Fats and oils are important raw materials for oleochemistry as well as for nutrition. Of the three main groups of natural oils and fats, tallow serves with 70% as the most important raw material for oleochemistry, followed by lauric oils (15%) and other vegetable oils (8%).

The majority of these oils are not being produced in Europe. The oleochemical industry, however, has a need for certain chemical characteristics in its raw materials that can hardly be obtained from European agriculture in its present state. The special chemical requirements are: sources of high-concentrate oleic acid, or high erucic acid and high lauric acid, oils with functional groups, and waxes in seeds. Examples are given for alternative new oil crops as well as 'old' crops that have been custom-tailored by plant breeding for oleochemical needs.

The oleochemical industry is very supportive of such new methods in European agriculture and would welcome more cooperation. This would not only help with diversification in crop rotation but also help prevent surplus production and subsidy.

Fats and oils are important raw materials for nutrition as well as for the oleochemical industry. Twenty per cent of the world supply of oils and fats (57 million tons) is being used by the industry. In Europe this amounts to 1.7 million tons or 3% of the total world production; a comparatively small amount (Figure 1).

Most of those oils, however, are not being produced in Europe. Even tallow, almost the cheapest source of fat used by the industry, comes preferably from non-European countries, because such imported tallow is of superior quality. A similar situation is given for vegetable oils: most of those oils like coconut oil, palm kernel oil and soyabean oil are produced outside of Europe; of the fats and oils that are produced in Europe, only rapeseed oil has some importance as a raw material for European oleochemistry.

These oils are used as starters for quite a number of different chemical pathways that lead to a whole bunch of highly diversified substances. Some of the final products can actually be synthesised either with petrochemical or with oleochemical raw materials. The oleochemical way, however, is building on a generic base: almost unlimited natural resources, whereas petrochemistry is based on limited fossil resources. When comparing the chemical formula of paraffin and fatty acid, there appears a striking similarity that explains their exchangeability (Figure 2).
### World Oil and Fat Production

<table>
<thead>
<tr>
<th>Category</th>
<th>Mio Metric Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetable Oils</td>
<td>43.5</td>
</tr>
<tr>
<td>Animal Fats</td>
<td>16.4</td>
</tr>
<tr>
<td>Marine Animal Oils</td>
<td>1.6</td>
</tr>
</tbody>
</table>

#### Food (World)

- **80%**
- 47.9

#### Non-Food (World)

- **20%**
- 12.0

- Animal Feed: 3.6
- Chemical and Technical: 12.0

#### Western Europe

- Animal Feed: 0.8
- Chemical and Technical: 1.7

#### Chemical and Technical Consumption in Western Europe

- <3%

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**Fig. 1. Oil and Fat Consumption in 1982**

Estimated in Million Tons

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**Fig. 2. Comparison of Chemical Formula**