High oleic products from AAK

AAK offers High Oleic (HO) products with low levels of saturated fat and high oxidation stability – and the HO-rapeseed with Swedish origin.

Plant breeding techniques have yielded new types of both rape-seed and sunflower oil. The greatest benefits of the HO-oils is their low saturated fat content, which gives them an excellent health profile. They also have very high oxidation stability, making them suitable for frying. HO-oils are additionally used in baby food mixes and other applications with specific requirements regarding fatty acid composition and demanding high oxidation stability.

Grown in many countries, sunflower is the HO-oil that occurs in the greatest volumes. Availability of rapeseed oil is more limited, but it is used in an increasing number of applications.

From end of 2011, all HO-rapeseed procurement will be of Swedish origin.

**Nutritional profile**

Improvement of nutritional profiles has become increasingly important to customers.

The use of HO-oils can make fried products healthier. It enables a reduction of up to 80 percent in the amount of saturated fat in the finished product, with maintained quality.

HO-rapeseed oil combines high oxidation stability with the lowest saturated fat content on the market. It also contains the essential fatty acids linoleic (Omega 6) and alpha-linolenic acid (Omega 3), as well as vitamin E (tocopherol) and vitamin K.

### Typical fatty acid composition (%)

<table>
<thead>
<tr>
<th>Fatty acids Type of oil</th>
<th>Rapeseed</th>
<th>HO-rapeseed</th>
<th>Sunflower</th>
<th>HO-sunflower</th>
<th>Palm olein</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturated</td>
<td>7</td>
<td>7</td>
<td>10</td>
<td>10</td>
<td>45</td>
</tr>
<tr>
<td>Monounsaturated (Oleic acid)</td>
<td>64</td>
<td>77</td>
<td>25</td>
<td>85</td>
<td>43</td>
</tr>
<tr>
<td>Polyunsaturated</td>
<td>29</td>
<td>16</td>
<td>64</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Omega-6</td>
<td>20.5</td>
<td>14</td>
<td>64</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Omega-3</td>
<td>8.5</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Excellent for deep frying

Deep frying is one of the most demanding food preparation processes, involving extremely tough oxidation. Oils gradually breaks down when exposed to high temperatures over long periods.

In the figures below, Fritex 20 (palm oil-based) HO-rapeseed and HO-sunflower oil are compared. Results are based on batch frying of french fries at 180 °C.

A variety of methods are available for showing how well an oil resists degradation during frying. One of them is to measure the polar component content of the frying oil. Polar components are formed through oxidation, hydrolysis and other reactions during the degradation process.

Figure 1 shows that fewer polar components are formed during frying with HO-rapeseed oil than with the other two oils, which have around the same level.

Figure 2 shows the result of sensory assessment of french fries cooked in deep frying oil which had been used for frying for 12 hours. This is a timetable similar to that of the turnover in industrial deep frying processes. The results show slight changes in the flavour of the three oils. HO-oils are well suited for use as deep frying oils, but if both changes in flavour and the break-down characteristics are taken into account, rapeseed oil certainly performs best.

Glossary

**Hydrolysis** – Breaking down of oil in the presence of water.

**Oxidation** – Breaking down of oil in the presence of oxygen.

**Polar components** – Substances that are formed during the breaking down of oil.
HO-rapeaseed and HO-sunflower oil can be used alone or in combination with other oils — the choice depends on cost, the need to reduce saturated fat content and taste preferences. As always, we recommend that users carry out practical tests to obtain an accurate picture of the quality of the end product, both in a fresh state and after storage.

**Cultivation of HO-raw materials**

HO-sunflower has been on the market for more than 10 years. Cultivation began at an early stage in France, which remains the primary supplier of this oil to the European market. In recent years, production has also increased sharply in Argentina.

HO-rapeaseed is a raw material with a strong growth rate. Working closely with farmers in Sweden enables AAK to guarantee availability of HO-rapeaseed oil for our customers. AAK controls the value chain, from seed to oil product, and can assure traceability throughout the whole process.

AAK’s HO-rapeaseeds comes from farms in Sweden and the rest of Europe. From end of 2011, all HO-rapeaseed procurement will be of Swedish origin.

**Packaging**

AAK can offer a wide range of packaging solutions.

### Our product range

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Fritex HORO</th>
<th>Fritex HOSO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials</td>
<td>Rapeseed rich in oleic</td>
<td>Sunflower seed rich in oleic</td>
</tr>
<tr>
<td>Origin</td>
<td>Europe: From end of 2011: Sweden</td>
<td>Europa</td>
</tr>
<tr>
<td>Packaging</td>
<td>Bulk Container 900 kg, Drums 190 kg</td>
<td>Bulk Container 900 kg, Drums 190 kg</td>
</tr>
</tbody>
</table>

Please see the table above for options available by product.

Bulk users, of both HO-oils and other bulk products, can use AAK’s Vendor Management Inventory (VMI) service, in which all the customer needs is measuring equipment on the tanks and an Internet connection. AAK is committed to ensuring that customers always have as much oil as they need – whenever they need it and for whatever application.

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Better nutritional profile with lower saturated fat content

High oxidation stability