CBI Product Factsheet: Linseeds in Europe

‘Practical market insights into your product’

The dynamics of the European linseed market have changed in recent years. European demand for linseeds is growing. Canada is making a comeback as a supplier, after production for export dropped sharply for many years. In Europe linseeds are increasingly used for direct human consumption because of their nutritional value. The product is also finding more and more applications within niche segments such as the organic market segment.

Product definition
Linseed or flaxseed is the seed from the flax plant (*Linum usitatissimum*), a member of the Linaceae family. The thin yellow or brown seed is one of the oldest cultivated crops, originating from Mediterranean and Western Asia. The seeds are mainly grown in regions with lower winter temperatures and processed for their nutritional value and high content of fibre and oil. Russia, China, Kazakhstan and Argentina are some of the largest global producers of linseed.

The main market for human consumption of linseed can be found within the bakery and health food segments. Whole or broken seeds are used as food ingredients in baking and confectionery industries, while crushing the linseed produces both linseed oil and the fibre-rich linseed meal as by-product. The latter is mostly used as animal feed. Linseed is also making major strides in recent years, being used in seed mixes for snacks and breakfast products, as part of the healthy foods trend.

The use of linseeds (and linseed oil) in the food sector is relatively small when compared to its several industrial uses. Linseed oil is used extensively as an ingredient in paints, varnishes and many other industrial products.

Codes for sesame seeds:
- Harmonised System (HS) → linseed, whether or not broken, is included in:

<table>
<thead>
<tr>
<th>HS code</th>
<th>Description</th>
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<tr>
<td>1204 00 90</td>
<td>Linseed, whether or not broken, excluding for sowing.</td>
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Product specification

Quality
General
- Two similar types of linseed are commonly traded: brown and yellow (golden) seeds. The different types are closely related in terms of oil content, but the brown seeds contain more alpha-linolenic fatty acids (59%) when compared to the yellow seeds (51%). The nutritional value of the brown linseed can therefore be considered to be slightly higher.
- Both types of linseed are used for human consumption. The yellow linseeds are preferred for cooking purposes, as they blend better with various dishes.
- The best time to transport linseed is directly after harvest. However, the storage life of linseeds is estimated to be around 12 months, at a moisture content of 9-11%. The shelf life of linseed meal is considerably lower and the product should be kept cool and in vacuum.
- Whole linseeds are often not digested by the human body, preventing the intake of nutrients. To benefit from the nutritional value, the whole seeds can be broken, ground or milled.
- Among other elements, linseed grading is determined by the seed’s odour. Seeds that are classified as off-odour include seeds containing a ‘musty’, ‘sour’, or ‘commercially objectionable foreign’ odour and will be graded lower in quality. Heat-related damage (during transportation) is an important cause of off-odour.
- Seed uniformity also influences the quality grading for linseeds. A high presence of dark/discoloured, broken/damaged and immature seeds is detrimental to seed quality.
- For further information on quality and grading of linseeds, refer to the Grain Inspection Handbook – Flaxseed (US Department of Agriculture).
- It is also important to prevent adulteration and contamination of seeds by foreign materials (e.g. dust) by keeping facilities and equipment clean.
- Ensure proper storage and transportation (see ‘Packaging’).

Organic (if relevant)
- Comply with organic standards for the production of linseed. Refer to the section on ‘Niche requirements’ for further details on organic production and labelling.

Labelling
- Ensure traceability of individual batches.
- Use English for labelling purposes, unless your buyer has indicated otherwise.
- Labels must include the following:
  - Product name
  - Manufacturer’s lot or batch code
  - Whether or not the product is destined for use in food products
  - Name and address of exporter
  - Product’s country of origin
  - Shelf life: Best-before date / use-by date
  - Net weight / volume in metric units
  - Recommended storage conditions
- Organic (if relevant): Name / code of the certifying body and certification number.
Packaging

- Linseed is primarily packed as break-bulk cargo, e.g. flat jute fabric bags; PP bags; multiwall paper bags. Using transportation in bulk for linseeds is uncommon, due to its easy germination characteristic. In the lower volume segments, such as snack, bakery and direct consumption, bagged linseed is transported in containers.
- Ensure preservation of quality by:
  - Thorough cleaning of the holds or containers before loading the seeds.
  - Protecting the cargo from moisture during loading, as to avoid mould, spoilage and self-heating.
  - Contact with metal components should be avoided to prevent rancidness of the linseed.
  - Ensuring appropriate temperature, humidity / moisture and ventilation conditions during transportation. The linseed causes toxic CO₂ levels during unventilated transport. Linseed is easily oxidised and should therefore be kept from exposure to sun and heat.
  - Protecting the cargo from pests such as beetles, moths, etc.

Trade statistics

Imports

Figure 1: Total imports of linseeds in Europe, 2011–2015 in 1000 tonnes

- In general, European imports of linseeds have been increasing. In 2015, linseed imports to Europe amounted to 912 thousand tonnes (€458 million). The last five years have shown an annual volume increase of 6.8%, and an annual value increase of 6.5%. It is not possible to distinguish between linseeds imported for oil-crushing or for other end uses.
- Belgium is the largest importer of linseed in Europe (63% share in volume in 2015), mainly due to its position as a trade hub for this product, via the port of Antwerp. Belgium recorded an annual average volume increase of 8.1% and an average annual value increase of 7.6% since 2011.
- Germany is another major importer of linseeds in Europe, with an 18% share in total imports. Since 2011, Germany registered a significant annual growth of 7.8% in volume and 7.2% in value.
- Poland and the Netherlands are also significant importers of linseeds in Europe, accounting for respective shares of 4.2% and 3.1% in 2015. Dutch imports of linseeds have decreased at an average annual rate of 11% in both volume and value. Poland’s imports increased sharply at an average annual rate of 40% in volume and 35% in value.
**Tips:** Follow developments in the European trade for linseeds and identify developments such as the emergence of new suppliers and decline of established ones. An interesting source to get acquainted with the European market and its trade dynamics is the website of the European Commission’s Export Helpdesk. The website of FEDIOL also provides annual industry statistics for linseeds and centralises publications which are relevant to the oilseed sector.

**Figure 2:** European linseed imports; the largest markets (in terms of 2015 volume) exporting linseeds to or within Europe, 2011–2015 in 1000 tonnes

- **Source:** Eurostat, 2016

- The largest suppliers to or within Europe in 2015 were Russia (29%), Kazakhstan (23%) and Belgium (17%).
- In 2009, genetically modified linseed (which is not allowed in the European Union) sourced in Canada was discovered being imported into Europe, resulting in a dramatic drop in the share of Canadian exports to Europe, from 41% in 2009 to 15% in 2015 (in volume). The damaged reputation of Canadian linseed and the country’s lowered competitiveness resulted in a decline in linseed production in Canada.
- The decrease in global production of linseeds led farmers in the Black Sea area to increase cultivation, resulting in a significant increase in output in the period 2012–2014 of countries such as Kazakhstan and Russia (replacing Canada as Europe’s largest supplier).
- After 2009, Ukraine also increased its linseed cultivation. However, due to the political turmoil starting in late 2013, Ukrainian linseed supply has been hampered and is expected to remain so in the next year. In 2015, the country accounted for 0.9% of total linseed imports in the European Union.
- The share of European imports originating from developing countries was 25% in 2015, amounting to 227 thousand tonnes (£108 million). In the period 2011–2015, the average annual volume growth from developing countries suppliers was 19%. This was due to the surge in linseed imports coming from Kazakhstan, one of the largest producers globally. The country benefitted from the drop in supplies coming from Canada, increasing its share in the European market. However, Canada is expected to make a comeback as an important supplier of linseed as the problem with genetically modified linseeds is no longer an issue.

**Tips:** Identify your potential competitors and learn from them in terms of:
- Marketing: website, social media, trade fair participation, etc. Well-structured websites are for example: DM Global Marketing (Canada) and Rapid Overseas (India).
Product characteristics: origin, quality, oil content, etc.
Value addition: certifications, processing techniques.

Exports

Figure 3: Exports of linseeds from the European market; the largest markets importing linseeds from Europe (in terms of 2015 volume), 2011–2015 in 1000 tonnes

- Total European exports and re-exports of linseed amounted to 304 thousand tonnes (£190 million) in 2015. In the period 2011–2015, the imported volume increased by 7.1% annually while the value increased by 9.1% annually. Linseed exports and re-exports correspond, to a large extent, to trade within the European Union.
- Belgium is the largest re-exporter in Europe, accounting for 69% of total exports and re-exports in 2015. Since 2011, the average annual volume of Belgium’s exports and re-exports increased by 15% and with a similar percentage for value. Belgium can be an interesting entry point for suppliers as Belgium mainly imports from developing countries and then re-exports to other European countries.
- Other important exporting and re-exporting countries are the Netherlands (7.7% share in volume), Germany (6.4%) and the United Kingdom (5.1%). In the United Kingdom, the average annual volume and value of exports and re-exports has declined since 2011 (by 25% and 11% respectively). The Netherlands registered an annual volume increase of 3.8% and a value increase of 10%. Exports and re-exports from Germany increased annually by 13% in both volume and value.
- Poland has also emerged as an important exporter and re-exporter of linseed. In 2015, the country accounted for 4.7% of total exports and re-exports, after recording an annual average increase of 192% in volume and 184% in value in 2010–2014.
- Germany is Europe’s largest export destination for linseeds, with a share of 49% in volume, followed by the Netherlands (14%) and France (8%). Linseed is commonly processed as food ingredient in the bakery and confectionery industry, which is especially common in Germany. Its taste and nutritional value make linseed a popular ingredient for products such as bread, biscuits and cereal bars. It is also crushed for its oil.
Tip: The website of FoodDrinkEurope could be an interesting source to understand consumption patterns of food products, including the use of linseeds, across different European countries.

Consumption

Figure 4: Apparent consumption\(^1\) of linseed in the EU, in 1000 tonnes

Sources: FAOSTAT, 2016; Eurostat, 2016
* The latest FAOSTAT production statistics (2014) are included in the calculation of apparent consumption for 2015.

- The total apparent consumption of linseed in Europe amounted to 721 thousand tonnes in 2013–2014, showing an average annual increase of 3.0% since 2011.
- Apparent consumption of linseeds in Europe is by far the largest in Belgium, reaching 368 thousand in 2015. Note that apparent consumption includes industrial demand, such as for crushing activities. Belgium exports a share of their processed linseed products under a different trade code (example: linseed oil).
- Other European countries with significant consumption of linseed are Germany (154 thousand tonnes) and France (43 thousand tonnes).
- Total crushing of linseed in Europe amounted to 632 thousand tonnes in 2014. The majority of crushing is done in Belgium (58% share in volume) and partly in Germany (20%).

\(^1\) Apparent consumption: defined as a calculation of (imports – exports) + production.
Production

Figure 5: Production of linseeds in Europe, in 1000 tonnes, 2010–2014

Source: FEDIOL, 2016

- Total production of linseed in the European Union amounted to 112 thousand tonnes in 2014, having decreased at a rate of 11% between 2010 and 2014. Compared to the level of apparent consumption (755 thousand tonnes in 2013), it becomes clear that European Union’s production only supplies a small share of its total market demand.
- The largest producer of linseed in the European Union is the United Kingdom, at 39 thousand tonnes in 2014, accounting for around 35% of total production in the European Union. Production in the United Kingdom declined between 2010 and 2014 at an annual rate of 14%.
- Sweden and France are also important producers of linseeds in the European Union. Sweden, with a total production of 11 thousand tonnes in 2014 (10% of European Union production) and France with a total production of 23 thousand tonnes (21% of European Union production). Sweden’s production decreased at an annual average rate of 18%, while the production of France decreased at an annual average rate of 18% between 2010 and 2014.
- Other smaller producers are Spain (9.2 thousand tonnes), Belgium (7 thousand tonnes) and Poland (4.1 thousand tonnes).

Tip: Find out more about consumption (& crushing) and production of linseeds in Europe through the statistics provided by FAOSTAT and Fediol (Federation of the European Vegetable Oil and Protein meal Industry).

See our study on Trade Statistics for Oilseeds for more information.

Market trends

Exploring the health food market

- The use of linseed as a nutritional and functional ingredient opens up opportunities in the niche market for health food products. The omega-3 fatty acid content of linseed as well as its dietary fibres are regarded as beneficial to human health and gain increasing popularity.
- The demand for linseed follows the global development of the omega-3 market. According to Grand View Research, the global market for omega-3 ingredients was estimated to be USD 1.82 billion in 2014. The European market for omega-3 ingredients exceeded 23,500 tonnes in 2014 and is expected to grow in the coming years as a result of favourable regulations on the use of omega-3 as a food ingredient. In terms of value, the global omega-3 market is expected to reach USD 7.32 billion in 2020, almost four times the 2014 level.
The growing use of linseed as a healthy food ingredient has stimulated the direct consumption of whole and broken seeds. The linseeds are sold directly in consumer packaging and can be added to yoghurts, oatmeal, salads etc.

**Tips:** Promote the various applications and health properties of linseeds. Make sure to provide your buyer with accurate product specifications and composition, with a focus on:
- Product description and code
- Origin
- Certification(s) [if applicable] and food safety
- GMO-free certificate
- Production: ingredients, additives, process
- Sensorial properties: smell, colour, taste, appearance
- Packing: net content, kind of packaging, size, layers
- Shelf life
- Nutritional values
- Analytical properties
- Microbiological properties
- Allergy list

Make sure your product characteristics and quality match your target market and end-user in terms of:
- Taste and odour
- Purity level & uniformity

Stay informed on the news for Supplements and Nutrition trends in the European Union by visiting the Nutraingredients website. Take advantage of the vast amount of information on the growing Omega-3 market and promote your product’s properties accordingly.

**Food safety: do not get rejected at the border**
- In 2009 and 2010, different shipments of genetically-modified linseeds were intercepted within imports to Germany and Belgium. The discovery in cereals and bakery products of the so-called *Triffid (FP 967)*, a GM variation that is able to resist herbicides, did not comply with the zero-tolerance policy for GM linseed in the European Union.
- Canada is considered the main country of origin for *Triffid* and continues to produce this seed type, as its use is approved for domestic use as well as for exports to the United States. However, the discovery in Europe directly paralysed Canadian exports to the European market, affecting its position as the main supplier to the region, as described under ‘Trade statistics’.
- More recent warnings in European food safety for linseeds were related to different contamination sources such as cyanide poisoning, salmonella, mites and rodents, often originating from Black Sea countries.

**Tips:** On the website of the Rapid Alert System for Food and Feed (RASFF), you can browse through various border rejections and alerts for linseeds under different categories: ‘nuts, nut products and seeds’, ‘cereals and bakery products’, and ‘dietetic foods, food supplements, fortified foods’. In this manner, you can learn about common problems faced by suppliers during border controls and adopt appropriate measures to avoid them.

Take the appropriate pre and post-harvest measures needed to avoid the occurrence of Salmonella, Aflatoxin and other sources of contamination in your seeds. The Empres Food Safety Guide (in FAO’s website) regarding prevention and control of salmonella and E. coli is a good point of departure.
Be familiar with FEDIOL’s Hygiene Guides, including set procedures dealing with salmonella and other sources of contamination.

See our study on buyer requirements for the oilseeds market for more information on food safety regulations.

**Opportunities for organic certification**
- The European market is increasingly demanding more organic-certified linseeds for the edible seed industry, especially within the health food segment.
- The market for organic linseed is currently short in supply, resulting in products being sold with premiums reaching up to 40% relative to conventional linseeds.
- The competitive position of European producers of organic linseed has remained limited due to the low production. Germany, for instance, imports around 95% of their organic linseed from non-European Union countries, such as Argentina, China and Russia (FIBL & IFOAM, 2012).

**Tips:** Investigate the possibilities for organic certification, including the opportunities and costs involved in the process. Bear in mind that prices for conventional linseeds are fairly low compared to other oilseeds; in this respect, organic certification may represent an opportunity for value addition and to avoid price volatilities. In addition, organic linseeds belong to a niche segment which commands lower volumes than the conventional market, which can be interesting if your supply capacity is limited.

For information on organic certification in Europe, visit the website of Organic Farming in the European Union, which also contains guidelines concerning imports of organic products. Also consult the International Federation of Organic Agriculture Movements website for information on certification standards.

See our study on trends for oilseeds for more information.

**What legal requirements must my product comply with?**

**Contaminants in food:** The European Union has laid down maximum levels of contaminants in food, including ingredients such as linseeds. Specifically for linseed, contamination with salmonella can be an issue. See the Market trends section, for more information on food safety and salmonella.

**Tips:** Check out the maximum levels for contaminants in food set by European Union legislation.

**Maximum Residue Levels (MRLs) of pesticides in food:** European Union legislation has been laid down to regulate the presence of pesticide residues (MRLs) in food products.

**Tips:** If the linseeds have been treated with pesticides, verify that residues remain within limits. For more information, consult the specific European Union legislation: Maximum Residue Levels (MRLs) of pesticides in food.

**Additives, enzymes and flavourings in food:** The European Union has set a list of permitted flavourings and requirements for their use in foodstuffs intended for human consumption, which includes linseeds. This is particularly relevant to food manufacturers. However, insight into this legislation can help you to understand their requirements.
**Tips:** Familiarize yourself with the concerns of the end-users of your products by checking European Union legislation on [additives, enzymes and flavourings in food](http://www.cbi.eu).

**Hygiene of foodstuffs:** Food business operators shall put in place, implement and maintain a permanent procedure, or procedures, based on the HACCP (Hazard Analysis and Critical Control Points) principles. This also applies to the import of food to the European Union and export from the European Union.

**Tips:** Ensure compliance with European Union legislation on [Hygiene of foodstuffs (HACCP)](http://www.cbi.eu).

**What additional requirements do buyers often have?**

**Food safety management:** Buyers commonly require their suppliers to have a quality/food safety management system in place. These systems require companies to demonstrate their ability to control food safety hazards in order to ensure that food is safe at the time of human consumption.

**Tips:** Suppliers can apply a basic HACCP system. However, if they aim to supply food manufacturers more directly, it is necessary to have a certified food safety management system recognised by the Global Food Safety Initiative, such as ISO 22000, British Retail Consortium (BRC) or International Featured Standards (IFS) Food. Visit the website of the [Global Food Safety Initiative](http://www.cbi.eu) for more information.

**What are the requirements for niche markets?**

**Regulation (EC) 834/2007 on organic agriculture:** The European Union has established requirements on the production and labelling requirements with which an organic product of agricultural origin must comply in order to be marketed in the European Union as “organic”.

**Tips:** In general, the market for organic linseeds is still a niche segment. If you do choose to obtain a certificate for organic production, find out more about [Organic production and labelling](http://www.cbi.eu) for more information.

Make sure that your organic certification is harmonised with the [European legislation](http://www.cbi.eu).

See our study on [Buyer Requirements for the oilseeds market](http://www.cbi.eu) for more information.
Market channels and segments

Figure 6: Trade channels for linseeds in Europe

Figure 6 depicts the different steps in the trade channels for linseeds as a food ingredient. Even though linseeds go through a similar route, the actual processes are different for the specific segments. As such, the European market for linseeds can be segmented based on their end-use within the food sector.

- The edible seed industry can be divided into having two different segments. 1) food processing: A large share of linseeds is used whole, broken or milled in bakery and confectionery products. These include different applications, for example on the surface of breads or processed in biscuits, cereal bars etc. 2) consumer market (packaging): Direct consumption of linseeds, mainly for health purposes. Linseeds are sold whole or broken / ground to consumers, to be sprinkled over foods such as yoghurts, oatmeal and salads.

- The crushing industry relates to the production of linseed oil (and linseed cake as a by-product). The oil is used as an edible oil and as an ingredient in paints, varnishes and many other industrial products, whereas the linseed cake is mostly used in animal feed. According to FEDIOL, total crushing of linseed in the European Union amounted to 632 tonnes in 2014; most crushing is done in Belgium (nearly 58%) and Germany (20%).

Next to the conventional application of quality seeds in the food sector, health food niche markets are more frequently requesting organic-certified linseeds. This trend is especially true in Western Europe, where buyers are willing to pay a higher price for a higher quality product. As stated previously, the margin for organic-certified linseeds can reach up to 40%.
Figure 7: Segmentation of linseeds in Europe

Food market segmentation

**Edible seed industry**
- Consumer market: Whole or broken with yoghurt, oatmeal, salads etc.
- Food manufacturing: Bakery and confectionery products such as

**Crushing industry (linseed oil)**

Non-certified
- Conventional linseeds
  - Forward prices

Certified
- Certified linseeds: organic
  - Premium prices

**Tip:** If you are able to supply directly to food processors (or crushers) in terms of volume, as well as consistent delivery and quality, make sure you have adequate quality control systems. The different systems available are described under ‘Common requirements’. Make sure to consult your (potential) buyer on the certifications which are required by them.

If you are dealing with smaller volumes or specialised linseeds (e.g. with organic certification), importers are quite certainly the most suitable entry points.

See our study on [Market Channels and Segments for Oilseeds](#) for more information.

**Price**

Linseed prices are falling due to excess supply as production is at its highest level since 2007. This increase in production is mainly driven by larger harvests in Canada, Kazakhstan and Russia. Moreover, rapeseed is gaining popularity at the expense of linseed, driving linseed prices further down.

According to Oil World, Northwest European prices for Russian linseeds decreased from US$665 to US$625 per tonne in a two-month period, from December 2013 to February 2014 ([Bloomberg, 2014](#)), but fell to levels around US$ 500 per tonne in October 2014. During 2015, global linseed prices declined even further due to higher production in several key exporting countries (mainly the Black Sea Region) ([Flax Council of Canada, 2016](#)).

The Flax Council of Canada's 'Flax Market Snapshot' shows the global price developments for linseeds between August 2012 and May 2016, as reflected in the following figure.
Figure 8: Global price developments for linseeds, August 2012 to May 2016, in USD per tonne

Source: Flax Council of Canada, 2016

Tips: Develop sustainable relationships with buyers in order to profit from the current international scenario for sesame seeds in the long run.

Develop good market information systems so as to be aware of market movements in linseeds worldwide.

Interesting Sources

- The EU Vegetable Oil and Protein meal Industry - www.fediol.eu
- Flax Council of Canada – www.flaxcouncil.ca
- The Food and Agriculture Organisation of the United Nations has a variety of agricultural databases - faostat3.fao.org
- For information on the latest market developments in the Oils and seeds sector, visit The Public Ledger - publicledger.agra-net.com/oils

More information
CBI market information: Promising EU export markets.

This survey was compiled for CBI by ProFound – Advisers In Development in collaboration with CBI expert James Fitzpatrick

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