Vegan alternatives for dairy, meat and deli products

Complex trend products made simple, with stabilising and texturing systems from Hydrosol
More and more consumers are giving up animal products, especially the flexitarians, who are reducing their meat consumption for health or ethical reasons. They are the growth drivers in this category. As a result of their shopping behaviour, demand for sausage and meat alternatives is rising steeply. Soy meat, tofu, seitan and tempeh are the substitutes of first resort.

As offerings in stores multiply, consumer expectations are rising. The success of modern vegetarian products is due to the fact that they give the consumer the familiar taste and texture experiences.

Sales of vegetable substitutes for dairy have also risen sharply in recent years, around the world. For the development of non-dairy alternatives to cheese, in addition to appearance, flavour and technological equivalency, economic and production technology factors play a central role.

Modern system solutions for vegan alternatives combine enjoyment, convenience and healthy nutrition.

New raw material sources for innovative vegetarian products

We identify and develop new raw materials for the growing market for vegetarian and vegan foods. Our food experts focus on testing these materials for function and quality, so they can reliably assess their potential uses and typical properties. Developing good-tasting products takes extensive knowledge, of proteins from different vegetable sources as well as of plant fibres and their use in high-end vegan and vegetarian products. That is the basis for clean label vegetarian products that meet high expectations.

Raw materials that play a key role in vegan foods – coconut, grains, sunflower seeds, soybeans, potatoes, peas
Our stabilising systems for vegan alternatives to dairy products like cooking cream and drinks provide balanced sensory properties, familiar consistency and good processing characteristics. We don't focus just on soy, and the range is constantly being expanded.

**Neutral products**

<table>
<thead>
<tr>
<th>Application</th>
<th>Stabilising system</th>
<th>Properties</th>
<th>Dosing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternatives to milk</td>
<td>Stabisol GC 1</td>
<td>Based on various vegetable sources</td>
<td>0.1%</td>
</tr>
<tr>
<td>Alternatives to milk</td>
<td>Stabisol SH 50 V</td>
<td>Based on sunflower and oats</td>
<td>3.1%</td>
</tr>
<tr>
<td>Chocolate pudding</td>
<td>Hydrobest Pudding</td>
<td>Based on various vegetable sources</td>
<td>6.5%</td>
</tr>
<tr>
<td>Pudding with vanilla flavour</td>
<td>Hydrobest Pudding</td>
<td>Based on various vegetable sources</td>
<td>5.0%</td>
</tr>
</tbody>
</table>

**Sour products**

<table>
<thead>
<tr>
<th>Application</th>
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<th>Properties</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Alternatives to yogurt</td>
<td>Stabisol JFK-1</td>
<td>Based on various vegetable sources</td>
<td>2.7–4.5%</td>
</tr>
<tr>
<td>Alternatives to yogurt</td>
<td>Stabisol JVCL 1</td>
<td>Clean label, based on various vegetable sources</td>
<td>5.5%</td>
</tr>
<tr>
<td>Alternatives to sour cream</td>
<td>Stabisol JFK-1</td>
<td>Based on various vegetable sources</td>
<td>3.5%</td>
</tr>
<tr>
<td>Alternatives to cream cheese</td>
<td>Stabisol FK Vegan 4</td>
<td>Based on field beans and potatoes, just one E-number</td>
<td>9.8%</td>
</tr>
</tbody>
</table>
### Alternatives to cream

<table>
<thead>
<tr>
<th>Application</th>
<th>Stabilising system</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Vegetable-based cooking cream with 10 – 30 % fat</td>
<td>Stabisol Vega 406 FT</td>
<td>Flexible fat content and viscosity, good whitening</td>
<td>2.4 – 2.8 %</td>
</tr>
<tr>
<td>Vegetable-based cooking cream with 12 – 25 % fat</td>
<td>Stabisol Vega 410 V</td>
<td>Medium cooking viscosity</td>
<td>3.0 – 3.2 %</td>
</tr>
<tr>
<td>Vegetable-based cooking cream with 12 – 25 % fat</td>
<td>Stabisol Vega 420 P</td>
<td>Soy-free</td>
<td>3.0 %</td>
</tr>
<tr>
<td>Vegetable-based whipping cream with 20 % fat</td>
<td>Stabimuls ICR 20 I</td>
<td>Low dosage, stable foam, high whip volume, freeze-thaw stable variants possible</td>
<td>2.5 %</td>
</tr>
<tr>
<td>Vegetable-based whipping cream with 25 – 28 % fat</td>
<td>Stabimuls Vega SSI 14 GF</td>
<td>Stable foam, high whip volume, freeze-thaw stable variants possible</td>
<td>1.4 %</td>
</tr>
<tr>
<td>Alternatives to coffee cream</td>
<td>Stabisol GM 1</td>
<td>Good whitening</td>
<td>0.1 %</td>
</tr>
</tbody>
</table>

### Alternatives to cheese

<table>
<thead>
<tr>
<th>Application</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Melted topping</td>
<td>Stabisol PCVB</td>
<td>Analogue block cheese for grating</td>
<td>4.5 %</td>
</tr>
<tr>
<td>Alternatives to sliced cheese</td>
<td>Stabisol PCVS 3</td>
<td>Sliceable analogue cheese, very pleasing taste</td>
<td>3.0 – 4.55 %</td>
</tr>
<tr>
<td>Alternatives to grilling cheese</td>
<td>Stabisol PCVBQ</td>
<td>Thermostable</td>
<td>3.3 %</td>
</tr>
</tbody>
</table>

### Vegan ice cream

<table>
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<tr>
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<th>Dosing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternatives to ice cream</td>
<td>Stabisol IC V 1</td>
<td>Creamy consistency, for combining with milk alternative drinks like rice and almond milk</td>
<td>0.9 %</td>
</tr>
</tbody>
</table>
Research and development:
The future belongs to synergies.

In developing exact, customer-specific stabilising and texturing systems we test the right combinations from among hundreds of individual ingredients. Knowing how the individual raw materials will interact and how to develop the optimum synergistic effects requires a great deal of specialist knowledge and experience.

What you can expect from us:
- Development of tailor-made solutions for stabilising and texturing
- Development of new formulations and recipe improvements
- Process improvements
- Versatile applications lab with extensive test facilities
- Assistance with product testing
- Education, training, seminars
- Help with new marketing concepts
- On-site consulting

We have innovative ideas – and excellent technology to implement them.

In Wittenburg near Hamburg, Hydrosol operates one of the most advanced compounding lines in Europe. Precision mixing systems and advanced fluidised bed technology enable the production of customer-specific functional systems of the highest quality.

Our standards and certifications:
- FSSC 22000
- Allergen management
- Kosher and halal management
- Organic seal

Product development and applications technology in over 3000 m² in our Technology Centre near Hamburg, Germany

From single ingredient with single effect ...

Stabilising system

... to Hydrosol stabilising systems with multiple effects.

Our compounding plant in Wittenburg is among the most advanced in Europe.
Vegan alternatives to meat products

Hydrosol all-in compounds for vegetarian and vegan cold cuts and for alternatives to boiled sausage and ground meat deliver familiar bite, authentic mouth feel, appetising appearance and pleasing basic seasoning. They also have clear health benefits – the resulting meat substitutes have much less fat and a favourable fatty acid profile, and are free of cholesterol, nitrites and phosphates.

**Emulsified products**

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<th>Application</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Vegan cold cuts</td>
<td>HydroTOP Vegan</td>
<td>All-vegetable all-in system. Optimum bite and excellent sliceability, gluten-free</td>
<td>15 % in the final product</td>
</tr>
<tr>
<td>Vegan hot dogs</td>
<td>HydroTOP Vegan HT</td>
<td>All-in system, outstanding texture for eating hot</td>
<td>21 % in the final product</td>
</tr>
<tr>
<td>Vegan hot dogs</td>
<td>HydroTOP Vegan HT 1S</td>
<td>Soy-free</td>
<td>14 % in the final product</td>
</tr>
<tr>
<td>Vegan bratwursts</td>
<td>HydroTOP Vegan Bratwurst</td>
<td>All-in system with typical seasoning, outstanding texture for eating hot</td>
<td>21 % in the final product</td>
</tr>
<tr>
<td>Universal binding system</td>
<td>HydroTOP High Gel 30</td>
<td>Flexible system for further manufacture, for example nuggets</td>
<td>3 – 8 % in the final product</td>
</tr>
</tbody>
</table>

**Texturate-based products**

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Vegan meatballs</td>
<td>HydroTOP Vegan Patty</td>
<td>Pleasingly firm, juicy, meaty bite, many uses</td>
<td>21 % in the final product</td>
</tr>
<tr>
<td>Vegan filet strips</td>
<td>HydroTOP Vegan Filet Stripes</td>
<td>Like fibrous muscle tissue structure, many uses</td>
<td>19 % in the final product</td>
</tr>
<tr>
<td>Vegan nuggets</td>
<td>HydroTOP Vegan Nuggets</td>
<td>All-in compound for products with typical nugget structure</td>
<td>20 % in the final product</td>
</tr>
</tbody>
</table>

**Sausage casings**

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Vegan sausage casings</td>
<td>HY-SmartCasing VR</td>
<td>Hydrocolloid-based system for coextrusion lines</td>
<td>9.5 %</td>
</tr>
</tbody>
</table>
Other trend products for vegan enjoyment are our stabilising systems for egg-free deli creams. Using Stabimuls MR series integrated compounds, fine emulsions can be made with different fat contents. The stabilising systems are in powder form and are cold-soluble, and simple and economical to use.

**Alternatives to mayonnaise**

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</tr>
</thead>
<tbody>
<tr>
<td>Alternatives to low fat mayonnaise with 10 – 20% fat</td>
<td>Stabimuls M Extra</td>
<td>All-in-compound for cold manufacture</td>
<td>6.0 – 8.0 %</td>
</tr>
<tr>
<td>Alternatives to low fat mayonnaise with 24 – 30% fat</td>
<td>Stabimuls MR 52</td>
<td>All-in compound for cold manufacture with emulsifier, emul. starch, creamy shiny structure</td>
<td>2.9 – 4.5 %</td>
</tr>
<tr>
<td>Alternatives to low fat mayonnaise with 50% fat</td>
<td>Stabimuls MR 51 MV</td>
<td>All-in compound for cold manufacture, shiny structure</td>
<td>2.3 – 2.5 %</td>
</tr>
<tr>
<td>Alternatives to low fat mayonnaise with 10 – 70% fat</td>
<td>Stabisol MMULTI 1</td>
<td>Combination compound for cold manufacture, various fat contents</td>
<td>0.5 – 7.5 %</td>
</tr>
</tbody>
</table>

**Vegan toppings**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Topping based on mayonnaise technology with 30% fat</td>
<td>Stabimuls Topping 30</td>
<td>All-in compound with flavouring components, with starch, many flavours possible</td>
<td>4.0 – 6.0 %</td>
</tr>
</tbody>
</table>
Hydrosol are The Stabiliser People – your experts for tailor-made vegetarian and vegan solutions. We are an international company with solid growth and a worldwide network of subsidiaries. We develop and produce custom stabilising systems for meat and sausage products, fish products and dairy foods, ice cream, desserts, deli foods and ready meals.

**And what can we do for you?**

**Hydrosol at a glance:**
- International market expertise in texturing systems
- Pilot plants for meat, fish, deli foods, milk, ice cream, and spray drying
- State-of-the-art manufacturing with fluidised bed technology for manufacturing agglomerated products
- A member of the Stern-Wywiol Gruppe
- 40 years of experience in applications research

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