countries/categories (in # of product launches tracked in 2017)	Total rice protein				Top fastest growing countries/ categories	Total rice protein			
		2007	2012	2017	Growth (CAGR 2012- 2017)		2007	2012	2017	Growth (CAGR 2012- 2017)
COUNTRIES	United Kingdom	2	12	62	+38.9%	France	0	1	28	+94.7%
	France	0	1	28	+94.7%	Belgium	0	1	7	+47.6%
	Germany	0	5	26	+39.1%	Germany	0	5	26	+39.1%
	Netherlands	2	0	10	N/A	United Kingdom	2	12	62	+38.9%
	Denmark	0	0	9	N/A	Spain	0	1	5	+38.0%
	Cereals	1	1	57	+124.5%	Cereals	1	1	57	+124.5%
CATEGORIES	Sports Nutrition	0	20	54	+22.0%	Baby & Toddlers	2	1	6	+43.1%
	Confectionery	1	0	16	N/A	Sports Nutrition	0	20	54	+22.0%
	Bakery	2	0	12	N/A	Snacks	2	2	4	+14.9%
	Soft Drinks	0	0	11	N/A					

Zooming in on **potato protein**:

Potato protein holds the lowest percentage share of the plant-based protein market with 1.2% in 2017. Looking at specific potato protein types, “potato protein”, labelled as such, is the only term used for NPLs in 2017, with other potato protein types yet to find application in food and beverage new product development.

The Netherlands is the top country for potato protein application and shows the fastest growth over the past 5 years. *Meat, fish & eggs* and *bakery* were the top market categories for potato protein applications in 2017.

Top & fastest growing countries and categories for potato protein

		TOP				FASTEST GROWING				
CATEGORIES	Top countries/categories (in # of product launches tracked in 2017)	Total potato protein				Top fastest growing countries/ categories	Total potato protein			
		2007	2012	2017	Growth (CAGR 2012-2017)		2007	2012	2017	Growth (CAGR 2012-2017)
	Netherlands	-	1	23	+87.2%	Netherlands	-	1	23	+87.2%
	Germany	-	-	17	N/A	United Kingdom	-	4	11	+22.4%
	United Kingdom	-	4	11	+22.4%	Finland	-	1	2	+14.9%
	Belgium	-	-	8	N/A					
	France	-	-	5	N/A					
	Meat, Fish & Eggs	-	2	27	+68.3%	Meat, Fish & Eggs	-	2	27	+68.3%
	Bakery	-	-	24	N/A					
	Confectionery	-	-	12	N/A					
Ready Meals & Side Dishes	-	4	4	0.0%						
Dairy	-	-	2	N/A						

Zooming in on less well known or **unspecified (“other”)** proteins:

Overall, plant-based protein that is not specified by plant source is the most tracked “other” protein denomination used on new product labels, holding a 5.5% share of total plant-based protein NPLs in 2017. Named, other protein types tracked in food and beverage launches in 2017 include hemp protein, corn protein and lupin protein, although few NPLs containing these less well known plant-based proteins were identified.

Germany, the UK and the Netherlands were the top countries for NPLs containing “other” proteins in food and beverages in 2017, with Portugal showing the fastest growth between 2007 and 2017. *Meat, fish & eggs* and *ready meals* are top categories, while soups are showing fastest growth with an average annual increase of 20% since 2007.

Top & fastest growing countries and categories for other proteins

COUNTRIES

CATEGORIES

TOP					FASTEST GROWING					
Top countries/categories (in # of product launches tracked in 2017)		Total other protein				Top fastest growing countries/ categories	Total other protein			
		2007	2012	2017	Growth (CAGR 2012- 2017)		2007	2012	2017	Growth (CAGR 2012- 2017)
Germany		16	58	84	7.7%	Portugal	-	3	16	39.8%
United Kingdom		16	69	54	-4.8%	France	3	10	42	33.2%
Netherlands		14	54	55	0.4%	Italy	3	6	17	23.2%
Spain		10	40	45	2.4%	Denmark	6	9	22	19.6%
Belgium		5	20	32	9.9%	Belgium	5	20	32	9.9%
Meat, Fish & Eggs		17	112	98	-2.6%	Soup	4	14	35	20.1%
Ready Meals & Side Dishes		28	72	94	5.5%	Spreads	-	8	22	22.4%
Sauces & Seasonings		11	52	39	-5.6%	Sports Nutrition	-	14	27	14.0%
Snacks		11	36	45	4.6%					
Bakery		10	35	47	6.1%					

References

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