The Global Market For Plant Proteins - Competition With Dairy 2017-2021

Published February 2018
1. Introduction

2. Production of plant proteins

3. Key players and applications

4. Consumer product trends

5. Market outlook and future market trends

6. Conclusions and threat to dairy

7. Appendix
The building input blocks of this report:

**Abbreviations:**
- CAGR: Compounded Annual Growth Rate
- EUR: Euro
- LATAM: Latin America
- MEA: Middle East and Africa
- MPC: Milk Protein Concentrate
- MPI: Milk Protein Isolate
- MT: Metric Tonne
- NA: North America
- PoPI: Potato Protein Isolate
- PPC: Pea Protein Concentrate
- PPI: Pea Protein Isolate
- RoW: Rest of World
- RPC: Rice Protein Concentrate
- RPI: Rice Protein Isolate
- RTD: Ready-To-Drink
- SPC: Soy Protein Concentrate
- SPI: Soy Protein Isolate
- USD: US Dollar
- WhPH: Wheat Protein Hydrolysate
- WhPI: Wheat Protein Isolate
- WPC: Whey Protein Concentrate
- WPI: Whey Protein Isolate
Global soy protein market size and trends and major producers of soy protein

Production volume by ingredient, 2016

<table>
<thead>
<tr>
<th>Soy ingredient</th>
<th>Price range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soy flour</td>
<td>USD xxx per MT</td>
</tr>
<tr>
<td>Soy protein concentrate</td>
<td>USD xxx per MT</td>
</tr>
<tr>
<td>Soy protein isolate</td>
<td>USD xxx per MT</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Company</th>
<th>Estimated share of nutritional markets</th>
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Plant protein market sizes, trends and major producers
Roquette is the world’s major producer of pea protein, marketed under the Nutralys brand.

In January 2017, Roquette announced a USD 300 mio. investment in what they report will be the world’s biggest pea protein plant, located in Canada (Manitoba), where 30%, or 4.8 mio. MT in 2016, of global pea production takes place. Production is expected to commence in 2019.

In June 2017, Roquette announced a further EUR 40 mio. investment in its Vic-sur-Aisne (France) plant to expand production of pea protein.

By 2019, the Manitoba and Vic-sur-Aisne plants will have a combined pea processing capacity of around 250,000 MT annually, according to Roquette.

In addition to pea protein, Roquette also markets wheat protein hydrolysates under the Nutralys brand as well as corn and potato protein under other brands.

<table>
<thead>
<tr>
<th>Product</th>
<th>Application(s)</th>
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<tbody>
<tr>
<td>NUTRALYS PEA F</td>
<td>Food and nutritional</td>
</tr>
<tr>
<td>NUTRALYS PEA S</td>
<td>Food and nutritional</td>
</tr>
<tr>
<td>NUTRALYS PEA XF</td>
<td>Clinical, sport and weight management nutrition</td>
</tr>
<tr>
<td>NUTRALYS WHEAT W</td>
<td>Bakery/cereal, confectionery, dairy, pet, sports nutrition</td>
</tr>
<tr>
<td>VITEN wheat gluten</td>
<td>Bakery and fish food</td>
</tr>
<tr>
<td>GLUTALYS corn protein</td>
<td>Animal feed</td>
</tr>
<tr>
<td>TUBERMINTE potato protein</td>
<td>Animal feed, fermentation</td>
</tr>
<tr>
<td>Agility chlorella</td>
<td>Functional foods and weight management</td>
</tr>
</tbody>
</table>

Source: Roquette
Global protein production - plant and dairy proteins

Global dairy and plant protein volumes 2016

Dairy and plant protein production volumes and prices

Source: 3A Business Consulting
Applications of soy proteins

- Soy protein isolate applications
  - Plant and dairy protein application volumes and trends

- Soy protein concentrate applications
Between 2011 and 2016, 8,937 new products containing whey protein concentrate were launched. North America was the most active region, accounting for more than half of product launches containing WPC. The number of products launched with WPC between 2011 and 2016 has grown 80%, or 16% annually on average.

The most active companies in terms of product launches with WPC are nutritional companies. Myprotein has been the most active company, followed by Nutricia. The 10 companies launching most product collectively account for 21% of product launches with WPC between 2011-2016.

The sports nutrition segment has seen the most new product launches with whey protein concentrate followed by infant formula. Several product launches with WPC is also seen in a wide range of food categories as well as in supplements and clinical nutrition.

Source: Innova Market Insights
New product launches / consumer product trends - Whey Protein Concentrate (2)

<table>
<thead>
<tr>
<th>Company</th>
<th>Date</th>
<th>Category</th>
<th>Ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myprotein</td>
<td>April 2016</td>
<td>Sports nutrition</td>
<td>Whey protein concentrate (96%), emulsifier, flavoring, sucralose</td>
</tr>
<tr>
<td>Nutricia</td>
<td>November 2016</td>
<td>Baby formula/milk</td>
<td>Lactose from milk, hydrolyzed whey protein concentrate, vegetable oils, galactooligosaccharides etc.</td>
</tr>
<tr>
<td>Abbott</td>
<td>January 2016</td>
<td>Baby formula/milk</td>
<td>Skimmed milk, lactose, vegetable oils, whey protein concentrate powder, maltodextrin, GOS, phospholipid etc.</td>
</tr>
<tr>
<td>Iovate</td>
<td>January 2016</td>
<td>Sports nutrition</td>
<td>Protein blend (micellar whey, whey protein concentrate, whey protein isolate, whey protein isolate 97% whey protein hydrolysate)</td>
</tr>
<tr>
<td>Dymatize</td>
<td>February 2016</td>
<td>Sports nutrition</td>
<td>Maltodextrin, protein blend (whey protein concentrate, milk protein isolate, whey protein isolate, whey protein hydrolysate) etc.</td>
</tr>
<tr>
<td>Kraft</td>
<td>October 2016</td>
<td>Cheese</td>
<td>Milk, water, whey, whey protein concentrate, canola oil, maltodextrin, salt, sodium phosphate etc.</td>
</tr>
</tbody>
</table>

New product launches with plant and protein ingredients
Pea proteins are predicted to exhibit the highest growth rate of between 10-11% per year reaching 40,000 MT by 2021, followed by rice proteins that has already seen immense growth in the beginning of the review period, although from a low base. Whey protein isolate outperformed both the plant protein market as well as other dairy proteins between 2012-2016 and is expected to remain the most dynamic dairy protein. Soy proteins are headed towards maturity but is still showing healthy growth relative to large volumes between 3-4% per year towards 2021. Wheat and potato proteins are growing at a relatively slow pace with wheat gluten and protein suffering from unhealthy perception by many people and low protein quality.

Historic and forecasted growth of respective dairy and plant proteins.
Final assessment of competition between plant and dairy proteins
Global Plant Protein Report – project management and costs

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- Junior consultant – Daniel Pedersen

Report available in PDF format – in total approx. 100 slides – from February 2018

EUR 4,700