

Exporting oleoresins for food to Europe

The growing European market for oleoresins offers many opportunities. Increasing competition for the spices, herbs and other raw materials for oleoresin extraction stimulates European importers to search for new sources. For you as an exporter, the production of oleoresins can be much more profitable than the production of the raw materials alone. European buyers are looking for this added value, because they can use the oleoresins to manufacture a wide range of foods. They particularly value the natural origin of oleoresins. This aspect requires extra attention on your part to natural and sustainable production processes.

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1. Product description

Oleoresins are the concentrated form of spices and herbs. Oleoresins can be produced from various plant sources and from different plant parts. The main plant parts:

- fruits
- seeds
- rhizomes and roots

Examples of major oleoresins:

- paprika (fruit)
- turmeric (rhizome)
- black pepper (seeds)
- ginger (rhizome)

Oleoresins are used in the flavour and food industry, especially for meat preparations, marinades and gourmet food as well as for convenience products. They provide the flavour of spices and herbs to foods and, in the case of [paprika oleoresin](#) and turmeric oleoresin, they also provide colour.

In contrast to [essential oils](#), oleoresins contain many more non-volatiles. This fact makes them more interesting for the flavour and food industry. Non-volatiles are substances that do not vaporise easily. They are not lost when exposed to open air. In fact, oleoresins combine the volatiles and non-volatiles of plants to yield a more complete flavour profile. For example, pepper oleoresin contains the non-volatile piperine, whereas the essential oil of pepper does not. Piperine is the spicy hot part of pepper.

Another difference between oleoresins and essential oils is that oleoresins dissolve in fats, oils and lipids, whereas essential oils do not. This property of oleoresins is called lipophilicity and provides manufacturers with different options for food formulation compared to essential oils.

With the exception of paprika and turmeric oleoresins, the extraction of oleoresins starts with the extraction of the volatile part of the plant (the essential oil) by a distillation process. The remaining raw material is then exposed to a solvent suitable to extract the non-volatiles. After this process, the solvent is removed from the

extract. This procedure is repeated various times until all non-volatiles are removed from the plant material.

Finally, the non-volatile part (resin) and the volatile part (oil) are blended and homogenised (mixed to get the same composition in all parts of the blend) to make a smooth oleoresin and to get the whole flavour (including spiciness) plus colour.

The solvents used in the extraction process are mainly ethyl acetate, alcohols, acetone or hexane, depending on the oleoresin to be extracted. The appropriate solvent, pressure, temperature and duration of the extraction mainly depend on the raw material that contains the oleoresin. In recent years, the “supercritical fluid extraction” (CO₂ extraction) has become another frequently used extraction method. This method is expensive, but it may increase the extraction rate and results in an oleoresin with different properties.

Within Europe, oleoresins are classified according to the Harmonised System (HS). This coding system is used in international trade. The HS code for oleoresins is:

- 3301.9030 - Oleoresins

Tips:

Identify the botanical source of your raw material. You must have a thorough understanding of the factors determining your product’s specifications. The suitability of your oleoresins for a specific food application depends largely on product specifications.

For more information on classifying oleoresins, [you can read our workbook for preparation of Technical Data Sheets for natural ingredients](#).

Our [study of paprika oleoresin](#) for food and our [study of turmeric for health products](#) provide specific information on the respective markets.

Also see our [studies of the European market for spices and herbs](#). As producers of raw materials for oleoresin extraction can usually supply markets for fresh and preserved spices and herbs as well, these markets are interdependent.

2. What makes Europe an interesting market for oleoresins?

European market for oleoresins keeps growing

The European market for oleoresins and other flavourings continues to grow. According to Grand View Research, the European oleoresin market value amounted to € 126 million in 2015. Paprika oleoresin accounts for an estimated 25% of the total oleoresin market value. Other major oleoresins include black pepper, ginger, nutmeg and turmeric.

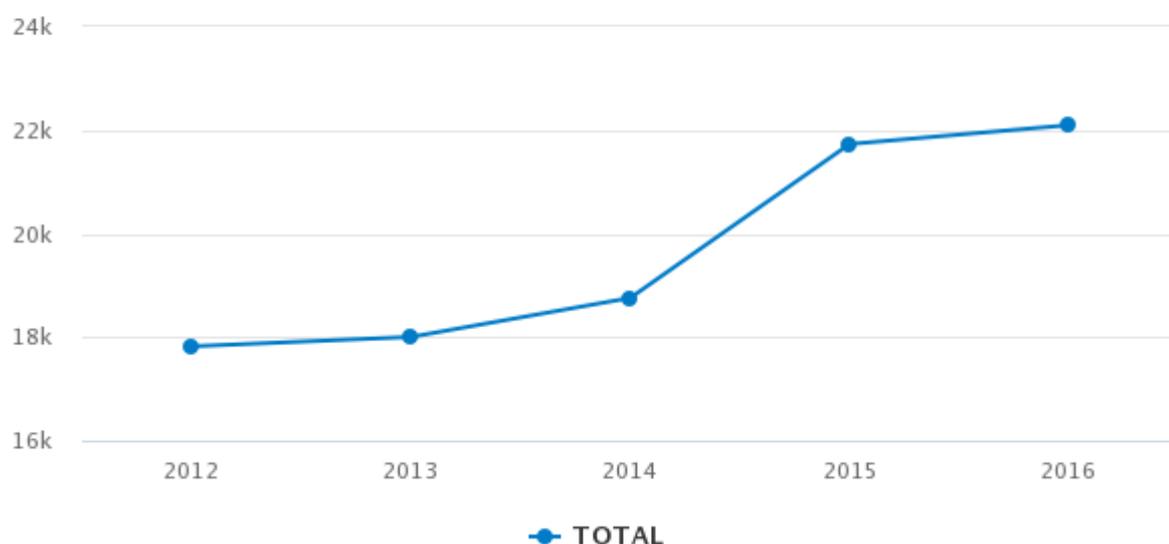
See Figure 1 for the development in turnover of the leading flavouring manufacturers. The 5.5% annual increase in their turnover reflects the significant growth in the demand for their flavourings.

Most of these manufacturers are based in Europe. They are the largest users of oleoresins in Europe and produce flavourings for many food and beverage manufacturers inside and outside Europe. Some examples are:

- [Givaudan](#) (Switzerland)
- [Symrise](#) (Germany)
- [MANE](#) (France)

Figure 1: Turnover of global manufacturers of flavours and fragrances 2012–2016

in € million



Source: Leffingwell, 2017

In the next five years, the demand for oleoresins is expected to continue its growth worldwide. Grand View Research forecast that the global oleoresins market will grow from US\$ 1.15 billion in 2014 to US\$ 1.69 billion in 2022.

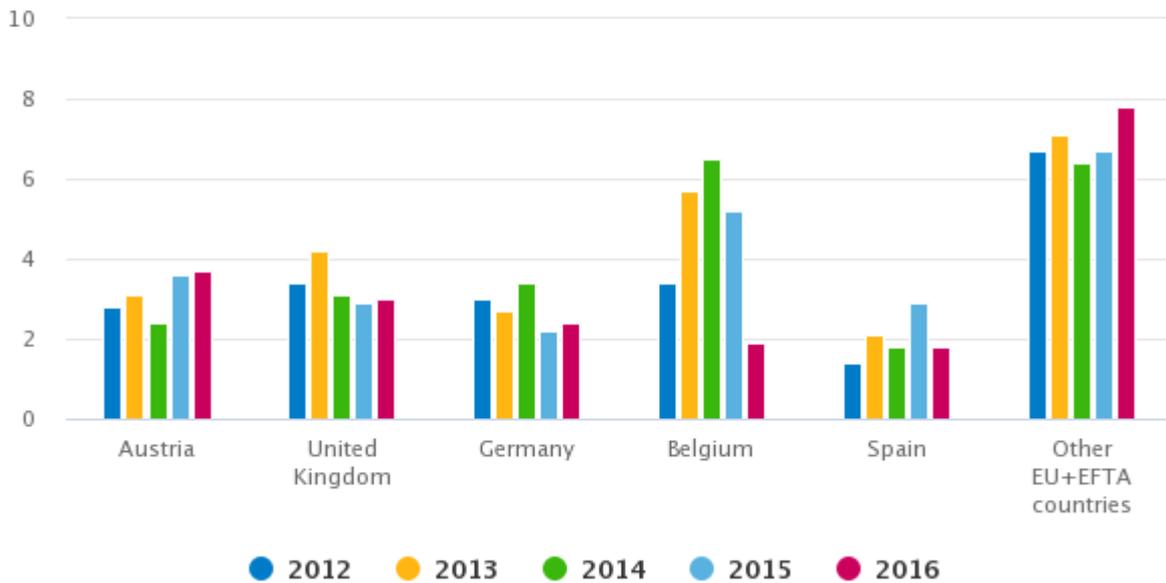
European imports of oleoresins are growing

In the period 2012–2015, the total European imports of oleoresins increased at an average annual rate of 4.1% in terms of volume. In 2016, imports decreased again by 12%. The decrease was partly caused by a further weakening of the euro. Oleoresin imports became more expensive for European buyers, which restricted their buying power. In 2017, the exchange rate between the euro and the US dollar became more favourable again for European importers. This development had a positive effect on imports.

Figure 2 shows the leading importers in Europe. The United Kingdom, Germany and Spain have large food industries and are the most important end markets for oleoresins in Europe. Austria and Belgium are major re-exporters. The ports in Belgium and the Netherlands are important entry points for imports to north-western Europe.

Figure 2: Imports of oleoresins by Europe 2012–2016

in 1,000 tonnes



Source: Eurostat

Tips:

You will find most sales opportunities in countries with large flavour industries such as the United Kingdom, Germany and Spain. Nonetheless, re-exporters such as Austria and Belgium also offer plenty of opportunities.

European industry increasingly uses formulas with natural ingredients

European food and flavouring manufacturers are increasingly looking for ways to produce foods and flavourings from natural ingredients. This trend is a major driver for growth on the oleoresins market. Oleoresins are some of their most important natural ingredients. The wide variety of oleoresins gives them numerous possibilities to formulate new or improved natural foods and flavourings.

The challenge for European manufacturers is to produce consistent natural flavourings. Compared to synthetic ingredients, oleoresins can vary in their quality. This aspect may affect the taste of the end product. As a result, food and flavouring manufacturers have very strict specifications for oleoresins. You must comply with these strict specifications to enter the European flavourings market.

Tips:

Show food manufacturers how to apply your oleoresin. Provide information on its performance under different conditions (e.g. temperature, acidity). For more information, check [Perfumer & Flavorist's Flavor Library](#), or purchase the [Flavour Raw Materials database of Leffingwell](#) or the [Book of Flavourings \(Blue Book\) of the Council of Europe](#).

Supply highly consistent quality. Refer to the section below on quality requirements for tips on how to do so. If you buy raw materials from other suppliers, offer an extension of services to your regular suppliers in order to improve quality consistency and to secure their commitment to your company.

Obtain Organic certification to strengthen the image of your oleoresin as a natural product and benefit from the promotional value. You will have to use organic extraction solvents for your certification.

Food manufacturers use food extracts with colouring properties to obtain “clean labels”

Clean labels do not contain E numbers for food additives or names of ingredients which consumers perceive as unnatural. Increased consumer demand for natural products and clean labels is one of the drivers behind the increase in the demand for paprika oleoresin and turmeric oleoresin.

Producers of certain extracts may benefit from the legal distinction between “natural food extracts with colouring properties” and ingredients classified as “food additives”. The latter are under scrutiny by some consumers with concerns over the effects of food additives consumption on their health.

Turmeric oleoresin may classify as a natural food extract with colouring properties depending on the type of extraction. Curcumin extracted from turmeric oleoresin does not classify as such, due to the “selective extraction” of pigments.

Tips:

Read our study of buyer requirements to [find out whether your extract can be classified as a food extract with colouring properties](#) according to European legislation.

Read our [study of paprika oleoresin](#) to gain more knowledge about specific trends on the market for paprika oleoresin.

Ethnic foods are gaining popularity

Ethnic foods are gaining [popularity worldwide](#) including in Europe. [Indian, Thai and Mexican food](#) are some of the most popular international flavours. Oleoresins from spices are interesting ingredients for food manufacturers to create such ethnic foods. For example, food manufacturers can use pepper oleoresin to mimic the use of fresh pepper.

Tip:

Search for manufacturers of ethnic foods or importers of ingredients for ethnic foods. Show them how to apply your oleoresin in order to create ethnic food flavours.

Salt reduction proves to be a challenge

Many Europeans consume more salt than is healthy for them. Media attention to this health concern is raising consumer awareness of their salt consumption. As a result, the demand for products containing less salt is strong. In response, many food manufacturers aim to reduce salt in their products. As they do not want to compromise on taste, they use other ingredients to mask the salt reduction. Several oleoresins, such as cardamom oleoresin, can offer this function.

Tips:

Read more about [salt reduction initiatives in Europe](#) and [current developments](#).

Raise awareness about the potential of oleoresins for salt reduction and enable easy substitution.

Short-term opportunities for specific oleoresins

Your short-term opportunities on the European market for specific oleoresins depend largely on the availability of the raw material. For example, crop failures in major countries of origin can suddenly change the global market situation.

Cardamom oleoresin:

- Currently, the opportunities to enter the European market for cardamom oleoresin are quite good. Harvests in Guatemala have been relatively small for two consecutive years. Guatemala is the main origin of cardamom. However, oleoresin extraction takes place in India and Sri Lanka. The availability is lower than in years with good harvests. Problems with thrips (insects feeding on the oil) will result in lower extraction yields. Nonetheless, supplies from the existing suppliers are still sufficiently large to prevent scarcity on the European market.

Nutmeg oleoresin:

- This moment is not the best time to enter the market for nutmeg oleoresin in Europe. In 2016, the supplies of nutmeg oleoresin were relatively strong and sufficient to meet the European demand. For European buyers, the situation is much better than in the decade before.
- Previously, the supplies of nutmeg were very low as a result of hurricanes in major nutmeg producer Grenada and diseases in Indonesian nutmeg trees. Oleoresin producers in India and Sri Lanka are to a large extent dependent on nutmeg imports from these other countries. As a result, India and Sri Lanka also supplied little nutmeg oleoresin during that period. In 2015, the supplies of nutmeg and its oleoresin increased again, as the newly planted trees in Indonesia started to bear fruit.
- In the coming year, an expected slowdown in production within the major nutmeg country of origin Indonesia may cause somewhat lower supplies. The lower production is the result of heavy rains in addition to current producers leaving the market due to the low prices at the moment.

Pepper oleoresin:

- The availability of pepper oleoresin is fluctuating. After the last harvest, the availability was good. However, due to droughts in Vietnam and heavy rains in Sri Lanka, lower supplies are expected in the near future. This situation may open up opportunities for new suppliers.

Turmeric oleoresin:

- In 2017, industry sources expected a good yield for the Indian harvest in February/March of 2018. India is the main supplier of turmeric and determines the global availability.

Ginger oleoresin:

- India, Nigeria and Ethiopia are important suppliers of ginger. The current availability of ginger oleoresin is good. Its future availability depends strongly on developments on the market for fresh ginger.

Tips:

Consider the cyclical nature of oleoresins markets when trying to export to Europe. After a year with low supply and high demand, you can expect many new entrants, which will cause oversupply and lower prices. Check price developments of the past five years to identify price cycles and determine

the best time to enter the market.

Consider growing or collecting edible plants with multiple uses to secure a stable income. Many plants have parts which are suitable for consumption when they are fresh or dried. Those same parts or other parts of the same plant can also yield oleoresins. Such product diversification offsets the risks of market fluctuations. If prices in the market for one of the product uses (e.g. fresh) collapse, you can supply your raw materials to a market for other uses (e.g. oleoresin) where prices are higher.

Latin American producers of cardamom can add value to their products by extracting the oleoresin. This opportunity has not yet been realised.

3. Which requirements must oleoresins comply with to be allowed on the European market?

Buyers in the European Union have strict requirements for natural food additives. You will only be able to market your product in Europe successfully when you comply with these requirements. They deal with the following topics:

- food safety – traceability, hygiene and control;
- contamination;
- adulteration;
- Classification, Labelling and Packaging (CLP);
- substances allowed in the European Union;
- conditions for the use of extraction solvents;
- food extracts for the colouring of additive-free foods;
- liability;
- Convention on Biological Diversity/Access and Benefit-Sharing;
- Food Safety Certification;
- kosher and halal certification;
- documentation;
- samples;
- payment and delivery terms;
- sustainability;
- certification of Organic production.

See our study of [buyer requirements for natural food additives](#) (including oleoresins) for a detailed analysis of these requirements.

Restrictions on the use of extraction solvents

It is important that you have a thorough understanding of the requirements for the topics listed above. Moreover, European Union legislation and buyer preferences for the use of extraction solvents are of particular concern on the oleoresins market.

The European Union permits the use of the following solvents for oleoresin extraction in compliance with Good Manufacturing Practices:

- propane
- butane
- ethyl acetate
- ethanol
- carbon dioxide
- acetone

- nitrous oxide

In Parts II and III of Directive 2009/32, you can also find a [list of extraction solvents for which conditions of use are specified](#). For example, the European Union permits the use of methanol and propan-2-ol when residues of these solvents in the oleoresin do not exceed the Maximum Residue Level (MRL) of 10 mg/kg. This MRL is to ensure that the solvent does not present a danger to human health. For this reason, the use of hexane is only permitted when the hexane residue is below 1 mg/kg. Hexane can give very good results, but it is dangerous and difficult to handle.

European buyers increasingly prefer the use of naturally occurring solvents such as ethanol and carbon dioxide for extraction. This choice aligns better with consumer preferences for a more natural production of food.

Tip:

When you aim to produce Organic certified oleoresins, you must use a solvent allowed in organic production. For example, the German company Flavex produces [Organic certified paprika oleoresin using CO2 extraction](#).

Increasing demand for halal certification

The demand for certification of compliance with halal standards is increasing. If you want to obtain a certificate, such as the [Halal Food Council of Europe](#) certificate, you are often barred from using alcohols for extraction. You will then have to use alternative solvents such as carbon dioxide. In the case of India, halal certifiers have approved ethyl acetate as halal.

Tip:

See our study of buyer requirements on the European market for natural food additives for [more information about halal certification](#).

Sustainable production becomes a necessity to enter the market

Sustainable production is rapidly becoming a crucial requirement for access to the mainstream market in Europe. Until recently, only frontrunners in niche markets for ethical products (e.g. Fairtrade) had requirements for sustainability. Now, leading food manufacturers in Europe are also turning to sustainability. Sustainability websites of leading suppliers of flavourings to the European market include:

- [IFF Sustain](#)
- [Firmenich Sustainability](#)
- [MANE Sustainability](#)

For one, leading flavouring producer IFF writes in its 2015 [sustainability report](#): “We are assessing our supply chain for vulnerable raw materials and developing and advancing policies to ensure its long-term resiliency.”

Many European buyers such as IFF are demanding more transparency in their supply chains. They often use questionnaires for suppliers or they use platforms such as the [Supplier Ethical Data Exchange](#) (SEDEX). SEDEX is an online platform where you can make information about your production buyers available to buyers. Suppliers must increasingly provide the requested information to prevent losing these buyers.

European buyers are also engaging more with their suppliers to improve long-term relationships. For example, they provide technical assistance to improve the quality of products or the yields of production.

Tip:

You can benefit most from the increasing engagement of European buyers by sharing information on your needs. Request advice on farming and distillation techniques, measures to improve the sustainability of your business and many other types of support.

Stricter legislation limits opportunities for niche products

Supplying small amounts of new oleoresins to the European market is becoming more difficult. Stricter legislation ([EC 1334/2008](#)) has made it more difficult to obtain approval for new flavourings. To enter the market with new flavourings, you need to go through a costly application procedure. The European Food Safety Authority has to provide a positive conclusion on the safety for use as a flavouring.

The procedure for authorising a flavouring substance is the same as for food additives and enzymes under [EU Regulation 1331/2008](#). The website of the EU on the Common Authorisation Procedure provides [more details about this procedure](#), including requirements for the application such as laboratory research on toxicology.

In the closely related market for essential oils, legislation on Registration, Evaluation and Analysis of Chemicals (REACH) puts an additional administrative and financial burden on many suppliers of essential oils for use in food, cosmetics and other applications. As oleoresins are primarily used for food, they are exempt from REACH.

Tip:

Become a member of the [International Organization of the Flavor Industry \(IOFI\)](#) to receive the latest news on legislative developments and other relevant topics in the flavourings industry automatically.

Quality requirements

European buyers determine the quality of oleoresins mainly by physical aspects. Physical analysis focuses on:

- colour
- flavour
- purity

Colour and flavour

In the case of paprika oleoresin, the colour value (CV) for its colouring properties is important. In the case of turmeric, the curcumin content for its colouring properties is the main quality factor. The capsaicin contents that determine the spiciness of the paprika oleoresin are also important.

Another important factor for oleoresins with colouring effects (paprika and turmeric) is the absence of forbidden dyes. Buyers may require a certificate from an accredited laboratory as proof that you have not added any dyes or that you have added dyes according to your specifications. Moreover, they only accept certificates from reputable laboratories that they recognise.

Many buyers have their own quality requirements. They can differ from those of other buyers depending on their application to the oleoresin. These differences mainly relate to the oil contents of the oleoresin, as the flavour profile of the oleoresin is primarily determined by the oil contents. For example, many buyers of black pepper oleoresin require 20% oil content, while others require up to 25% oil content. You will have to check with your buyers what their specific requirements for oil content are.

Purity

Generally oleoresins for food must be 100% pure from the named plant. In some cases (such as black pepper), it may be advisable to add a small amount of edible oil to the oleoresins in order to make it smoother and easier to use. However, this process needs to be mentioned in the certificate of analysis. When you have mixed your oleoresins, you must label it as a “blend of oleoresins”.

In addition to the quality parameters above, buyers of oleoresins for food also consider quality consistency. They prefer a well-homogenised product (with the same quality in different containers) and suitable lot sizes (for example, no small lots with different qualities). A consistency of quality in oleoresins is important to manufacture foods and beverages with the same quality as expected by consumers.

Tips:

See our [manual on preparing a Technical Data Sheet](#) for an explanation of practical steps to classify your product and identify corresponding labelling requirements. In this manual, you can also find out how to make Safety Data Sheets (SDS). The SDS should contain information on possible dangerous characteristics of chemical substances in your product.

European buyers expect you to have expertise in the product that you supply. For example, you must have detailed knowledge about the origin of the raw materials, production techniques and suitable equipment for processing. Research the effects of different extraction methods (temperature, pressure or time) on the quality of your oleoresin. When available, use international specifications as a baseline.

Minimise the variation in quality within a lot. Follow strict grading and sorting standards for selecting raw materials. Variation in the physical properties of the raw materials also means that the oleoresin content and chemical profile will vary. This fact implies that you should only use pure material (raw material from one type of plant) for extraction. Do not mix raw materials from other plant species.

Achieve a higher quality consistency over the year by standardising your product's quality. You can standardise your product by establishing Standard Operating Procedures (SOP) for collection, harvesting and processing practices (e.g. time of harvest). Closely monitor the implementation of these SOPs through regular inspections. Offer special benefits to collectors who apply your SOPs. You can also standardise your product by blending oleoresins from different lots.

Include information on the oil contents, colour value, capsaicin or curcumin contents, the solvent residues and the absence of forbidden dyes in your Technical Data Sheet and specifications. Include test results from accredited laboratories which are recognised for their expertise and reliability.

Labelling requirements

You are obliged to label your products if you want to export them to Europe. Labelling is required to make your products traceable and to ensure safety during transport and storage.

In Europe, oleoresins are considered hazardous chemical substances. You must comply with Regulation [EC 1272/2008](#) on Classification, Labelling and Packaging (CLP) of chemicals to ensure that hazards are clearly

communicated. On your label, you must include the relevant risk phrases, safety phrases and hazard symbols (examples below).



You can find an elaborate [definition of the flammability, risk phrases and safety phrases](#) in Directive 2001/59/EC. The Directive provides technical information for implementing the European Union Regulation on Classification, Labelling and Packaging.

In addition to complying with the CLP Regulation, you must apply common export labelling rules:

- Make individual batches traceable with markings on each container. Register them in an administrative system, whether they are produced by blending or not.
- Use the English language for labelling, unless your buyer has indicated otherwise.

Your labels must include:

- product name;
- batch code;
- whether the product is destined for use in food products;
- place of origin;
- name and address of exporter;
- date of manufacture;
- best-before date;
- net weight;
- recommended storage conditions.

If you offer Organic certified oleoresins, you must also add the name/code of the certifier and certification number.

Packaging requirements

Always consult with your buyer for specific packaging requirements.

Use UN-approved packaging. This packaging is suitable for the transport of dangerous goods, including oleoresins. Contact your packaging supplier for more information.

An example of a common type of packaging:



Tips:

For details on packaging materials, see the [European Federation of Essential Oils](#) on the transport of dangerous goods.

Preserve the quality of oleoresins by using containers of a material that does not react with constituents of the oleoresin (e.g. food-grade plastic, lined steel, aluminium).

Do not reuse packaging materials. Do not use detergents if you must clean containers or working materials. They may contaminate the oleoresin because of residues. Only use water or alcohol and let them dry carefully.

If your oleoresin reacts with air in the container, it may result in quality deterioration during storage and transport. Fill this headspace with a gas that does not react with constituents of the oleoresin (e.g. nitrogen or carbon dioxide).

Facilitate the recycling of packaging materials by European buyers. For example, use containers of recyclable material (e.g. metal).

Store containers in a dry, cool place to prevent quality deterioration.

Keep Organic certified oleoresins physically separated from conventional oleoresins.

4. What competition do you face on the European oleoresins market?

Technological barriers for new market entrants

Competition is lower on the oleoresins market compared to the essential oils market. This fact is due to relatively high technological barriers in order to access the market. Solvent extraction requires highly skilled staff and special expensive equipment. Only few new players can make the necessary investments. Actually, most investment concentrates on existing oleoresin industries.

Tips:

Only enter the oleoresin market when you have access to expertise in the appropriate extraction techniques and the required equipment. Oleoresin extraction is more complex than distillation. If you already supply essential oils to European importers, you may request their technical or financial support for the new business.

Apply processing technology which is close-to-nature and efficient, and which results in consistent

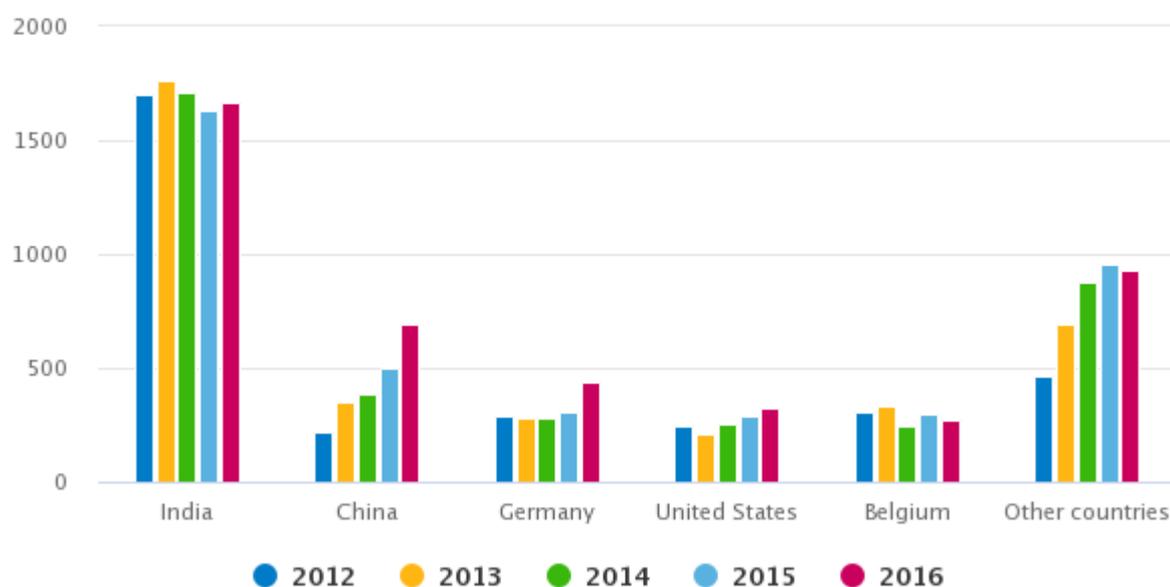
quality.

India dominates the oleoresin market

India already accounts for an estimated 50% of the global oleoresin industry and its role continues to grow. The following companies in India hold a major share on the European paprika oleoresin market: [Synthite](#), [Universal Oleoresins](#), [Plant Lipids](#), [Kalsec natural ingredients](#) and [Naturex](#).

Figure 3: Suppliers of oleoresins to Europe 2012–2016

in tonnes



Source: Eurostat

Other leading suppliers from developing countries to the European market in 2016 include China (16% of the total European import volume) and Sri Lanka (4%). Imports from China increased by 33% annually and imports from Sri Lanka increased by 113% annually on average. Sri Lanka is an emerging supplier of oleoresins from black pepper, ginger, cinnamon and nutmeg.

Tips:

Avoid direct competition with India on markets for oleoresins from raw materials which are readily available in India. Refer to the section on the “Need for product distinction” to learn ways of avoiding direct competition with India. If you cannot avoid competition with Indian suppliers, increase your scale of operations to improve production efficiency and prices. You can also join a cooperative and bulk supplier to produce large quantities of a standardised quality.

Establish your processing facility close to production areas for raw materials. Assess possibilities to produce different extracts based on the availability of raw materials in the area. For example, Peruvian extraction companies can use their equipment to produce paprika oleoresin and annatto extracts.

Substitution with fresh and dried spices

Oleoresins are complementary to the use of fresh and dried spices. However, in some segments for gourmet food or raw food (i.e. minimally processed), manufacturers prefer fresh or dried spices. Compared to those products, oleoresins are often easier to apply by food manufacturers. Oleoresins are used in small dosages and have a high uniformity in flavour. The use of oleoresins enables manufacturers to standardise the flavour profile of a product and improve quality consistency.

Oleoresins are also heat-stable and easy to store. They are not susceptible to microbiological contamination and have a much longer expiration period than fresh or even dried spices. Manufacturers in the mainstream segment of the market for processed foods (especially meat) generally appreciate these characteristics. The cost of use is often their main purchasing criterion. They want to know how much each option (fresh, dried, oleoresin) costs per end product. Thanks to the low dosages required for oleoresins, their cost of use is much more competitive than prices of oleoresins suggest.

Tips:

Focus your promotion on manufacturers of processed food and especially the meat industry.

Provide information on the use of your oleoresin to buyers. Explain the benefits compared to fresh and dried products. Focus on the small amount of oleoresin necessary to achieve the desired flavour.

Stress the cost benefits of using small amounts.

Buyers show interest in natural substitutes

In the short term, the substitution of “unnatural” ingredients will remain a hot topic on the oleoresins market. Food and beverage manufacturers continue to substitute synthetic and nature-identical flavours with natural flavours, despite high reformulation costs.

Substitution offers particularly interesting opportunities if you can supply large quantities of a consistent quality. Manufacturers are often hesitant to replace synthetic flavourings by natural flavourings, as they are concerned about availability and quality inconsistencies.

Competition from biotechnology

A lot of progress is being made in the development of biotechnology for the production of flavourings. This development is mainly due to the natural trend. For example, several flavouring manufacturers (e.g. Givaudan or Mane) and biotech companies have developed biosynthesis of vanillin (the substance that gives vanilla its typical flavour). Their vanillin is natural according to the European Union’s legislation. Directive [1334/2008](#) allows enzymatic and microbiological processes.

As a consequence, natural vanillin derived from biotechnology competes directly with natural vanilla extracts. The only benefit that remains for natural vanilla producers is that natural vanilla contains many more components than vanillin. Certain buyers prefer the flavour profile of natural vanilla over that of natural vanillin.

Tip:

Promote the unique flavour profile of your oleoresin when you face competition from biotech companies.

Need for product distinction

New suppliers to European buyers will generally need to do more in order to differentiate themselves from the competition. Particularly India provides fierce competition on this market. Three options to distinguish yourself:

- a unique flavour profile;
- Organic certification;
- a provenance story (stories about the origin and production of your oleoresin).

Food and flavouring manufacturers are constantly looking for unique flavours to develop new products. They are particularly interested in new types of oleoresins when documentation (Safety Data Sheet) for that product is available. This trend is ambiguous, as European buyers want to introduce new products but do not want to make the necessary investments in documentation. They are increasingly making suppliers responsible for providing documentation.

Provenance stories will become particularly interesting in the long term. European buyers want to know where and how you produce their oleoresins. They can use this information to gain control over the sustainability of their supply chains. In some cases, manufacturers use these stories to show consumers how they are improving the sustainability of their business.

Tips:

Gain a better understanding of your buyers' needs. Take more responsibility for your products in order to comply with expectations. For example, cooperate with other stakeholders in your sector to establish a laboratory in order to learn about the properties of your products.

Develop a story about the origin of your product. Use the story to promote the fact that your product is natural. Strengthen your image as a supplier of natural products by improving the sustainability of your production.

If you have access to raw materials from farmers which produce organic by default or which can easily convert to organic production, obtain Organic certification. Beware that the production of other crops on the same land, such as cotton, must comply with the organic standard as well. Otherwise, your raw material will not be organic. You also need to consider the limited availability of organic extraction solvents as a bottleneck for certification.

5. Through which channels can you get oleoresins on the European market?

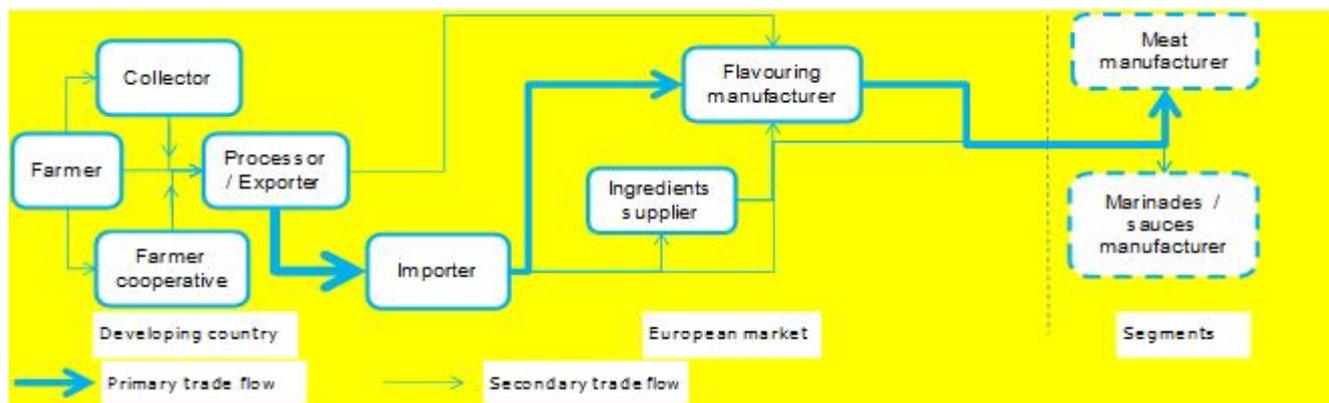
Two market segments for oleoresins

Flavourings are the primary market segment for oleoresins. Flavouring manufacturers use oleoresins as raw materials for a wide variety of flavourings. They create flavourings for sauces, marinades, bakery products and many other products.

Foods are the secondary market segment for oleoresins. Especially manufacturers of meat products, such as sausages, frequently apply oleoresins as ingredients. Instead of using marinades from flavouring manufacturers, some of them prepare their own marinades from oleoresins and other forms of spices (e.g. dried spices). Several manufacturers of mayonnaise, sauces, marinades and pickles also apply oleoresins as ingredients instead of using products from flavouring manufacturers

Channels to the European market

Figure 4: Channels leading to different market segments



Oleoresins commonly pass many different intermediaries before they reach the consumer. Importers and ingredients suppliers add value to the product through their logistics services. Flavouring manufacturers and food and beverage manufacturers add value by transforming the product.

Target importers

If you want to export oleoresins to Europe, it is best to target importers of raw materials (e.g. oleoresins) for the food industry. These companies are specialised in the import of a wide range of raw materials for flavouring manufacturers. Many of them buy both oleoresins and essential oils.

These importers also supply oleoresins directly to a relatively small number of food manufacturers. Particularly manufacturers of meat products, mayonnaise, sauces, marinades and pickles frequently purchase oleoresins directly from importers instead of through flavouring manufacturers.

Importers generally source their products from different countries. They need different sources to secure supplies. For example, when one source has a disappointing harvest, importers can turn to their other sources. The bulk imports from different sources and stocking by importers serve as a buffer on the market. This buffer function protects food and flavouring manufacturers from market volatility and makes importers indispensable.

Exports to flavouring manufacturers

European manufacturers of flavourings are engaging more often with suppliers in developing countries. This trend is driven largely by their need for a sustainable, well-documented supply of strategically indispensable ingredients. Instead of purchasing their raw materials (i.e. oleoresins) from importers, they source them directly at the origin.

European companies need very high supply security. To achieve consistency in supplies, they often choose for large-scale contract farming. They also work with oleoresin exporters who obtain their raw materials through contract farming. This strategy gives them most control over production in terms of both quantity and quality. Alternatively, when production is fragmented and small scale, local traders often play an important role in organising and consolidating production.

In general, flavouring manufacturers who source directly from the origin also continue to purchase from European importers. They source through different channels to secure stable supplies in case of a supply problem at one of their sources.

No direct trade with food manufacturers

European food and beverage manufacturers purchase their flavourings from specialised flavouring manufacturers or from European importers. They do not purchase oleoresins directly from suppliers in

developing countries, because:

- they increasingly need more complex flavours. This aspect helps them to differentiate their products from the products of their competitors. They rely on flavouring manufacturers to conduct research and develop new products. For example, flavouring manufacturers develop unique low-cost flavours which retain their functional properties under specific conditions (e.g. heat and acidity);
- they increasingly demand tailor-made products for use in very specific product formulations. This aspect requires close face-to-face collaboration with flavouring manufacturers in order to exchange technical knowledge;
- they require high quality consistency. This aspect is often achieved through fractionation and isolation of the chemical constituents of oleoresins. These processes require high-tech equipment and skilled staff, which are often unavailable in developing countries.

Tips:

Focus on European importers instead of approaching end-users directly. Especially for exporting speciality oleoresins, traders are the most suitable distribution channels.

As many importers have an interest in both oleoresins and essential oils, the expansion of your product range into either one of these product categories may be a good strategy.

Do not target food manufacturers directly, unless they use basic flavours in commodities. When you target these food manufacturers, you must be able to meet strict product specifications. You must also have the technical expertise to advise on application.

Visit trade fairs such as Natural Ingredients Europe and Biofach to meet importers of oleoresins and flavouring manufacturers.

See our study of [finding buyers for natural food additives](#).

6. What are the end-market prices for oleoresins?

The prices of oleoresins differ widely. An important factor determining the price is the oleoresin yield of the raw material. Black pepper oleoresin yields, for example, are relatively high. They range between 3% and 4%, provided that the right raw material is used. By contrast, the extraction of many other raw materials yields only between 0.1% and 1% of oleoresin. The diverging oleoresin yield is also reflected in the price of the oleoresins.

The prices of raw materials are another determining factor. Changes in the raw materials' availability can have a significant influence on the price of the oleoresin. Natural disasters, poor harvests or changing regulations are common causes of raw material shortages. These shortages result in strong price increases.

Table 1: Price developments for selected oleoresins, fourth quarter 2017

Product	Price per kg (Free On Board)	Development
Cardamom oleoresin (10%)	€ 46	Prices came down from € 130 a year ago and have started rising again.

Nutmeg oleoresin (40% oil content)	€ 25	Prices are still low, as global supplies of nutmeg have improved. Usually, prices are somewhat low during the Indian harvest season in May/June and then rise until the new season.
Paprika oleoresin (100,000 colour value)	€ 21	Prices came down after last year's high price levels.
Pepper oleoresin	€ 34	Prices came down from € 50 a year ago; € 34 was the new price during the harvest season. As it is one of the most important spices for India, the government has set a Minimum Import Price to protect local growers.
Turmeric	€ 89	Prices have been steady since last year. Usually, prices are somewhat low during the harvest season starting in February/March and then rise until the new season.
Ginger	N/A	Prices are down from last year.

Source: Meschede, December 2017.

Value addition by importers

Importers typically add a percentage to the prices for their oleoresins. These percentages are lower for large lots than for small lots.

The costs of importers per lot are often similar and thus differentiate strongly per kg within the lot. The below prices are based on costs for freight, handling (incl. clearance) and quality control:

	Turmeric (Free Carrier price of € 89/g)	Paprika oleoresin (Free On Board price of € 21/kg)
10-kg lots	45%	-
50-kg lots	10%	-
100-kg lots	8%	-
500-kg lots	-	7-8%
1,000-kg lots	-	5-6%

Flavouring manufacturers may add another 25-100% depending on their activities (e.g. testing, stocking,

rectification and blending).

Tips:

Minimise costs by sourcing suitable raw materials with a high oleoresin content and a high concentration of volatiles. This approach will help you to become price-competitive. The shape, size and appearance of raw materials are irrelevant. However, the costs of high-grade raw materials can be many times higher than the costs of low-grade raw materials.

Monitor harvests of raw materials in major production countries to anticipate price developments for your specific oleoresin. Check the reports of the International Trade Centre for [updates on price developments](#).

Build strong relationships with your buyers. It will help you to reduce the impact of global price drops for your product. Buyers are commonly more willing to pay their preferred suppliers a little extra when prices are low.

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