

## **CBI Product Factsheet:**

# **Essential Oils from Nepal for the German Market**

## Introduction

The strong demand for essential oils in Germany and the heightened competition for these natural ingredients from emerging markets have prompted German importers to search for new sources. They consider Nepal a potential new source. However, the relatively small scale of Nepalese essential oils production and high prices for some products complicate market entry for Nepalese exporters.

## Product definition

In addition to providing information on the German market for essential oils in general, this fact sheet focuses on oils from Nepal, with particular attention for five essential oils:

- *Gaultheria fragrantissima* (wintergreen)
- *Nardostachys jatamansi* (spikenard)
- *Rhododendron anthopogon* (rhododendron)
- *Juniperus communis* (common juniper)
- *Zingiber officinale* (ginger)

The production of essential oils from these 5 plant species has much potential in Nepal.

### 1. *Gaultheria fragrantissima* (wintergreen)

Wintergreen oil for the German market is distilled from two species of *Gaultheria*: *Gaultheria fragrantissima* and *Gaultheria procumbens*. *Gaultheria fragrantissima*, known in Nepal as Dhasingare and Machino, is native to Asia, while *Gaultheria procumbens* is native to North America. Essential oils of both species primarily contain methyl salicylate and are therefore used interchangeably.

In Nepal, wintergreen oil is extracted from wild-collected leaves. Oil extraction requires enzymatic action in warm water. During this process, a chemical constituent, known as methyl salicylate, is formed as a product of decomposition in the leaves. The oil, mostly consisting of methyl salicylate, is extracted through steam distillation. Common yields are 0.3-0.9%. The oily, pale yellow or pinkish distillate carries a sweet, clear minty scent.

#### ***Gaultheria fragrantissima***



Source: Flickr.com

**Table 1: Applications of wintergreen essential oil**

Segment	Application	Benefits
Fragrance	Perfuming and home fragrances	Sweet odour
Cosmetics	Topical application; applied in low quantities as a skin conditioner in skin-care formulations, and in shampoos and toothpaste	Cleansing, reducing dandruff
Foods	Flavouring application; used (in a dilution of $\leq 0.04\%$ ) in candies, sodas, beers, and gum	Strong, clear minty flavour
Pharmaceutical	In the European Union, only Methyl Salicylate (chemically derived) and Umbellate wintergreen ( <i>Chimaphila umbellata</i> oil) are allowed. The latter for homoeopathic preparations. Further research would be required to determine conformity of <i>G. fragrantissima</i> to these products.	Anaesthetic, antiseptic, relaxation of muscles
Aromatherapy	Use in diffusers; i.e. in incense products	Relaxation

Birch bark essential oil forms a close substitute for wintergreen oil. It is extracted from the wood of the hardwood birch tree (*Betula lenta*), prevalent in temperate and boreal climates of the Northern hemisphere. Wintergreen and birch oils show strong similarities in terms of chemical composition and aroma. However, the availability of birch oil is constrained, due to sustainability issues associated with birch trees. Birch bark oil is also more expensive than wintergreen oil.

The main substitute to natural wintergreen oil is synthetic methyl salicylate. In the pharmaceutical market, synthetic methyl salicylate has completely replaced wintergreen oil, because of better quality consistency. Synthetically produced methyl salicylate is substantially cheaper, but lacks some fragrant notes that are appreciated by cosmetics manufacturers. Moreover, the synthetic product cannot be used in natural or organic cosmetic products.

In 2010, Nepal produced a volume of 3.5 tonnes of wintergreen oil. Whereas total international demand for wintergreen oil is unknown, international demand for Nepalese wintergreen oil is primarily located in Western markets. Of the total Nepalese production of wintergreen essential oil, approximately 70% is exported to the EU and US, for use in various end-products. However, Nepalese exporters face substantial competition from other exporting countries, China in particular. In recent years, China produced an average of 40 to 100 tonnes of wintergreen oil.

## 2. *Nardostachys jatamansi* (spikenard)

*Nardostachys jatamansi*, also known as spikenard, is a flowering plant of the *Nardostachys* genera, which forms part of the *Valerian* family. The plant grows between 3,300 and 6,000 m in the Himalayas, including in Nepal, India, Bhutan, and South-West China.

In Nepal, essential oil producers use wild-collected, dried, and crushed roots for steam distillation to produce an intensely musky, aromatic oil, known as spikenard essential oil. Jatamansi roots have an oil yield between 1 and 3%. The oil has a medium viscosity and is pale yellow in colour.

### ***Nardostachys jatamansi***



Source: efloras.org

**Table 2: Applications of spikenard essential oil**

Segment	Application	Benefits
Fragrance	Applied in perfumes and masking sprays	Strong, earthy scent
Cosmetics	Topical application: i.e. used in skin care formulations such as creams and lotions	Antibacterial, skin radiance/smoothing
Aromatherapy	Use in fragrance diffusers, incense products, candles, and aroma-therapeutic oils	Soothing, stress relieving
Foods	Flavouring agent	Modifier of calamus, valerian, hop, ginger, and cardamom

The global market for spikenard oil is small in terms of volume. International trade usually comprises lots of only around 10-50 kg. In 2006, Nepal produced only an estimated 2 tonnes of Jatamansi. On the international market, competition for Nepalese spikenard oil exporters comes primarily from (re-) exporters in China, India, and France.

### 3. *Rhododendron anthopogon* (rhododendron)

*Rhododendron anthopogon*, commonly known as Rhododendron, is a species of the *Ericaceae* family. The plant is native to a wide region ranging from East Asia to Western China, including the Himalayas. It is harvested in the wild.

Steam distillation of rhododendron's aerial parts produces a pale yellow to clear liquid, known as anthopogon oil. Average yields are 0.3%.

#### Rhododendron anthopogon



Source: *rhododendron.dk*

**Table 3: Applications of anthopogon oil**

Segment	Application	Benefits
Cosmetics	Topical applications: i.e. in shampoo, skin care, and bath gel formulations	Aromatic: floral, fresh, sweet aroma
Fragrance	Mostly applied in natural perfumes	Aromatic: Exotic floral aroma
Aromatherapy	Use in fragrance diffusers, incense mixtures, and candles	Relaxation

In 2010, Nepalese production of anthopogon oil amounted to 250 kg. 80% of the production is exported to international markets such as the EU and USA.

#### 4. *Juniperus communis* (common juniper)

The genus *Juniperus* of the *Cupressaceae* family consists of approximately 68 species. The Nepalese essential oil industry uses 3 of these wild-collected species: *Juniperus indica*, *Juniperus recurva*, and *Juniperus communis*, or common juniper. European importers indicate that most commercially available juniper oil from Nepal is made from wild-collected *Juniperus indica* and *Juniperus recurva*. *Juniperus communis* grows mostly in the Northern hemisphere, across North America, Europe, and Asia and is less prevalent in Nepal.

##### *Juniperus indica*



Source: [forestrynepal.org](http://forestrynepal.org)

Steam distillation of the berries produces a pale yellow essential oil. Depending on the quality of the fruits, yields of juniper berry oil can range between 0.8% and 1.6%, with better quality berries producing a higher yield and oil of a better quality. Less common essential oils are extracted from the roots, needles and twigs.

**Table 4: Applications of Juniper berry essential oil**

Segment	Application	Benefits
Fragrance	Used in men’s perfumes and aftershaves  Used in fragrance diffusers and added in masking sprays	Aromatic properties: fresh, spicy, woody  Masking properties
Cosmetics	Topical application: i.e. used in a broad range of products (especially) soaps  Used in skin care products (i.e. acne crèmes)	Aromatic properties: fresh, clear, and slightly woody aroma  Anti-septic properties
Aromatherapy	Used in fragrance diffusers, incense products, steam inhalation products, massaging oil, bath oils	Relaxing properties
Pharmaceutical	Preparations based on essentials oils on the German market include bath additives, soft capsules.	Blood circulation, anti-rheumatic, diuretic and minor digestive problems
Foods	Flavour application: to flavour foods and drinks, i.e. alcoholic drinks	Flavouring properties: a distinctive clean and tangy taste

Exports of Nepalese juniper oil amount to an annual average of 700 kilos (approximately 50% of total Nepalese production). Nepal mainly exports to the EU, the USA, and India.

## 5. Zingiber officinale (ginger)

Ginger (*Zingiber officinale*) is a species of the *Zingiberaceae* genus and family. The ginger plant is indigenous to Southern China and eventually spread to the Moluccas and other parts of Asia, West Africa, and the Caribbean. The ginger plant is a perennial plant that thrives best in (sub-) tropical climates. Ginger is mostly grown for its root. In Nepal, ginger is also widely cultivated.

Steam distillation of the root produces essential oil. Its yield commonly ranges between 2-4 %. The oil can vary in appearance, from a pale yellow to a darker amber colour and from a medium to a watery viscosity. It has a strong spicy, warm, and sharp odour, similar to the smell of the fresh ginger root.

### Zingiber officinale



Source: [pubs.sciepub.com](https://pubs.sciepub.com)

**Table 5: Applications of ginger root essential oil**

Segment	Application	Benefits
Fragrance	Used mostly in men's fragrances and aftershaves. Used in fragrance diffusers and masking sprays	Aromatic properties Aromatic and masking properties
Cosmetics	Topical application: i.e. added to lotions and skin conditionings	Moisturizing properties
Pharmaceutical	Use of root is permitted in herbal medicine. Use of essential oils is not permitted.	Prevention of nausea and vomiting in motion sickness, mild, spasmodic gastrointestinal complaints
Aromatherapy	Used in fragrance diffusers, incense and fragrance sticks, candles, incense oils	Aromatic properties: spicy and warm
Foods	Flavouring and preservative agent in foods, soft drinks, and beverages (<25 ppm).	Flavouring properties: hot and pungent taste Antimicrobial properties

With international demand for fresh ginger root steadily increasing in the food market, ginger oil prices have risen accordingly. Chinese, Indian, and Indonesian (re-) exporters form the main competition for Nepalese suppliers on the international market. China produces an estimated 50-80 tonnes annually.

## Classification of essential oils:

- Harmonised System (HS): 3301.29 – ‘essential oils other than citrus and mint oils’
- A Chemical Abstract Service (CAS) Registry Number ‘provides an unambiguous way to identify a chemical substance or molecular structure when there are many possible systematic, generic, proprietary or trivial names’:
  - Wintergreen oil: 68917-75-9
  - Spikenard oil: 90064-28-1
  - Anthopogon oil: 8006-90-4
  - Juniper berry oil: 8002-68- 4/ Juniper root, needle, twig oil: 84603-69-0
  - Ginger oil: 8007-08-7
- [Cosing](#), the European Commission database of cosmetic substances and ingredients, lists several essential oils separately under their INCI names. The International Nomenclature of Cosmetic Ingredients (INCI) is a system of names that ‘differ greatly from systematic chemical nomenclature or from more common trivial names’. For the five essential oils under study, the following INCI names apply:
  - Wintergreen oil: *Gaultheria fragrantissima* Wall (wintergreen) leaf oil
  - Jatamansi oil: *Nardostachys jatamansi* oil
  - Anthopogon oil: *Rhododendron anthopogon* Flower/Leaf Extract
  - Juniper berry oil: *Juniperus communis* fruit oil/Juniper roots, twig, and needle oil: *Juniperus communis* wood oil
  - Ginger oil: *Zingiber officinale* root oil
- UN numbers identify hazardous substances in the framework of international transport:
  - Wintergreen oil: 1169
  - Spikenard oil: 1169
  - Anthopogon oil: 2319
  - Juniper berry oil: 1169
  - Ginger oil: 1169

## Product specifications

### Quality

Consistent quality is a major concern for German buyers of essential oils and is related to physical properties, chemical composition, and the prevention of contamination by foreign materials including adulterants. Exporters must know the properties of their product and are responsible for quality management, which requires close cooperation with their suppliers, the growers.

- ISO standard [16928:2014](#) for ginger oil (*Zingiber officinale* Roscoe)
  - ISO standard [21390:2005](#) for wintergreen oil (*Gaultheria yunnanensis*)
  - ISO standard [8897:2010](#) for juniper oil (*Juniperus communis* L.)
- ISO standards are not available for anthopogon oil and spikenard oil.

## Physical properties and chemical composition

- Raw plant materials are harvested from different areas using different procedures. For example, the specific plant variety, environmental conditions (e.g. climate), and the time of harvesting all have an influence on product quality. Variation in physical properties also means the essential oil content and chemical profile will vary.
- The main chemical constituents of the five essential oils under study are identified in the table below:

**Table 6: Main chemical constituents of five essential oils**

Oil	Major chemical constituents
Wintergreen oil	Methyl salicylate (preferably >96%)
Spikenard oil	b-gurjunene (21.9%), valerana-4,7(11)-diene (6.1%), a-guaiene (4.9%), valeranone (4.1%), cyperene (3.4%), seychellene (3.2%), 7-epi-a-selinene (3.0%)
Anthopogon oil	$\alpha$ -pinene (26.3%), $\beta$ -pinene (11.2%), limonene (9.6%), cis- $\beta$ -ocimene (6.0%), $\delta$ -cadinene (8.4%), and $\alpha$ -muurolene (4.6%)
Juniperus indica leaf oil	sabinene (25.1%), trans-thujone (14.9%), trans-sabinyil acetate (15.3%), terpinen-4-ol (8.8%), myrcene (2.8%)
Ginger oil	n.a.

- Buyers often also determine the quality of essential oils on a more subjective basis, looking at appearance (colour and viscosity) and aroma.

### Tips:

- Information on the chemical profile by (accredited) laboratories of the oil is important to buyers. Work together with a local university department to test your essential oil. They can help determine the chemical profile of the oil to be included in your product documentation, such as the Product Fact Sheet and specifications.
- Prepare a feasibility study to determine whether your oil has sufficient potential in the market based on its intrinsic quality. Your price must reflect the value of your product, which largely depends on its chemical composition.

## Quality management

Harvesting and post-harvesting practices (including processing) also affect quality of essential oils. Exporters are responsible for the product they export and must often play an active role in raw material production.

### Tips:

- Minimise the time between harvesting raw plant materials and distillation to prevent quality deterioration and loss of flavour/aroma. Depending on the type of raw material, it must be processed within hours or days.
- Ensure that plants used for distillation are fresh and cleaned.
- Apply Integrated Pest Management (IPM) or purchase raw materials from pesticide-free areas to comply with EU regulations on Maximum Residue Levels for pesticides. Buyers will analyse the oil for these residues.
- Prevent contamination by sand and undesired plant parts by training collectors to cut properly, and by keeping facilities, storage rooms, and equipment clean. In addition, essential oils should be kept at a moderate temperature to prevent quality deterioration.
- Minimise significant discrepancies in quality by following strict grading and sorting standards for raw materials selection.
- Standardise and minimise significant variations in your product's quality by closely monitoring harvesting practices through regular inspections and by blending essential oils from different harvests (e.g. early and late harvests, or different areas). Always make sure that the quality of the standardised essential oil (blend) matches the requirements of your buyer.
- Be clear on what quality you can supply continuously. Once you develop a quality standard, you must be able to maintain that same level of quality, also when scaling up your production.
- Use extraction methods (temperature, pressure, time) consistent with the buyer's preferences and specifications.
- Prevent adulteration and contamination by foreign substances to preserve your reputation. Importers regularly analyse products for adulteration.
- To improve the handling quality of essential oils, consider incentives when you train collectors.

### Labelling

Labelling of products for export is mandatory and mainly serves traceability and safety during transport and storage.

- As an exporter, facilitate traceability of individual batches with markings on each container and registration in an administrative system, whether they are produced by blending or not.
- Use the English language for labelling unless your buyer has indicated otherwise.
- Labels must include the following:
  - Product name/INCI name
  - Batch code
  - Place of origin
  - Name and address of exporter
  - Date of manufacture
  - Best before date
  - Net weight
  - Recommended storage conditions
- For **organic** certified essential oils specifically: add Name/code of the inspection body and certification number.
- Suppliers of hazardous chemical substances to Germany must comply with Regulation for Classification, Labelling, and Packaging of chemicals to ensure that hazards presented are clearly communicated. Suppliers must include the relevant hazard symbols (examples shown on the right), risk phrases, and safety phrases.



Hazard labels

**Table 7: Relevant hazard information for the 5 selected essential oils**

Oil	Applicable risk phrase	Risk symbol	Safety phrase
Wintergreen oil	R22, R36-R38, R43	Xn, Xi	S2, S3, S7, S13, S15, S20. S23 – S26, S28, S29, S36, S37, S39, S45, S51, S60, S62-S64
Spikenard oil	R10, R65, R90	Xn	S62
Rhododendron oil	R10, R22, R36-R38, R44	Xn, Xi, F	S2, S3, S7, S13, S15, S16, S20, S23-S29, S33, S36, S39, S41, S43, S45, S51, S60, S62-S64
Juniper berry oil	R10, R43, R50-R53, R65, R66	Xn, N	S25, S37, S61, S62
Ginger oil	R36 - R38	Xi	S2, S3, S7, S13, S15, S23 - S26, S28, S29, S36, S37, S39, S45, S51, S60, S63, S64

Refer to the [Commission Directive 2001/59/EC](#) for an elaborate definition of the flammability, risk phrases, and safety phrases, of the abbreviated symbols and of the phrases above. The Directive provides technical information for the implementation of the EU regulation on classification, labelling, and packaging.

## Packaging

- [ISO standard 210:2014](#) provides general rules for packaging, conditioning, and storage of essential oils.
- Always consult your buyer for specific packaging requirements.
- Check in the [HazMat database](#) if your essential oil is hazardous and has a UN number and use UN-approved packaging. For more information, check the details provided by the [European Federation of Essential Oils](#) on the transport of dangerous goods.
- Ensure the preservation of the quality of essential oils by:
  - Using containers of a material that does not react with constituents of the oil (e.g. lacquered or lined steel, aluminium).
  - Cleaning and drying the containers before filling them with essential oil.
  - Filling the headspace in the container with a gas that does not react with constituents of the oil (e.g. nitrogen or carbon dioxide).
- Facilitate the re-use or recycling of packaging materials by, for example, using containers of recyclable material (e.g. metal for essential oil).
- Store the containers in a dry, cool place to prevent quality deterioration.
- Organic essential oils should remain physically separated from conventional essential oils.



*Food grade containers*

## Requirements you must meet

The applicability of legislative requirements for the export of essential oils depends on their destination. In general, requirements are most strict when the essential oil is destined for use in pharmaceuticals. Requirements are less strict when the essential oil is destined for use in food or cosmetics.

**Table 8: Legislative requirements for essential oils in Germany**

Subject	Explanation	Reference
<i>Applicable for all markets</i>		
Endangered Species	CITES regulates the trade in (among other things) wild-collected endangered plants and gives a detailed list of species for which trade is prohibited, restricted or bound to certain rules.  Of the five species under study, only Spikenard is CITES listed under Appendix II and its export requires a permit. You can find an example of such a permit <a href="#">here</a> .	<a href="#">EU Buyer Requirements for Natural Ingredients for Cosmetics</a>
<i>Applicable for food (including food supplements)</i>		
Food safety	Food processors must have a food safety management system in place based on HACCP principles. This does not have to be certified.	<a href="#">EU Buyer Requirements for natural colours, flavours, and thickeners</a>
Permitted flavourings	Only permitted flavouring substances are allowed to be used in or on foods. All chemical constituents of an essential oil must be on the Union list of flavouring substances.	<a href="#">EU Buyer Requirements for natural colours, flavours, and thickeners</a>
<i>Applicable for cosmetics</i>		
EU Cosmetics Regulation	Restrictions on use of substances in cosmetics and requirements for so-called 'Cosmetic Product Safety Reports' and 'Product Information Files'.  You cannot make medical claims on cosmetic ingredients. A <a href="#">list</a> of cosmetic functions is available (reference only).	<a href="#">EU Buyer Requirements for Natural Ingredients for Cosmetics</a>
REACH	Essential oils need to be registered with the European Chemicals Agency under REACH (Registration Evaluation and Authorisation of Chemicals) legislation	<a href="#">EU Buyer Requirements for Natural Ingredients for Cosmetics</a>
<i>Applicable for health products</i>		

Subject	Explanation	Reference
Market authorisation	<p>If you claim that your essential oil prevents or treats a medical condition, your product must be approved/authorised by the EU competent authorities.</p> <ul style="list-style-type: none"> <li>• Wintergreen oil: only Methyl Salicylate (synthetic) and Umbellate wintergreen (<i>Chimaphila umbellata</i> oil) are allowed. The latter for homoeopathic preparations.</li> <li>• Spikenard oil: not authorised</li> <li>• Anthopogon oil: not authorised</li> <li>• Juniper oil: only <a href="#">authorised for use in herbal medicine</a></li> <li>• Ginger oil: only the root is authorised for use in herbal medicine and food supplements (i.e. the essential oil is not)</li> </ul>	<a href="#">EU Buyer Requirements for Natural Ingredients for Health Products</a>
Good Agricultural and Collection Practices (GACP)	<p>Legally binding for medicinal plants and increasingly common for farming and wild collection of cosmetic ingredients, prior to processing.</p>	<a href="#">EU Buyer Requirements for Natural Ingredients for Pharmaceuticals</a>
Good Manufacturing Practices (GMP)	<p>The European GMP for medicinal products is based on the guidelines of the World Health Organisation (WHO)</p>	<a href="#">EU Buyer Requirements for Natural Ingredients for Pharmaceuticals</a>

Also refer to the [EU Export Helpdesk](#) for more information on buyer requirements.

## Common requirements

The requirements listed below are common in Germany. Most of your competitors already comply with these requirements.

**Table 9: Common requirements for essential oils**

Subject	Explanation	Reference
<i>Applicable for all markets</i>		
Sustainable business practices	German buyers prefer suppliers that apply sustainability principles in their business. This involves social and environmental responsibility as well as sustainable sourcing practices.	<a href="#">EU Buyer Requirements for Natural Ingredients for Cosmetics</a>
Documentation	Ensure the buyer can access the following documentation: <ul style="list-style-type: none"> <li>• Technical Data Sheet (TDS) or Specification</li> <li>• Certificates of analysis to support the claims of the specification</li> <li>• GMO, Halal and Kosher certificate (if requested)</li> <li>• Certificate of origin</li> <li>• Material Safety Data Sheet (Example of an MSDS: <a href="#">Caelo</a>)</li> </ul>	<a href="#">EU Buyer Requirements for Natural Ingredients for Cosmetics</a>  'Material Safety Data Sheet of Essential Oils from Nepal': available in hardcopy through the Natural Product Research Laboratory of the Government of Nepal
Representative samples	Your sampling method should result in lot samples that represent what you can deliver in terms of quantities, quality, and lead time as specified by the buyer and in your technical data sheet	<a href="#">ISO 212:2007 for sampling of essential oils</a> and <a href="#">ISO 356:1996 for preparation of essential oil test samples</a>
Delivery terms	Pay attention to strict compliance with <a href="#">delivery terms</a> as agreed upon with your buyer	<a href="#">EU Buyer Requirements for natural colours, flavours, and thickeners</a>
Website	German buyers look for credible suppliers. You can improve the perceived credibility of your company by developing your website accordingly.	<a href="#">EU Buyer Requirements for natural colours, flavours, and thickeners</a>
<i>Applicable for food (including food supplements)</i>		
Food safety certification	Many German food manufacturers require their suppliers to implement a HACCP-based food safety management system such as ISO 22000.	<a href="#">EU Buyer Requirements for natural colours, flavours, and thickeners</a>
<i>Applicable for cosmetics</i>		
Good Manufacturing Practices (GMP)	The European Federation for Cosmetic Ingredients has developed a standard for GMP	<a href="#">EU Buyer Requirements for Natural Ingredients for Cosmetics</a>
International Fragrance Association (IFRA) Standards	IFRA Standards form the basis for the globally accepted and recognised risk management system for the safe use of fragrance ingredients	<a href="#">EU Buyer Requirements for Natural Ingredients for Cosmetics</a>
Documentation	Ensure the buyer can access the following documentation: <ul style="list-style-type: none"> <li>• Technical Data Sheet including CAS number and information on allergens (in accordance with IFRA standards)</li> </ul>	<a href="#">EU Buyer Requirements for Natural Ingredients for Cosmetics</a>

## Niche requirements

Comply with below requirements to gain access to specific market segments.

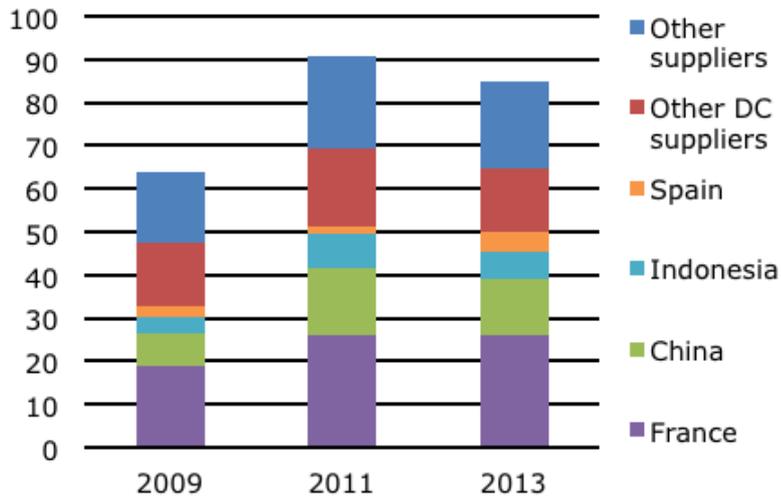
**Table 10: Niche requirements for essential oils**

Subject	Explanation	Reference
Applicable for all markets		
Certified sustainable	Certification of organic and/or fair production is increasingly appreciated by German buyers	<a href="#">EU Buyer Requirements for natural colours, flavours, and thickeners</a>
Applicable for cosmetics		
Natural cosmetics	'Natural cosmetics' are often referred to as cosmetics containing a certain minimum amount of natural ingredients. The introduction of standards defining the natural cosmetics market has driven the development of private sector standards. The introduction of standards like <a href="#">NaTrue</a> and <a href="#">Cosmos</a> .	<a href="#">EU Buyer Requirements for Natural Ingredients for Cosmetics</a>

## Trade and Macro-economic statistics

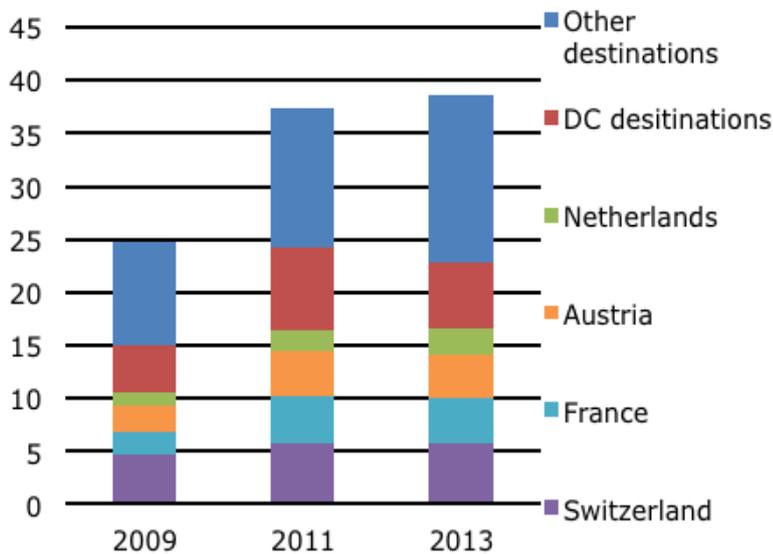
(!) Trade statistics included in this segment are for 'essential oils (excl. those from citrus fruit and mint)'.

**Figure 1: Main suppliers of the German market of essential oils, in € million**



Source: Eurostat 2014

**Figure 2: Main destinations of German essential oils exports, in € million**



Source: Eurostat 2014

## Imports

- Driven by price increases in the period 2009-2013, the value of German essential oils imports increased at an average annual rate of 7.3% to € 85 million. In terms of volume, total German imports decreased at an average annual rate of 0.7% to 2.9 thousand tonnes. The price increases are largely the result of increasing demand for essential oils from emerging markets such as China and the increasing global demand for natural products. Meanwhile, production remains stable and is sometimes even under pressure from other, more profitable crops. In the case of wild-collected raw materials, rising wages for collectors in several countries further add to price increases.
- France is the most dominant supplier of essential oils to the German market, accounting for a share of 31% of total import value. Moreover, between 2009 and 2013, French supplies increased at an average annual rate of 8.3%, reaching € 26 million. France has a very strong fragrance industry, which (re-) exports many essential oils to other European countries including Germany. Since French importers add a lot of value to products (e.g. purification), the average value of their (re-) exports to Germany is relatively high at € 47 /kg, compared to € 29 /kg for total supplies to Germany.
- Other leading suppliers to the German market in 2013 include China (15% of total German import value), Indonesia (7.5%), and Spain (5.3%). China is a particularly big supplier of low value oils, such as Eucalyptus oil, cedar wood oil, and star aniseed oil. In terms of volume, China supplies 40% of German imports.
- The rising prices of many essential oils have prompted German importers to search for new sources. Nepal is such a potentially new source. Currently, Nepalese supplies of essential oils are still negligible, accounting for only 0.1% of the total German import value in 2013. However, between 2009 and 2013, German imports of Nepalese essential oils increased at an average annual rate of 5.2%, amounting to € 50 thousand / 1.7 tonnes in 2013.

### Tip:

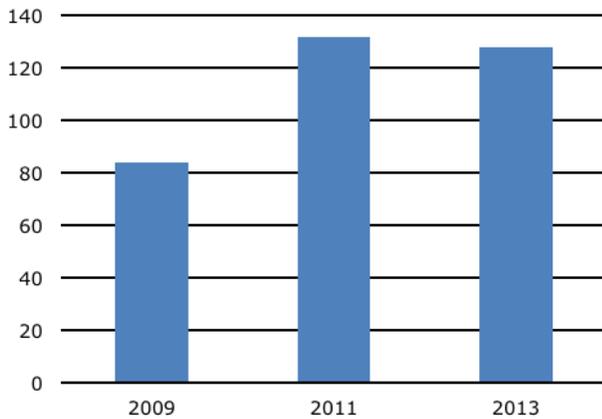
- Analyse export data of countries that produce similar or competing essential oils. Refer to the section on product definitions for competitors. In many cases, there are more (specific) export statistics available from statistics offices of exporting countries. You could, for example, check the website of their Departments of Commerce.

## Exports

- In 2013, German exports of essential oils amounted to a total value of € 39 million (1.2 thousand tonnes in volume), indicating an average annual growth rate of 12% since 2009. German (re-) exports of essential oils are predominantly destined for other EU markets (a share of 71% of total German export value). Important destination countries of German exports in terms of value include Switzerland (15% of total German export value), France (11%), Austria (11%), and the Netherlands (6.4%).

## Production and consumption

Figure 3: Value of essential oils produced or processed in Germany, in € million



Source: Eurostat 2014

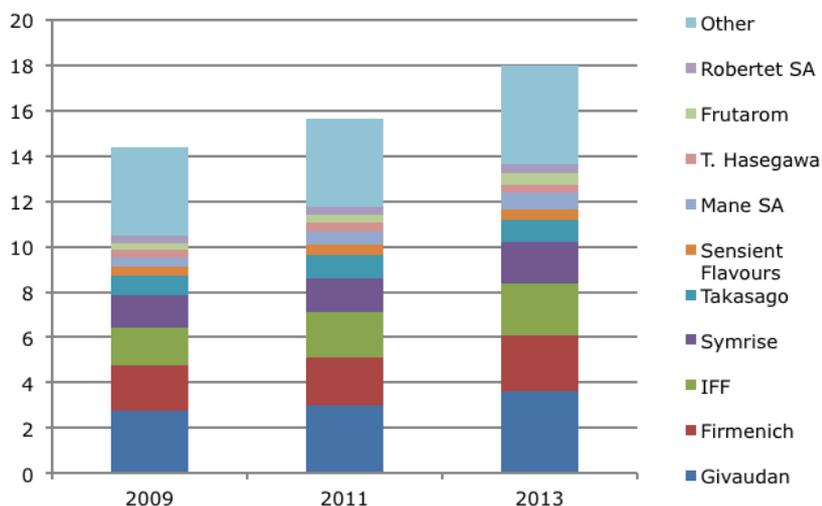
## Production

- Since 2009, the value of German production and processing of essential oils increased significantly at an average annual rate of almost 12%, amounting to € 132 million in 2011. Since 2011, German production has decreased only marginally, at an average annual rate of 0.7% and amounting to a value of € 128 million.
- Germany plays an important role in total EU production of essential oils. It is the 2nd largest EU producer after France, accounting for 20% of the total EU production value in 2013.
- German producers will offer fierce competition in the market for refined essential oils. Germany has a strong extraction industry, which uses high-tech extraction techniques such as supercritical extraction to prepare highly refined essential oils from raw materials, which are imported from other countries.

## Industrial demand

- Globally operating flavours and fragrance manufacturers are the main buyers for essential oils in Germany. Their sales figures provide an indication of developments in their market and subsequent demand for essential oils.

Figure 4: Development of the world's leading flavour and fragrance manufacturers, sales in € billion



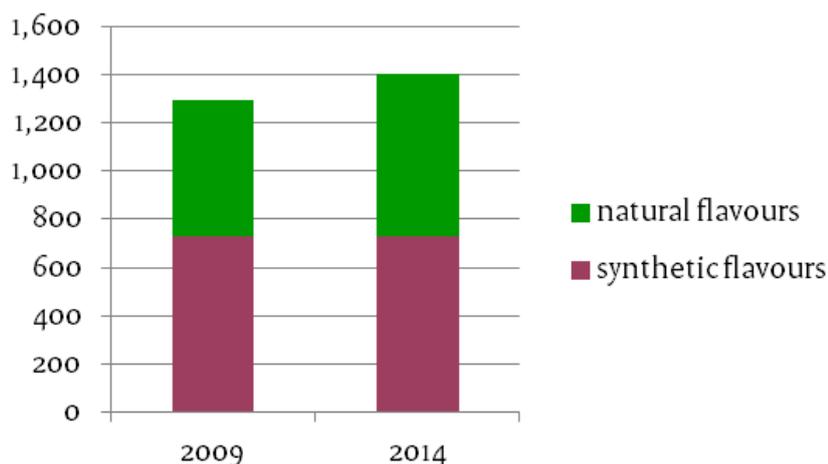
Source: Leffingwell & Associates (2014)

- Between 2009 and 2013, global sales of flavour and fragrance manufacturers increased by 5.8% annually to € 18 billion. Growing demand for natural cosmetics and natural flavourings is an important driver of growth in these sales.
- The two major flavour and fragrance manufacturers, Symrise and WILD Flavors, are headquartered in Germany, while all other major manufacturers have sales offices or manufacturing locations in Germany.

### Industrial demand for flavourings from the food industry

- The German flavour industry consists of some 50 companies. 95% of them are organised in the German association of the flavours industry ([DVAI](#)).
- Increased Western European demand for more complex flavours drives sales values of many of these companies upwards. In Eastern European markets, increased demand for flavours in general has stimulated sales. Emerging markets outside Europe, such as Southeast Asia and Latin America, have also made a significant contribution to growing sales of the German flavour industry.
- In Western Europe including Germany, demand for natural flavours was a particularly strong driver of total flavourings sales (see figure 5). This also explains the strong demand for essential oils, as ingredients for these natural flavours.

**Figure 5: Composition of Western European flavours market in 2009 and 2014 (forecasted)**



Source: RTS Resource, 2010

### Industrial demand from the cosmetics industry

- Germany is the leading European market for natural cosmetics, as opposed to cosmetics with mainly synthetic ingredients. In the first half of 2013, the German market for certified natural cosmetics grew by 10%. The expected turnover for that year amounted to € 950 million. Please note, however, that sales of these finished products do not automatically reflect increased essential oils usage, although it does give a general picture of the market.
- Similar to the flavour industry, the natural trend is the main driver of industrial demand for essential oils in cosmetics. However, within the cosmetics industry, the use of essential oils in fragrances shows less growth than other uses.

### Industrial demand from the pharmaceutical industry

- Although the German pharmaceutical industry is sizeable, it is an insignificant market for essential oils from Nepal. Most of the five selected essential oils are not allowed as pharmaceutical ingredients.

## Market trends

### Natural ingredients

The German market for food and cosmetics is increasingly propelled by the 'natural' trend, since the awareness of environmental and social issues becomes more central to consumer choice. As this is a growing trend, producers of food and cosmetics are increasingly looking for new natural ingredients to include in their products. Consequently, the global natural cosmetics sector is estimated to grow annually by 5%.

#### Tip:

- Within the cosmetics market, focus on the market of natural cosmetics, specifically for fragrances and skin care products where essential oils are most commonly used.

### Ethical products

A growing interest in ethically sourced products provides an opportunity for fair trade and organically certified essential oils. In addition, consumers are interested in the story behind ethical certification. In their marketing, German manufacturers actively communicate about the ingredients in their products, using the most compelling stories to improve the connection with the consumer. Communication takes place using images, with short stories about the product, production, origin, local benefits, and traditions, or using the producer's corporate image.

#### Tips:

- Check your opportunities for supporting German buyers in their ethical sourcing. Consider certification when buyers need proof of your business' sustainability. Certificates are particularly attractive when targeting markets for food applications and cosmetic applications other than fragrances.
- In addition to certification, focus on the story behind your essential oil in your promotional material. Helping German producers communicate stories that set them apart in the market will also help to position your own company better in the market.

### Sustainable sourcing

Ensuring the sustainability of supply is increasingly relevant to German buyers of essential oils for two reasons:

- Consumers are becoming more interested in the production of their purchases. They want to know that the production is sustainable for the people involved and for the environment.
- Buyers themselves require stable supplies of strategic ingredients, while applying sustainability principles to secure those supplies.

The increasing need for sustainability is prompting German buyers to invest in stronger relationships with their suppliers. For example, they invest in training suppliers in sustainable management of natural resources. Moreover, exporters will have to make their supply chains more transparent by providing more information to buyers about their supply chain management and take more responsibility for the sustainability of raw material production.

#### Tip:

- Keep track of sustainability initiatives that are of interest for your product in trade press such as [Cosmetics Design Europe](#) and [Cosma](#).

### Aromatherapy with benefits

Within the cosmetics market, there is a growing niche for cosmetics products with aromatherapy properties, which provides additional opportunities for essential oils. In the German aromatherapy market, cosmetics with essential oils are marketed as having additional benefits, such as restorative or relaxing qualities.

**Tip:**

- Especially for cosmetics with an aromatherapy benefit, you need to be aware that you are not allowed to claim that the oil has health or medicinal benefits. Choose words carefully to describe the product/ingredient benefits to prevent the product from being considered a medicinal product, for which requirements are far more stringent than cosmetics.

**Safety**

Removing allergens from essential oils, while keeping them natural, offers opportunities for innovation and makes them "safer". Consumers, cosmetic producers, and regulators in Germany are increasingly demanding safe products sourced in known, verifiable supply chains, demanding proof of safety of essential oils for fragrances.

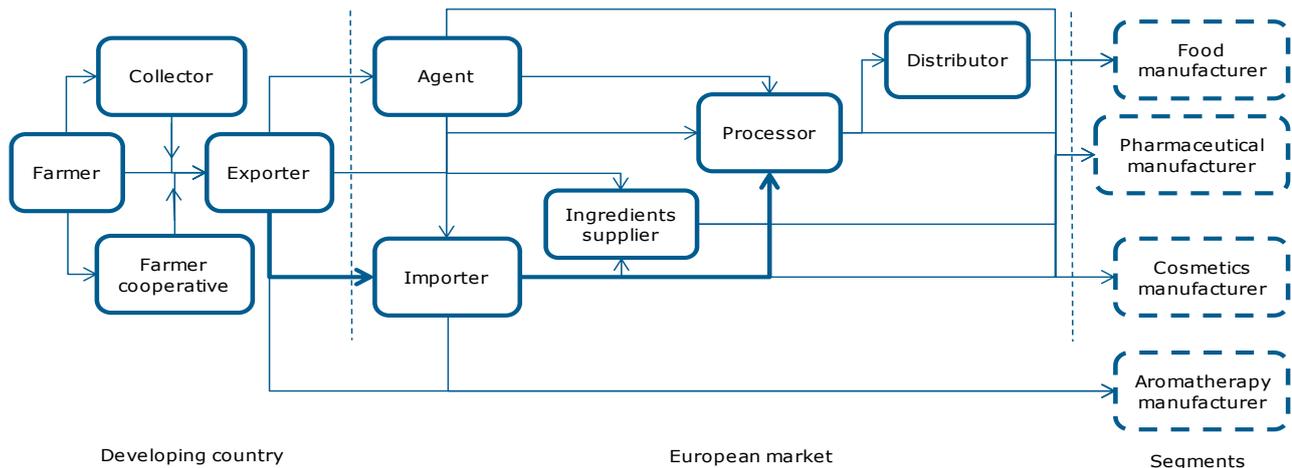
**Tips:**

- When possible, identify or specify your ingredient in detail, for example on origin or properties; this can add value in terms of both marketing and product specifications.
- Please refer to [CBI Trends for flavours](#) and [CBI Trends for essential oils for cosmetics](#) for more market trends.

## Market channels and segments

### Market channels

Figure 6: Major market channels for essential oils



Essential oils commonly pass many different intermediaries before they reach the consumer. Agents, importers, ingredients suppliers, and distributors add value to the product through their logistics services, while processors and manufacturers add value by transforming the product.

### Strong role of processors

Instead of purchasing directly from suppliers in developing countries such as Nepal, German food and cosmetics manufacturers continue to purchase most of their flavourings and fragrances from European processors, many of them in Germany. They do so for several reasons:

- They increasingly require more complex flavours and fragrances to differentiate their products from the competition. They rely on processors to do research and develop new products, such as unique low-cost flavours and fragrances that 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 requires close collaboration with processors.
- They require high-quality consistency, which is often achieved through fractionation and isolation of chemical constituents of essential oils. These processes require high-tech equipment and skilled staff.

In contrast to their role in markets for flavour and fragrance applications, processors are often not involved in essential oils trade for aromatherapy applications. Exporters of essential oils for aromatherapy often supply the market more directly.

### Strong role of importers

Importers, while consolidating, remain the main point of entry for many essential oils, especially for low-volume oils such as Spikenard oil. Their major functions in the value chain:

- Lowering costs to end-users by importing relatively large volumes to achieve economies of scale and selling smaller quantities.
- Offering a large range of essential oils to their buyers. This is convenient for the latter who do not need to purchase from different suppliers.
- Administration of trade in compliance with EU legislation, such as REACH.

#### Tip:

- Benefit from the experience and knowledge of specialised German importers instead of approaching end-users directly. Especially for exporting specialised products, traders are the most suitable distribution channels.

Please refer to [CBI Market channels and Segments for natural flavours](#) for more information.

## Market segments

### Different applications

Cosmetics and foods are the main market segments for essential oils. Tables 1 to 5 provide details about specific applications. Depending on the type of essential oil, either the cosmetics market or the food market is more important.

In the cosmetics industry, essential oils are used in perfumes or in fragrance materials to provide scent to other cosmetics products. They can be used both as base notes and as fixatives. In other cases, essential oils are used to provide a particular aroma-therapeutical property to a product. Many essential oils can only be used in limited concentrations in cosmetic products according to EU legislation.

The food industry uses essential oils as ingredients for flavourings. In general, it uses very little expensive essential oils such as spikenard oil. Particularly the soft drinks industry, the largest user of essential oils within the food segment, uses very little expensive essential oils. Nonetheless, high prices of some essential oils do not always matter much to food and beverage manufacturers. As they usually apply flavourings in concentrations of less than 1% and the expensive essential oil may only comprise a small fraction of the flavouring, its share in the cost of the end-product can be negligible.

#### Tip:

- Research the specific properties of your oil. [Cosinq](#) lists the properties registered for several essential oils for application in cosmetics; use these in your promotional material. Make sure not to make health claims!

## Sustainable essential oils

Organic, Fairtrade, and otherwise (certified) sustainable essential oils form a growing niche market in Germany. In fact, Germany is a leading market for organic products, including organic cosmetics, and also plays a major role in the European Fairtrade market. Both markets for organic and Fairtrade products are expanding and not limited anymore to products like fruits, wine, and spices.

Until recently, there was virtually no market for organic certified essential oils, because food manufacturers can use conventional essential oils in organic products. EU legislation allows the use of ingredients from conventional production if it constitutes less than 5% of the end-product and the organic certified equivalent is not commercially available. As more essential oils producers have obtained organic certificates, organic food manufacturers are more often obliged to use organic certified essential oils.

Buyers do not always require certification of sustainability. Some buyers will audit suppliers themselves to verify claims regarding sustainability.

#### Tips:

- It is important to focus on the story behind sustainable certification and to give adequate and honest information to your buyers. In your promotional material, stress the social benefits to local communities of your production.
- If you want to obtain a FairWild or Fairtrade certificate, check the requirements of the [FairWild standard](#) or [Fairtrade standard](#). Always discuss these opportunities with your buyers.
- Discuss the opportunities for organically certified essential oils with your potential buyers before launching into a product development plan to source organic raw material.

## Price

Prices of essential oils vary widely. A prominent factor in determining the price is the oil yield of the raw material. For example, compared to the other four essential oils under study, ginger root distillation yields are relatively high, ranging between 2-4%. Contrarily, distillation of *Juniperus communis* yields only between 0.8-1.6% of essential oil. The diverging oil yield is also reflected in the prices of the oils. The price of ginger oil amounted to € 160 /kg in September 2014, compared to prices of € 210-450 /kg for Juniper berry oil (COSSMA, 2014).

Prices of raw materials are another determining factor. Changes in the raw material's availability can have a significant influence on the price of the essential oil. This is, for instance, evident from recent developments in the ginger market.

Increased demand for fresh ginger in the food market negatively affects the availability of roots for distillation and drives prices of ginger oil upwards.

Natural calamities, poor harvests, changing regulations or poor harvest management can also cause raw material supply constraints and subsequent price increases. In Nepal, rising labour costs also add to rising raw materials costs.

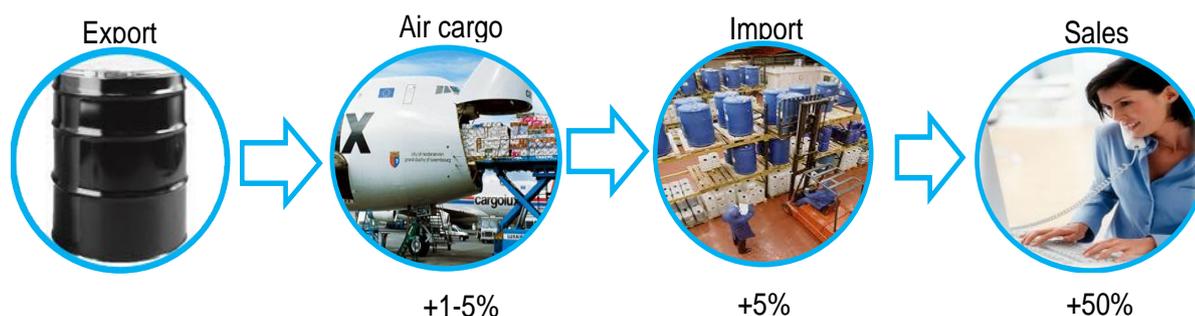
Other factors influencing the price of essential oils include: chemical properties of the oil (determining the markets in which the product can be used), processing methods and purity.

#### Tips:

- Monitor harvests of raw materials in major production countries to anticipate price developments for your specific essential oil. You may request such information from importers. Additionally, anticipate the possibility for raw material availability constraints in the near future. Regularly monitor availability constraints via helpdesks, such as the [Red list of the International Union for Conservation of Nature](#) (IUCN) and the CITES list.
- When pricing your product, consider the maximum price the market is willing to pay for your product, plus demand, cost analysis, and break-even analysis. Ensure that the price reflects the quality levels and delivery conditions. Take competing products on the market into account.

The following price breakdown shows which costs and margins are applied to essential oils before they reach the end user.

**Figure 7: Price breakdown for essential oils, mark-ups in %**



Source: *Profound*, 2014

If agents are involved, they typically receive a commission of a few (2-5) per cent. However, their actual profit margin strongly depends on volumes sold and gross margin. They will normally lower their gross margin for big volumes.

#### Tip:

- Agents are particularly interesting if you do not have a strong sales network. You can look for commercial agents on the website of the [Federation of German Commercial Agents and Distributors \(CDH\)](#). However, once you have established a trade relationship through an agent, you cannot establish a direct relationship with the buyer anymore. The agent's sales network is protected by law.

Importers add a margin of up to 25-100% to the product depending on the activities undertaken, such as testing, stocking, and rectification.

## Field of Competition

### Market entry

The growing German flavours and fragrances market still offers room for new entrants. Especially for suppliers that differentiate themselves from the competition with an attractive chemical profile, a higher quality or an interesting provenance story. The latter will become particularly useful in the long term. Nonetheless, new entrants face considerable barriers:

### Minimum quantities

In general, the minimum quantities required by buyers are becoming increasingly large, as they aim to reduce overhead costs per unit. However, the five oils under consideration in this study continue to be niche products, compared to some

commodity oils traded on the global market, such as peppermint oil. Trade in niche oils, especially when they are scarce, is not bound to minimum quantities. Sometimes, 1 litre is sufficient to allow for shipment by airfreight.

**Tips:**

- Some scale is required to export to Germany. For example, the minimum quantity of wintergreen oil and ginger oil interesting for German importers is 1 tonne. The minimum quantity of Jatamansi oil is about 1 kg.
- Use the potential of your domestic market to grow to the scale required for export to Germany.

### Strict product specifications

Buyer expectations of services from suppliers are increasing. German buyers are particularly demanding in terms of services. They expect suppliers to understand their buyer's product specifications and adapt their production processes if product specifications of buyers or production conditions change. For this reason, buyers prefer long-term trade relationships and will only switch to new suppliers if those offer significantly better products and/or services.

**Tips:**

- Optimise your supply chain and production process for quality consistency and obtain a certificate for quality management (e.g. ISO 9000 or 22000)
- Document your production process for reference, including: temperatures, pressures, extraction times, etc. This enables traceability of deviations in product specifications.
- Build long-term trade relationships to evade competition with other market entrants in the spot market

### Detailed documentation

European legislation such as REACH and CLP places a great administrative burden on German essential oils importers. Some smaller importers, such as the former importer Eramex, spend up to 20% of their time on administration to comply with EU legislative requirements. In order to decrease this burden, they increasingly require their suppliers to provide more information on their products. In practice, the extra overhead costs for administration have made the import of small quantities of essential oils unattractive. This complicates market entry for new, smaller exporters in developing countries.

**Tip:**

- Do not underestimate the value of elaborate documentation for successful entry to the German market. Some German buyers work according to higher quality standards than their peers in other European markets.

### Product competition

In general, essential oils continue to face strong competition from synthetic substitutes. German manufacturers can synthesise many of the chemical constituents of essential oils. Synthetic ingredients are generally cheaper and more reliable in terms of supplies, chemical profile, and quality consistency. Despite these advantages of synthetic ingredients, demand for natural essential oils remains strong and sometimes even grows. The natural trend, as described earlier, stimulates German manufacturers of diverse products to use natural essential oils instead of synthetic substitutes. Some manufacturers even substitute synthetic products by natural products. For example, in the food industry, manufacturers aim for 'clean labels' that do not contain names of ingredients that may be perceived as chemicals by consumers.

**Tips:**

- Promote the fact that your product is natural.
- Address the weaknesses of your product compared to its synthetic equivalent, such as quality consistency and quantities. When specifications of your essential oil differ from previous supplies, clearly communicate to your buyer what caused the differences (e.g. quality of crops).
- Establish long-term trade relationships with your own suppliers in order to secure stable supplies.

### Company competition

Until recently, many European buyers, particularly in Germany, were extremely price-sensitive and readily switched to cheaper suppliers. However, since the emergence of China and other developing countries as markets for essential oils, the market situation is changing radically. Former net-exporters of essential oils are turning into net-importers. The amount of

essential oils available on the international market decreases. As such, Europe and the USA are no longer the only destinations for suppliers.

German buyers have to respond to this trend by investing more resources in their existing trade relationships. They also search for new origins and possibilities for expansion in net-exporting countries such as Nepal. They are diversifying their sources to mitigate the risk of losing existing suppliers to other buyers who are competing for the same raw materials. They become particularly appreciative of suppliers who invest in sustainable supplies and who possess a thorough understanding of their buyer's interests.

#### Tips:

- Point out to buyers that the availability of essential oils from traditional sources is threatened by domestic consumption and that Nepal can become a major alternative source of essential oils in the long term. Explain about sector development in Nepal, including improvements in production capacity.
- Gain a better understanding of your buyers' needs and 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 to learn about the properties of your products.
- Please refer to [CBI Field of Competition](#) for more information.

#### Useful sources

- COSSMA - <http://www.cossma.com> - is a very valuable, innovative, tri-lingual magazine, providing news concerning perfumery and cosmetics
- SÖFW-Journal is the leading German magazine on cosmetics formulations - <http://www.sofw.com>
- Foodnavigator - <http://www.foodnavigator.com/> - an online new site with frequent updates on the German flavourings industry

#### Trade fairs

Visiting and especially participating in trade fairs is highly recommended as one of the most efficient methods for testing market receptivity, obtaining market information, and finding prospective business partners. The most relevant trade fairs in Europe for exporters of essential oils are:

- In-Cosmetics ([www.in-cosmetics.com/](http://www.in-cosmetics.com/))
- Beyond Beauty ([www.beyondbeautyparis.com](http://www.beyondbeautyparis.com)) in Paris, France
- SANA ([www.sana.it/en](http://www.sana.it/en)) in Bologna, Italy
- Vivanness ([www.biofach.de](http://www.biofach.de)) in Nuremberg, Germany (for organic producers)
- Health Ingredients Europe ([www.figlobal.com/hieurope/home](http://www.figlobal.com/hieurope/home)) in Frankfurt, Germany



**CBI Market Intelligence**

P.O. Box 93144  
2509 AC The Hague  
The Netherlands

[www.cbi.eu/market-information](http://www.cbi.eu/market-information)

[marketintel@cbi.eu](mailto:marketintel@cbi.eu)

This survey was compiled for CBI by ProFound Advisers in Development  
in collaboration with CBI sector expert Klaus Duerbeck

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