Business Review

Protein Ingredients

GLOBAL, WITH A FOCUS ON USA, EUROPE, CHINA, INDIA, ASEAN

2018 - 2023

INTRODUCTION

Protein ingredients have become an integral part of many packaged food formulations, with both a nutritional and technical function. The key trend observed in the recent past is the intense focus on the emergence of plant-based protein ingredients in the new product development. This poses the threat for dairy protein ingredients as plant-based protein ingredients (traditionally soy and recently pea) are expected to erode a significant share from dairy proteins. Recent new product launches highlight the extent of plant protein ingredients used in products especially meat alternatives and food supplements. The need for finding an alternative to texturized soy protein (non-GM) is observed targeting the meat replacer market. Vegetarianism, natural, organic, vegan and flexitarianism are some concepts that also favors plant-derived protein use. However, plant protein ingredients, such as soy or wheat gluten, have allergenic issues, and these together with soy's GM image, pose challenges in Europe. Nevertheless, the increasing demand of plant proteins is also expected to ensure raw material availability, develop performance attributes equivalent to that of established ingredients such as soy and whey, and certify the protein quality.

The growing demand of protein ingredients are expected to be met by technological advancements by ingredient manufacturers in extraction techniques and innovations in novel proteins. Novel protein ingredients are considered to be competitive ingredients for existing dairy/plant-based protein ingredients. The range of well-known novel proteins are algal proteins, insect proteins and fungal proteins. Hemp protein, sunflower protein, oat protein and lupin protein are few other novel protein ingredients.

Having seen the development of the traditional protein sources, novel proteins are already coming up with almost perfect functionality and positioning. The protein deficit in the diets of many populations could be addressed by the rational development and positioning of protein ingredients. This represents an enormous volume opportunity. On account of this present scenario Giract has now decided to explore all these the trends in the current update of the global protein ingredients market.

OBJECTIVES

Establish the competitive scenario amongst the different animal and plant derived protein ingredients and understand the dynamics vis-à-vis the new protein ingredients, which can be split into the following sub-objectives:

- To establish production/supply estimates by region and by product
- To identify producers and to estimate their shares in each region and product
- To estimate demand by end-use sector and by region
- To identify qualitative factors that determine use in the relevant sectors and to understand the penetration potential of new protein ingredient sources
- To forecast demand by product, end-user sector and region

PRODUCTS

Cereal derived proteins	-	Wheat/rice
Pulse derived proteins	-	Soy, pea, fava, lentils, chickpea
Root derived proteins	-	Potato
Dairy proteins	-	Whey, milk
Animal proteins	-	Gelatin, collagen, egg, HAP
Novel proteins	-	Algal, insect, fungal

MARKETS

USA/Canada, Mexico, Europe, China, India, ASEAN, RoW

SECTORS

Food (Bakery, dairy, processed meat, meat analogues, functional foods/supplements, clinical/infant, others), Feed (pet food, animal feed)

TIMESCALE

Current 2018; Forecast 2023

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Within this study, Giract has reported its understanding of the current and future positions of individual companies with regard to use of specific ingredients. Whilst these are Giract's honest recording of specific interviews, they must not be considered as an 'official position' of the company in question. Giract accepts no liability for any errors or omissions in its information or forecasts or for any consequential loss.

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1. EUROPE - SUPPLY

1.1. PLANT DERIVED PROTEINS

- Europe is one of the world's key cereal-growing regions, with the EU28 cereal production recorded at about 290 mio tons in 2018/19
- EU production accounts for about 12.5% of global cereal output. Wheat (common wheat and spelt) accounted for 47.3% of the total cereal production in (2018)
- In EU28, France is the largest producer of wheat, followed by Germany, Poland, Italy and the UK. In Europe, wheat is used for human food, seeds, industrial applications and animal feed. Industrial use accounts for about 8-9%
- Europe produced 2 mio tons and 0.8 mio tons of Japonica and Indica rice, respectively in 2017/18. Italy is the leading rice producer, followed by Spain, Portugal and Greece
- …

1.1.1. MANUFACTURERS - PULSE PROTEINS

1.1.1.1 VESTKORN MILLING

- Vestkorn Milling founded in 1855, a subsidiary of Tau Molle, based in Norway, offers proteins using dry process from pulses such as pea and fava beans
- Its production facility is located at Tau, Norway
- The company claims as one of the leading peas and fava bean protein producer for food, feed and pet food applications
- Pea starch concentrates, pea protein concentrates, pea fibre and dehulled peas are among its key offerings under pea-based ingredients
- Pea protein is sold as pellets and flour
- The company uses dry milling and fine milling technology to produce its pea protein concentrates (55% protein content) and focuses more on animal nutrition than food applications
- After taking over the pea related activities of DLG Ingredients in January 2016, Vestkorn extended its portfolio with split peas, whole cleaned peas and decorticated peas
- The company also offers and introduced (about 3 years ago) fava bean protein concentrate with 65% protein content for both food and animal nutrition applications (currently, pet food demand is higher than its demand in food sector)
- The company currently exports about 50% of its production volumes outside Europe, mainly pea proteins are being exported to North America

- It sources beans and peas from Europe and processes by dry milling and air classification methods, which helps to segregate starch component and concentrate protein level
- It focuses on sustainable raw material sourcing and processing without using chemicals
- It distributes pea proteins through Anchor Ingredients in the US

1.1.1.2 INGREDION

- Ingredion EMEA (Europe, Middle East and Africa) is present in UK and Germany
- It has a production facility in Hamburg, Germany to produce clean label starches for soups, sauces and ready meals in Europe
- Ingredion does not process or produce protein ingredients in Europe
- Previously, it distributed fava bean protein produced by AGT Foods under the Vitessence brand. However, this agreement came to an end in 2018, and Ingredion is now preparing its own fava bean processing facility in N. America
- These protein ingredients are applied as gluten-free, non-GM proteins in dairy, beverages
- Fava bean protein processed by dry milling process and is typically used to replace/reduce/eliminate allergen-free proteins (eggs, soy, whey, animal)
- It has invested USD 140 mio in existing facility (US) to manufacture flours and concentrates from fava beans, pea and lentils by Dec 2018

1.1.1.3 HERBA INGREDIENTS

- Part of Ebro group, rice and pasta manufacturer, based in Spain
- Based in the Netherlands and employs around 10 staffs
- It generates annual revenue over EUR 7 mio and focuses on natural, allergen-free ingredients (rice, pulses, grains) for food applications
- It manufactures pea/fava bean concentrates and also process fava bean starch concentrate, fibre, quinoa flours
- It also supplies lentil, chickpea, and quinoa flour, rice flour, flakes and starch
- It supplies clean label solutions along vegetarian/vegan ingredient choices
- Redox is the distributor of Herba ingredient's rice flour and starches since February 2019

1.1.1.4 ORGANIC PEA PROTEIN

- Organic pea protein manufactures brown peas and fava bean protein concentrates (60%, 20%) at its plant in Finland
- Organic Pea protein is growing organic brown peas and fava bean and claim to process about 150 tpa of these crops
- It is planning to manufacture and launch pea protein isolates by 2021

1.1.1.5 AVEBE

- …

1.1.2. CEREAL/GRAIN-DERIVED PROTEINS – OVERVIEW SUPPLY EUROPE

Production of cereal/grain-derived protein ingredients, 2019 **kt**

Company	Wheat Gluten	Wheat Protein Isolate	Wheat Protein Hydrolysate	Texturized Wheat Protein	Rice Protein Concentrate	Rice Protein Isolate	Other
ADM Chamtor							
Beneo							
Cargill							
Jäckering							
Kerry							
Lantmannen							
Roquette							
Tereos							
Others							
Frank Food							
Prolupin							
All Organic							
Total							

Others includes oat protein by Lantmannen and Fazer Mills, and lupin by Frank Food and Prolupin

Source: Giract, based on interviews and analysis.

1.1.3. CEREAL/GRAIN-DERIVED PROTEINS – AVAILABILITY EUROPE

Availability of cereal/grain-derived protein ingredients, 2019 **kt**

	Wheat Gluten	Wheat Protein Isolate	Wheat Protein Hydrolysate	Texturized Wheat Protein	Rice Protein Concentrate	Rice Protein Isolate	Rice Protein Hydrolysate	Other
Production								
Imports								
Exports								
Availability								

Others includes oat protein by Lantmannen and Fazer Mills, and lupin by Frank Food and Prolupin

Source: Giract, based on interviews and analysis.

1.1.4. PULSE/ROOT-DERIVED PROTEINS – OVERVIEW SUPPLY EUROPE

Production of pulse/root-derived protein ingredients, 2019 kt

Company	Soy Flour	SPC	SPI	Texturised soy protein	Pea Protein Concentrate 80	Pea Protein Isolate	Texturised Pea Protein	Fava bean	Potato Protein Concentrate	Texturised Potato Protein
ADM										
Agrokorn										
AM Nutrition										
Cosucra										
DuPont										
Emsland										
Finnsoy										
Frank Food										
Hamlet Protein										
Herba										
Kerry										
Organic Pea										
Roquette										
Vestkorn										
Others										
Avebe										
Emsland										
Finnamyl										
KMC										
Lyckeby										
Roquette										
Tereos										
Others-potato										
Total										

Source: Giract, based on interviews and analysis

1.2. INDICATIVE PRICES OF PROTEIN INGREDIENT IN EUROPE

Prices of protein ingredients, Europe, 2018-2019

	EUR/kg
Soy Flour	
SPC	
SPI	
SPH	
Texturised Soy Protein	
Wheat Gluten	
Wheat Protein Isolate	
Wheat Protein Hydrolysate	
Texturised Wheat Protein	
Pea Protein Concentrate	
Pea Protein Isolate	
Pea Protein Hydrolysate	
Texturised Pea Protein	
Rice Protein Concentrate	
Potato Protein Concentrate (food/feed)	
Fava Bean (60-65%/80-90%)	
WPC 35	
WPC 80	
WPI	
WPH	
MPC	
MPI	
MPH	
Casein - caseinate	
Gelatin	
Hydrolysed collagen	
Egg protein	
Hydrolysed animal protein	
Fungal	
Algal	
Insect	
Leaf	

*Leaf protein is a projected price range

Source: Giract, based on interviews

1.3. LEGISLATION

- European Food Safety Authority (EFSA) is the agency in the EU, which provides scientific advice and communications about the risks involved along the food chain
- EFSA issues legislation for making health claims within the EU
- According to regulation (EU) no 1169/2011, Protein content of a food must be mandatorily declared as part of nutrition on food labels
- Permitted claims for protein ingredients in Europe are covered by regulation EU no 1924/2006
- …

Source of protein:

- A food product can be claimed as source of protein if a minimum 12% of the energy value of food is provided by protein

High protein

- A food product can be claimed as high protein if a minimum 20% of the energy value of food is provided by protein
- Halal certification in Europe is provided as per the Halal guidelines and that does not include proteins derived from animals (gelatin, collagen), casein (unless digested by plant enzymes)
- Regulation EU no. 1143/2014 restricts insect species that are eligible for farming purposes
- …

GMO

- EFSA does not permit use of GMO in foods. However, there is no restriction on raw materials from GM origin for animal feed
- Directive (EU) 2015/412 amending Directive 2001/18/EC as regards the possibility for the Member States to restrict or prohibit the cultivation of GMOs in their territory
- …

2. EUROPE – DEMAND

2.1. INTRODUCTION

2.1.1. DEMOGRAPHICS

Population trend – Europe

- Population growth is slow
- However, while the population of EU28 is gradually increasing overall, the population is actually falling in some member states (2018–2019)
- As of January 2019, the population of the EU28 was 513.5 mio

	2015 mio	2016 mio	2017 mio	2018 mio	CAGR%
EU28+CH+NO					

Source: tradingeconomics

Current Population by Key Country, EU28

Country	2019 (mio)
Germany	
France	
UK	
Italy	
Spain	
Netherlands	
Denmark	
Rest of EU28	
Total	

Note: Population estimates were made on the 1st of January in 2019

Source: Eurostat for EU28, Switzerland and Norway (last published figures)

- Overall, there was an increase of 1.1 mio people in EU28 during 1st January of 2018–2019
- …

2.1.2. FOOD INDUSTRY

- The food and beverage (F&B) manufacturing industry is the largest manufacturing industry in Europe in terms of turnover and employment
- The food industry is a fragmented sector with around 289 000 companies. About 99% of the F&B companies in Europe are SMEs, contributing 50% of the revenue
- …

2.2. MARKET STRUCTURE

2.2.1. BAKERY & CEREALS

Bakery consumption trends and forecast

	2014	2018/19	2023	CAGR%	CAGR%
	kt	kt	kt	2014-18/19	2018/19-23
Bread					
Biscuits					
Pastry					
Breakfast cereals					
Total					

Source: Giract, based on Canadean

- The European bakery & cereal market was estimated to be worth around EUR 160 bio in 2019 and is overall a very static to declining market, except for some eastern European countries where bakery consumption is lower than in western Europe, but growing at a higher rate than western Europe
- …

2.2.1.1 BREAD

- Bread production is relatively stable in most countries in Europe
- It is the largest consumed bakery product in Europe with over 70% of the total bakery & cereals demand
- …

2.2.1.2 BISCUITS AND PASTRIES

- Biscuits accounted for about 11% share in the European bakery & cereals products volume demand in 2018
- …

- Cakes/pastries account for about 13% of the total bakery & cereals volume demand in Europe
- …

2.2.1.3 BREAKFAST CEREALS

- The breakfast cereal market in Europe is valued over EUR 10 bio (2018)
- There are more than 75 companies actively producing breakfast cereals in Europe, however, Kellogg and Cereals Partners Worldwide (CPW) together account for 49% share by value sales
- …

Overview of protein ingredients use in bakery & cereals, 2018-2019 tons

	Bread	Biscuits	Pastry	Breakfast Cereals	Total
Soy Flour					
SPI					
Wheat Gluten					
Wheat Protein Hydrolysate					
Pea Protein Concentrate					
Rice Protein Concentrate					
Potato Protein Concentrate					
WPC 35					
WPC 80					
WPH					
MPI					
Egg protein					
Insect					

Source: Giract, based on interviews

- Wheat, dairy and egg proteins are conventional protein ingredients in the bakery segment
- Vital wheat gluten is largely used in breads to maintain the texture and elasticity
- Gluten-free or free from allergen trend is becoming a mainstream trend in breads, biscuits and other bakery products
- This has led to the use of plant-based proteins including soy, pea and potato proteins as replacement for gluten

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CURRENT AND FORECAST PROTEIN INGREDIENT DEMAND

CURRENT DEMAND

Current protein ingredient demand by end-use sector, 2018/19, Europe tons

	Bakery & Cereals	Dairy & Ice Cream	Processed Meat & Fish	Meat Alternatives	Snacks	Functional Foods	Clinical/Medical Nutrition	Infant Nutrition	Other Food Applications	Pet Food	Animal Feed	Total
Soy Flour												
SPC												
SPI												
SPH												
TSP												
Wheat Gluten												
Wheat Protein Isolate												
Wheat Protein Hydrolysate												
TWP												
Pea Protein Conc.												
Pea Protein Isolate												
Texturised Pea Protein												
Rice Protein Conc.												
Rice Protein Isolate												
Potato Protein Conc.												
Texturised Potato Protein												
Fava Bean												
Other (Oat Protein, etc.)												
WPC 35												
WPC 80												
WPI												
WPH												
MPC												

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	Bakery & Cereals	Dairy & Ice Cream	Processed Meat & Fish	Meat Alternatives	Snacks	Functional Foods	Clinical/Medical Nutrition	Infant Nutrition	Other Food Applications	Pet Food	Animal Feed	Total
MPI												
MPH												
Casein – caseinate												
Gelatin												
Hydrolysed collagen												
Egg protein												
HAP												
Fungal												
Insect												
Alfalfa												

Source: Giract, based on interviews and analysis

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- FORECAST DEMAND

Forecast protein ingredient demand by end-use sector, 2023, Europe tons

	Bakery & Cereals	Dairy & Ice Cream	Processed Meat & Fish	Meat Alternatives	Snacks	Functional Foods	Clinical/Medical Nutrition	Infant Nutrition	Other food applications	Pet Food	Animal Feed	Total
Soy Flour												
SPC												
SPI												
SPH												
TSP												
Wheat Gluten												
WPI												
WPH												
TWP												
Pea Protein Conc.												
Pea Protein Isolate												
Pea Protein Hydrolysate												
Texturised Pea Protein												
Rice Protein Conc.												
Rice Protein Isolate												
Rice Protein Hydrolysate												
Potato Protein Conc.												
Potato Protein Isolate												
Potato Protein Hydrolysate												
Texturised Potato Protein												
Corn												
Canola												
Chickpea												
Fava Bean												
Other (Oat Protein etc.)												
WPC 35												

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	Bakery & Cereals	Dairy & Ice Cream	Processed Meat & Fish	Meat Alternatives	Snacks	Functional Foods	Clinical/Medical Nutrition	Infant Nutrition	Other food applications	Pet Food	Animal Feed	Total
WPC 80												
WPI												
WPH												
MPC												
MPI												
MPH												
Casein – caseinate												
Other												
Gelatin												
Hydrolysed collagen												
Egg protein												
HAP												
Fungal												
Algal												
Insect												
Leaf												
Alfalfa												

Source: Giract, based on interviews and analysis

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CURRENT & FORECAST DEMAND SUMMARY

Current and forecast protein ingredient demand, Europe

		2018/9 tons	2023 tons	CAGR %
Soy	Soy Flour			
	SPC			
	SPI			
	SPH			
	Texturised Soy Protein			
Wheat	Wheat Gluten			
	Wheat Protein Isolate			
	Wheat Protein Hydrolysate			
	Texturised Wheat Protein			
Other plant-derived	Pea Protein Concentrate			
	Pea Protein Isolate			
	Texturised Pea Protein			
	Rice Protein Concentrate			
	Rice Protein Isolate			
	Potato Protein Concentrate			
	Texturised Potato Protein			
	Fava Bean			
	Other (Oat Protein etc.)			
Dairy	WPC 35			
	WPC 80			
	WPI			
	WPH			
	MPC			
	MPI			
	MPH			
	Casein – caseinate			
Other animal	Gelatin			
	Hydrolysed collagen			
	Egg protein			
	Hydrolysed animal protein			
Other	Fungal			
	Insect			
	Alfalfa			

Source: Giract, based on interviews and analysis

2.3. END-USER PERCEPTIONS

2.3.1. ASSOCIATED BRITISH FOODS (RYVITA, UK)

The Jordans and Ryvita Company,
Market Garden Road,
Biggleswade,
Bedfordshire, SG18 8QB
UK
Tel: + 44 808 2310011
www.ryvita.co.uk

Relevant products

Bakery products, breakfast cereals

Background

Ryvita is subsidiary of Associated British foods and produces baked foods, including cakes, breads, crispbreads, crackerbreads, etc., Ryvita was established as rye-based crispbread manufacturer in 1924. It has merged with the Jordans Company in 2009 to form Jordans and Ryvita.

It employs over 700 people in four manufacturing facilities in Poole and Poundbury in Dorset, as well as Biggleswade in Bedfordshire, UK. The company markets its products in UK and also exports across Europe, Canada and Australia.

Awareness and current use of protein ingredients

COMMODITY PROTEINS	Aware?	Tested?	Used?	Using?	Will use?
SMP/WMP	Y				
WPC					
Casein/caseinate					
Gelatin					
Soy flour (defatted)	Y				
Soy protein conc.					
Pea protein	Y			Y	
Wheat gluten	Y			Y	
Rice protein					
Potato protein					

SPECIALITY PROTEINS	Aware?	Tested?	Used?	Using?	Will use?
WPI/WPH	Y				
MPC/MPI/MPH	Y				
Egg proteins	Y				
Collagen					
Hydrolysed collagen					
HAP					
SPI	Y				
TSP/HSP/IWP	Y				
Fungal protein	Y				
Algal protein	Y				
Other – rye, oats, chickpea, barley	Y				

Ryvita uses wheat and rye based baked products. It uses pea protein concentrate along with rye flour to boost the protein content.

Consumers are interested in rye as whole grain with good taste and as source of protein. It uses flours and gluten for binding and texturizing effects.

It also claims that pea protein is used as an alternative for the egg protein especially for vegans. It claims non-GMO products.

Skimmed milk powder is added in some of its products for flavor development.

Company views on protein sources

Consumer trends such has high in fat, free from preservatives, artificial ingredients and vegan have been considered to develop consumer friendly products.

Consumers are choosing plant-based diets for healthy lifestyle. High fibre, protein enriched products with whole grains in its product range is purely based on consumer demand. Some of its products contain cheese, milk powder for flavor. Its vegan range of products contain gluten from wheat or rye, so allergen labelling is followed in it's the packaging.

Ryvita is also working on improving sustainability in packaging and ingredient sourcing. It tries to source raw materials from nearby locations and also prefers sustainable certified ingredients including palm oil.

All of its baked goods are non-GM and mill rye its own milling facility to control the supply chain.

2.3.2. B-FREE FOODS (BE)

10 Clyde Road
Dublin 4
Ireland
Tel: + 35 317 790 500
www.bfreefoods.com

Relevant products

Breads and rolls

Background

Bfree Foods was established in 2011 and has significant market share in UK free from breads market. It is currently selling in European countries including Scandinavia, exports to USA and Australia. It has currently over 15 products that are gluten-free. The company is working on improving the developing bread and bakery products without wheat or gluten. The company reported a turnover of EUR 10 mio in 2018.

Awareness and current use of protein ingredients

Bfree foods are gluten-free and are friendly for celiac consumers. All of its products are allergen-free (wheat, gluten, dairy, egg, nut and soy free).

It uses pea and potato proteins as functional ingredient in place of gluten. It uses gluten-free flours (rice, oats, corn starch), seeds for the volume and pea protein for the binding and elasticity of the breads.

It uses natural ingredients to prepare gluten-free foods with good taste and satisfies consumers with healthier products. It is planning to increase its exports up to 90% of its revenue by 2020.

COMMODITY PROTEINS	Aware?	Tested?	Used?	Using?	Will use?
SMP/WMP	Y				
WPC	Y				
Casein/caseinate	Y				
Gelatin	Y				
Soy flour	Y				
Soy protein conc.	Y				
Pea protein	Y	Y		Y	Y
Wheat gluten	Y				
Rice protein	Y	Y		Y	Y
Potato protein	Y	Y		Y	Y

SPECIALITY PROTEINS	Aware?	Tested?	Used?	Using?	Will use?
WPI/WPH	Y				
MPC/MPI/MPH	Y				
Egg proteins	Y	Y			
Collagen					
Hydrolysed collagen					
HAP					
SPI					
TSP/HSP/IWP					
Fungal protein					
Algal protein					
Other-chickpea, lentil					

Pea protein is preferred as it has potential to provide water holding and gelation properties to the dough.

Bfree foods are vegan friendly, so it avoids milk and milk proteins. These products are formulated to contain low fat, high fibre and are good source of proteins. It uses mix of flours, seeds and ancient grains such as teff, amaranth, chia seeds, quinoa seeds, toasted poppy seeds, gluten-free oats, flax seeds, sunflower, linseed, etc.,

2.3.3. BIOMAR (DK)

Vaerkmestergade 25, 6th Floor
8000 Aarhus C
Denmark
Tel: +45 86 20 49 70
www.biomar.com

Relevant products

Fish feed and aquaculture

Background

Biomar is founded in 1962 and produces aqua feeds for than 45 different fish and shrimp species in more than 80 countries. It has annual turnover of EUR 1.3 bio and has 1400 employees. It produces around 1.2 mio tons of aqua feeds

Awareness and current use of protein ingredients

COMMODITY PROTEINS	Aware?	Tested?	Used?	Using?	Will use?
SMP/WMP	Y				
WPC	Y				
Casein/caseinate	Y				
Gelatin	Y				
Soy flour (meal)	Y			Y	Y
Soy protein conc.	Y				
Pea protein	Y				
Wheat gluten	Y			Y	Y
Rice protein	Y				
Potato protein					

SPECIALITY PROTEINS	Aware?	Tested?	Used?	Using?	Will use?
WPI/WPH	Y			Y	
MPC/MPI/MPH					
Egg proteins					
Collagen					
Hydrolysed collagen					
HAP					
SPI					
TSP/HSP/IWP	Y				
Fungal protein					
Algal protein	Y				
Others					

It uses soy meal powder in the fish feed and does not uses concentrate and hydrolysate formats. It is producing around 100kt fish feed per year. People are aware of GMO issues. It is totally banned to export any GMO products to other countries like Turkey. It claims that 1/5th of the world uses their product.

Plant-based high-quality proteins are expensive and cannot be used for producing fish feed. Soya meal is cheap compared to other sources of protein.

Biomar is currently not planning to reformulate fish feeds to replace protein ingredients. Consumers are aware of GMO issues, but consumers are not showing interest in animal feed.

Soy allergy is a concern and the company is currently investigating this.

Company views on protein sources

Dairy-based protein ingredients are too expensive to be used in fish feed and it is not relevant. Biomar is investing in alternative protein sources such as algae and insect meal (black soldier fly and mealworm) in the fish feed. Insect meal have been incorporated at the levels of 7-8% of the formulations and have tried in the fish feed.

Some of the studies showed that insect meals in the fish feed will be accepted by the consumers. Biomar will use insect meals if it is available in the feasible and affordable prices.

2.3.4. DANONE (FR)

38 Avenue Marcel Paul,
93290 Tremblay-en-France,
France
Tel: +33 1 49 63 55 88
www.danone.com

Relevant products

Alpro Yogurt, Nutricia infant formula

Background

Danone (France) manufactures and markets probiotic dairy under Actimel and Activia brands to support gut or digestive health. It is working on probiotics, protein and plant-based ingredients. It has announced that it will be focussing on local, natural and authentic innovations such as RTD probiotics to capture young consumers. In March 2018, Danone launched Actimel probiotic yogurt-based drinks with reduced added sugar. In November 2014, Danone completed a four-year expansion of its infant formula production capabilities in Ireland by investing EUR 180 mio. Danone had invested EUR 240 mio in June 2016, to double its production capacity of infant nutrition products

Awareness and current use of protein ingredients

COMMODITY PROTEINS	Aware?	Tested?	Used?	Using?	Will use?
SMP/WMP	Y			Y	Y
WPC	Y			Y	
Casein/caseinate	Y			Y	Y
Gelatin	Y				
Soy flour	Y				
Soy protein conc.	Y			Y	
Pea protein	Y				
Wheat gluten	Y				
Rice protein	Y				
Potato protein	Y				

SPECIALITY PROTEINS	Aware?	Tested?	Used?	Using?	Will use?
WPI/WPH	Y			Y	
MPC/MPI/MPH	Y			Y	Y
Egg proteins	Y				
Collagen	Y				
Hydrolysed collagen	Y				
HAP	Y				
SPI	Y			Y	Y
TSP/HSP/IWP	Y				
Fungal protein	Y				
Algal protein	Y				
Other – almonds, nuts	Y			Y	Y

Danone uses SMP in its yogurt products. Danone Nutricia early life and medical nutrition products contains dairy proteins (caseinate, MPC, MPI, WPH), amino acid based hypoallergenic products for special medical purposes. It uses soy proteins in nutritional beverages for consumers allergenic with milk proteins.

Alpro products are dairy alternatives and are prepared using non-GM soy, cashew, almonds, hazelnuts, oats, rice and/or coconut. It has significant share in the plant-based dairy alternatives segment.

Consumers in Europe will clearly not accept GM foods. So, it prefers sourcing of raw materials and ingredients from non-GM cultivation countries, mainly within Europe to reduce footprint. It avoids importing soy protein ingredients from American countries to limit contamination of GM in its supply chain.

Allergenic ingredients are mentioned in the label to inform and help consumers to choose according to their body conditions.

It has strategy for sustainability such as sourcing locally produced ingredients and most of the by-products from processing are sold to the feed segment, to reduce wastage.

Company views on protein sources

Consumers are increasingly making choices based on health and nutritional benefits such as reduced sugar, zero added sugar, high fibre, high protein and low in fat.

Trends such as healthy snacking, flexitarianism, on-the-go snacking habits have influenced the innovation of dairy alternatives with nuts and soy-based drinks.

2.3.5. FUEL10K (UK)

The Fuel Station
Brahan
Dingwall, IV7 8EE
UK
Tel: +44 1349 865505
www.fuel10k.com

Relevant products

Protein enriched ready meals, cookies, dairy beverages

Background

Fuel10K manufactures protein enriched convenient food and beverages for breakfast such as drinks, porridge mix, cookies, granola bar, etc., It is headquartered in UK and has production facility in UK. It is fast growing sports nutrition brand selling in UK through supermarkets such as Tesco, Ocado, Waitrose, ASDA, etc.,

Awareness and current use of protein ingredients

It uses varying range of plant and dairy proteins to develop high protein products. Fuel10K uses soy, wheat, milk proteins such as soy protein isolate, hydrolysed wheat protein, milk protein concentrate, skimmed milk powder, wheat gluten, textured soya flour, etc., It has also vegan product with protein blend containing pea, rice, sunflower and potato proteins. Its products are designed for convenience, easy to consume on the go, vegetarian and to match health needs of the consumers.

COMMODITY PROTEINS	Aware?	Tested?	Used?	Using?	Will use?
SMP/WMP	Y	Y		Y	Y
WPC	Y	Y		Y	Y
Casein/caseinate	Y				
Gelatin	Y				
Soy flour	Y				
Soy protein conc.	Y	Y		Y	Y
Pea protein	Y	Y		Y	Y
Wheat gluten	Y	Y		Y	Y
Rice protein	Y	Y		Y	Y
Potato protein	Y	Y		Y	Y

SPECIALITY PROTEINS	Aware?	Tested?	Used?	Using?	Will use?
WPI/WPH	Y	Y		Y	Y
MPC/MPI/MPH	Y	Y		Y	Y
Egg proteins	Y	Y		Y	Y
Hydrolysed collagen	Y				
HAP	Y				
SPI	Y	Y		Y	Y
TSP/HSP	Y	Y		Y	Y
TWP/HWP/IWP	Y	Y		Y	Y
PPI	Y				
Fungal protein	Y				
Algal protein	Y				
Other					

Fuel10K uses around 10 tons of protein ingredients, largely soy, wheat and milk proteins. Hydrolysed proteins and isolates are also used for high quality protein content.

Plant based proteins are strongly competing with milk proteins and able to succeed in vegan and dairy free products. Allergen issues are given priority; all of its products are labelled with allergen information as contain/free from gluten, soy, dairy and nuts.

The company is trying to implement and operate in a sustainable manner, in terms of investment, developing new products and manufacturing. Nutrition, taste and convenience are always the primary factors to choose protein ingredients. The company is launching newer products and expanding its range such as low sugar variants, breakfast drinks, yogurt drinks, etc.

Company views on protein sources

More and more consumers are looking for healthier products. Vegetarian/vegan is certainly a popular trend favouring plant proteins.

Fuel10K has been working to meet the consumer demand for functional breakfast and healthy snacks segments. New plant proteins may be tried in future, based on the consumer trend