



CBI
Ministry of Foreign Affairs

CBI Product Factsheet:

Beeswax in Europe

Introduction

Beeswax has great potential in the EU food industry, as it is a natural glazing agent with valuable functionalities. Increasing availability and application knowledge are the major challenges.

Product definition

Beeswax refers to the wax obtained by melting the walls of the honeycomb made by the honey bee, *Apis mellifera* L.. Beeswax products range from yellow beeswax to white beeswax and to beeswax absolute. Yellow beeswax is the crude product obtained from the honeycomb, white beeswax is yellow beeswax bleached, and beeswax absolute is yellow beeswax treated through ethanol extraction. In small quantities, white beeswax can be used as a glazing agent added in food. Glazing agents produce a protective coating and create a polish/shine on the surface of a food such as confectionery or baked goods. Beeswax is also a release agent, stabilizer and texturizer for chewing gum base, a carrier for food additives (including flavours and colours) and a clouding agent.

Beeswax is insoluble in water but soluble in alcohol and has the highest melting point among all natural waxes (61 - 65 °C).

Codes for beeswax:

- Harmonised System (HS): 15219091 Beeswax and other insect waxes, crude, 15219099 Beeswax and other insect waxes, whether or not refined or coloured
- E-number: E901
- Chemical Abstracts Service (CAS): 8012-89-3 (white beeswax), 8006-40-4 (yellow beeswax)

Beeswax has numerous uses in several markets such as cosmetics, pharmaceuticals, candles, polishes and food coatings. This product factsheet only analyses the market for beeswax as a food glazing agent. For more information on the uses of beeswax in the cosmetics market please refer to the [CBI Product Factsheet: Waxes for cosmetics in Europe](#).

Product specifications

Quality

- General specifications for food additives including glazing agents are defined by the European Commission in Regulation 231/2012: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:083:0001:0295:EN:PDF> (search for E 901 or go to page 250 for beeswax specifications)
- [Codex Alimentarius](#) also has defined specifications for beeswax.
- The chemical composition of beeswax consists mainly of esters of fatty acids (67%) such as monoesters (35%), diesters (14%), triesters (3%), hydroxyl monoesters (4%), hydroxyl polyesters (8%) and various hydrocarbons (14%). Additionally, beeswax contains small quantities of free acids (12%), long-chain alcohols (1%) and other substances.
- Make sure your product is pure and has not been adulterated with other cheaper products (such as paraffin).
- Buyers generally prefer a light colour and minimum odour.

Labelling

- Enable traceability of individual batches.
- Use the English language and EU measures (e.g. kilograms) for labelling unless your buyer has indicated otherwise.
- Labels must include the following:
 - Product name
 - Batch code
 - Whether the product is destined for use in food products
 - Name and address of exporter
 - Best before date
 - Net weight
 - Recommended storage conditions
- Organic, Halal and Kosher markings are optional

Packaging

Beeswax is exported in small blocks of less than 25 kg and wrapped in special paper or plastic foil. Importers in the EU prefer to receive blocks of beeswax bare, without any cover of jute or polyethylene bags, because they stick to the

beeswax when it melts during transport. Preferably, the blocks are put in stainless steel containers. Other materials negatively affect the quality of the beeswax.

Buyer requirements

What legal requirements must my product comply with?

Food safety:

Food processors must have a food safety management system in place based on HACCP principles. These systems require companies to demonstrate their ability to control food safety hazards in order to ensure that food is safe at the time of human consumption. Furthermore, products must be traceable throughout the supply chain. If European companies or authorities find out that the safety of your product cannot be guaranteed, they will take the product off the market and will register it in the EU's Rapid Alert System for Food and Feed.

Tip:

- Search in the EU's [Rapid Alert System for Food and Feed](#) (RASFF) database to see examples of withdrawals from the market and the reasons behind these withdrawals.

Contamination:

The EU has laid down maximum levels of contaminants, pesticides and criteria for microbiological contamination of food.

Tip:

- Use the EU Maximum Residues Level (MRL) database to find out which MRLs are relevant for your product. There, you can find the list of MRLs related to your product. For more information on MRLs, please refer to the EU Export Helpdesk.

Tip:

- If your raw materials have been wild-collected, inform collectors about good agricultural collection practices.

What additional requirements do buyers often have?

Food safety certification:

As food safety is a top priority in all EU food sectors, you can expect many players to request extra guarantees from you in the form of certification. Particularly many European food manufacturers require their suppliers to implement a (HACCP-based) food safety management system, such as ISO 22000.

Tip:

- For more information on food safety management systems, please refer to the website of the Global Food Safety Initiative and the Standards Map. Make sure you are informed of your buyers' requirements regarding certification and which food safety management system they prefer.

Religion:

European buyers commonly require certificates for compliance with Kosher and Halal requirements. This enables the food and beverage industry to use the ingredient in products targeted at a wide consumer group including Muslims and Jews.

Tip:

- Obtain Halal and Kosher certificates. Often this does not require changes in your processes. Refer to the Halal Authority Board or your certifier of choice for more information.

Documentation:

Buyers appreciate well-structured product and company documentation. Buyers generally require detailed Technical Data Sheets (TDS) and Material Safety Data Sheets (MSDS).

Tip:

- Make sure that you have documentation (e.g. certificate of analysis, MSDS, food safety management certificates) available upon request. Prepare your TDS and MSDS in compliance with annex II of EU Regulation No 1907/2006. Here you can find an example of an MSDS for Beeswax.

Representative samples:

Your sampling method should result in lot samples that represent what you can deliver in the quantities, quality and lead time as specified by the buyer.

Delivery terms:

Pay attention to strict compliance with delivery terms as agreed upon with your buyer.

Tip:

- Familiarise yourself with [international delivery terms](#).

Website:

European buyers look for credible suppliers. You can improve the perceived credibility of your company by developing your website accordingly.

Tip:

- Capol is a UK glazing agent supplier (including beeswax among others) with a website that serves as a good example: www.capol.co.uk

What are the requirements for niche markets?

Certified sustainable:

European consumers are increasingly concerned about the impact of their consumption on the environment. This concern is translated into increased consumer demand for organic certified products. Therefore, demand for organic beeswax is considerable on the part of European importers. This trend can also be attributed to the limited availability of organic certified beeswax in Europe. Organic beeswax is produced in apiaries which follow the requirements of organic beekeeping (such as the prohibition of antibiotics and pesticides and prevention of foraging by bees on genetically modified crops).

Tip:

- Consider certification as organic or otherwise sustainable production if you specifically target the niche market for these products. In that case, you will have to comply with the organic production of agricultural products' requirements in the [EU Council Regulation 834/2007](#).

Tip:

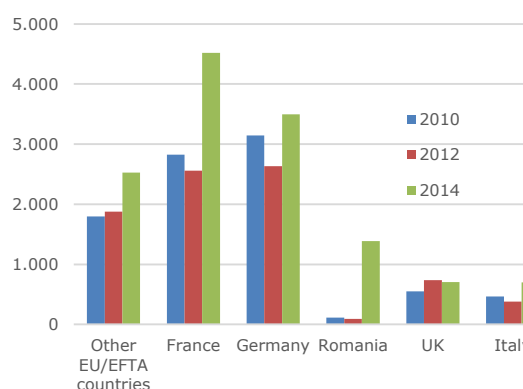
- Visit the ITC's [Standards Map](#) for more information on certification schemes for sustainable production.

Trade and Macroeconomic statistics

Imports

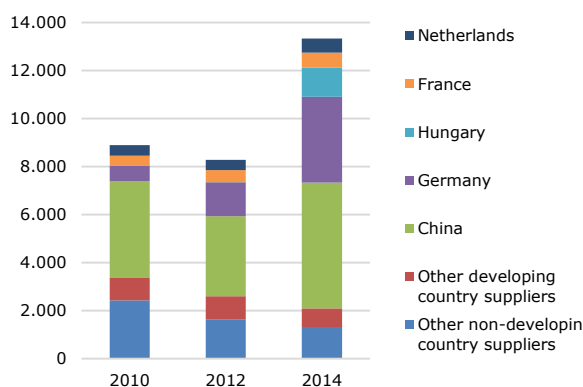
The HS codes for yellow and white beeswax include beeswax for different uses. The following graphs do not represent the market for beeswax as a glazing agent only.

Figure 1: European imports of beeswax, in tonnes



Source: Eurostat (2015)

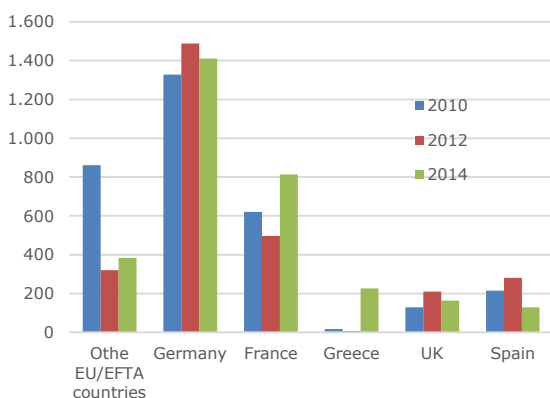
Figure 2: Major suppliers of beeswax to the EU, in tonnes



Source: Eurostat (2015)

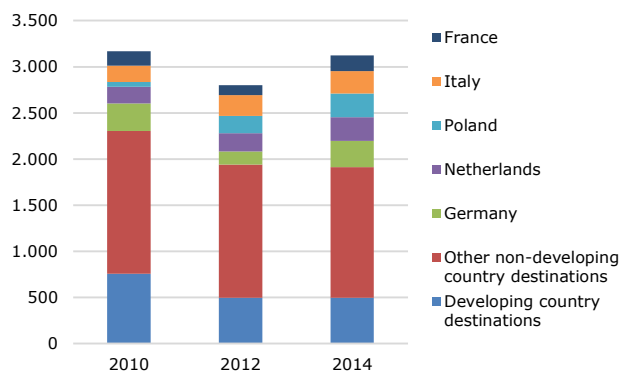
Exports

Figure 3: Exports of beeswax to the EU, in tonnes



Source: Eurostat (2015)

Figure 4: Destinations of European exports of beeswax, in tonnes



Source: Eurostat (2015)

The market for beeswax is expected to grow:

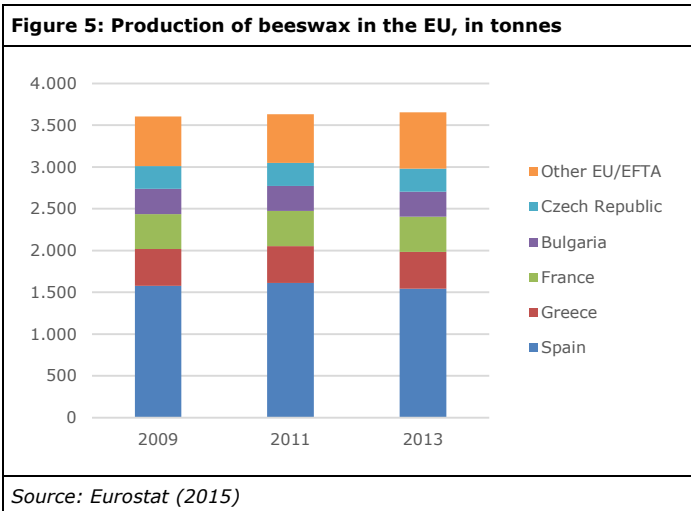
China is by far the largest supplier of beeswax to the EU. Chinese beeswax is cheap and has not suffered from the bad reputation of Chinese honey. Quality requirements for beeswax are less restrictive than those for honey and purchasing cheap (Chinese) beeswax is less risky for EU importers. Germany and France are major users and re-exporters of beeswax, while The Netherlands is principally a re-exporter.

Tip:

- Provide information on applications, functionality and benefits of beeswax to potential users and distributors of glazing agents.

Tip:

- Promote clean labelling opportunities for food manufacturers. For more information, please refer to the section under 'Trends'.

**Production**

Production data are available on FAOSTAT only for the following countries: Bulgaria, Cyprus, France, Greece, Italy, Czech Republic, Portugal, Slovakia, Spain and Belgium. These countries represent 50% of honey production in the EU, and are estimated to account for a similar share of the total EU beeswax production.

FAO reports that European beeswax production amounted to more than 3,500 tonnes in 2013. The data do not include production in countries such as Germany, which is a leading honey producer. It is unlikely that they produce no beeswax. It is estimated that actual European production of beeswax amounted to 3,500-7,000 tonnes. However, European beekeepers use much of their beeswax production for foundation sheets for their frame hives and candle-making. This means that production of beeswax for the use of glazing agents is very limited.

Production of honey and beeswax in the EU is expected to decrease in the future, due to decreasing bee populations. EU countries will need to import larger amounts of honey from producers outside the EU to satisfy the demand, which will be stable.

Tip:

- The growing need for imports of beeswax presents an opportunity for developing countries.

European consumption expected to grow:

Beeswax is widely used as a glazing agent in the food industry, providing a shiny, homogenous, waxy protective surface on food products. As a food additive, the development of the beeswax market depends on the progress of the food additives market, which is expected to grow as Europe recovers from the economic recession ([Leatherhead, Food Research](#)).

The size of the global food additives market was estimated at about €41 billion in 2014, while it is expected to grow at a rate of 3.6% annually between 2012 and 2018 ([Transparency Market Research](#), 2014).

In order to use beeswax in food applications, it needs to be processed and refined. Refining of beeswax takes place almost exclusively inside the EU's borders. There are only a few dominant refineries in the EU. Some of the major ones include [Koster Keunen](#) (Netherlands), [The British Wax Refining Co.](#) (UK) and [Kahl Wax](#) (Germany).

Please refer to [CBI Trade Statistics for natural colours, flavours and thickeners](#) for more trade statistics.

Trends

Replacement of synthetic glazing agents:

European consumers are more conscious about the contents of their food and are looking for healthy and natural alternatives. The market for glazing agents has been affected by this general trend. The use of natural glazing agents such as beeswax in confectionery and baked products is regarded as more healthy by European consumers, making natural glazing agents more popular.

Tip:

- When you market your product, make sure you focus on the natural characteristics and properties it might have.

Strict measures against adulteration:

Adulteration of beeswax with other waxes is a major concern in the European market for natural glazing agents. As a response, European laboratories responsible for sample analyses have improved the detection methods for adulterants.

Tip:

- The risk of an adulterated product being detected is substantially increasing. Make sure that your beeswax is not adulterated with any other substance, physical or chemical.

Organic beeswax:

European consumers are increasingly concerned about the impact their consumption has on the environment. This increasing concern has resulted in a rise in organic certified products and beeswax is one of them. The market for organic beeswax currently forms a small part of the total beeswax market. Organic beeswax is mainly used in natural cosmetics. However, since organic beekeeping is already quite mainstream, especially in the EU, organic beeswax is available to be used in food applications.

Tip:

- Consumer awareness and current availability are estimated to impact positively the share of organic beeswax in the market for natural glazing agents, thus creating opportunities for developing country exporters. If you can supply organic beeswax, then target EU buyers who will pay more for organic certified beeswax.

Importance of sustainability:

During the processing of beeswax, large amounts of water and energy are used to heat and melt the beeswax. The highly variable energy prices, together with the realisation that most of the world's energy sources are not renewable, are both drivers for a potential reduction in the use of energy and water. Consequently, importers will appreciate companies which are working towards energy reduction, efficient water use, recycling and other sustainability initiatives in their audits.

Tip:

- Reduce energy consumption by increasing the efficiency of your processing equipment or use renewable energy sources.

Tip:

- Address occupational health and safety. Develop your own policies or apply the international standard [OHSAS 18001](#) (occupational health and safety management system specification).

Clean labelling:

Currently, there is a widespread perception among European consumers that natural ingredients are by definition healthier, safer and more sustainable than synthetic ingredients. This trend, which continues to grow, will benefit exporters of beeswax, which is a natural product.

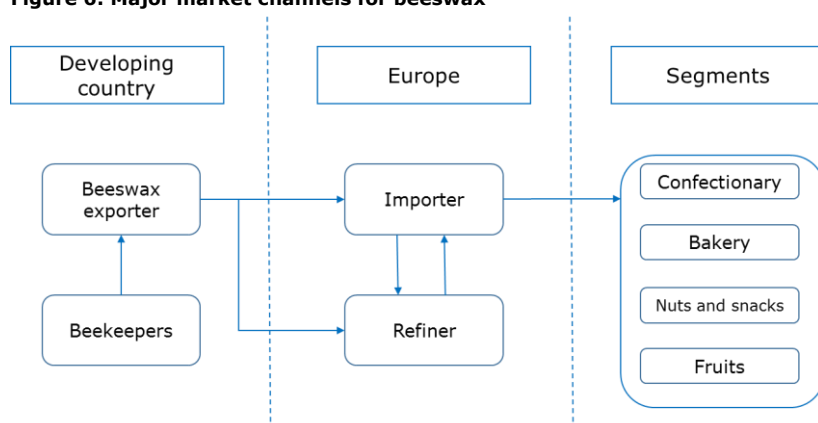
Tip:

- Promote the naturalness of your product. Especially for beeswax, the connection with beekeeping and the production of honey (which is also a natural product) in the form of a story of origin will attract European buyers.

Market channels and segments

Market channels

Figure 6: Major market channels for beeswax



Source: ProFound, 2015

All commercial beeswax in the EU is destined for industrial use. Approximately 60% of imported beeswax is crude and needs first to be refined before the industry can use it. The crude beeswax is either imported by a refiner directly or through an importer or agent. Some importers of honey also import beeswax and have it refined by specialist refiners, before they sell it to the industry.

Refining of beeswax is mostly done in the EU. Since the process requires a specific set of technology, financial and human resources, there are only a few refiners in developing countries with the capacity to supply the EU.

Market segments

Table 1: Major food segments and applications for beeswax

Segment	Application	Benefits
Confectionery	Candy, cookies	Used to polish and seal, improving product's appearance, texture and shelf life
Bakery	Dough, croissants, doughnuts	Used to maintain moisture and softness in baked goods
Nuts and snacks	Nuts, raisins, dried fruit, liquorice	Used for coating/moisture barrier to keep the centre from drying out
Fruits	Citrus fruit, melons and apples	Coating material in fruits to improve appearance and to preserve quality

Source: ProFound, 2015

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

Price

The average price of yellow beeswax is an estimated €5 per kg for average quality beeswax in 2015. However, there is a worldwide scarcity of high-quality, pesticide-free and low-residue beeswax. Consequently, prices for this high-quality beeswax can be higher than for lower quality wax, estimated at €7-8 per kg.

Competition

European market easily accessible:

The market for beeswax is expected to grow as the demand for natural glazing agents grows. Moreover, the demand for beeswax is currently higher than the supply, partly because of the declining beekeeping sector in the EU. Therefore it is easier for exporters of beeswax to access the European market.

Advantage for major exporters:

In order to keep costs at a minimum, beeswax buyers are required to take advantage of economies of scale. This is why they frequently order very large quantities of wax (i.e. 20 tonnes), either for export markets or for industrial uses. This makes selling small quantities of beeswax rather difficult for ordinary beekeepers.

Risk of substitution:

European consumers are increasingly looking at healthy options for their food, and the health aspect is closely related to the natural aspect. This trend has also impacted the EU food processors, who are looking for ways to substitute synthetic glazing agents with natural ones, such as beeswax. This process is not always easy, since there are differences in functionality between synthetic and natural glazing agents. Overall, the risk of substitution of beeswax by synthetic glazing agents is minimal. Nevertheless, the increasing prices of high-quality beeswax increase the risk of substitution of beeswax with other waxes, such as carnauba wax.

Main sources

International trade fairs

- SIAL (<http://www.sialparis.com/>)
- Anuga (<http://www.anuga.com>)
- Alimentaria (<http://www.alimentaria-bcn.com>)
- Biofach (<http://www.biofach.de>)
- Food Ingredients Europe & Natural Ingredients (Fi/Ni) and Health Ingredients Europe & Natural Ingredients (Hi/Ni) alternate every year. In 2015, it is Fi/Ni (<http://www.figlobal.com/fieurope/home>).

More information

- CBI market information: Promising EU export markets.
- EU Expanding Exports Helpdesk - <http://exporthelp.europa.eu> - go to 'trade statistics'.
- Eurostat - <http://epp.eurostat.ec.europa.eu/newxtweb> - statistical database of the EU. Several queries are possible. For trade, choose 'EU27 Trade Since 1995 By CN8'. Use the guide 'Understanding Eurostat: Quick guide to easy comext' (http://epp.eurostat.ec.europa.eu/newxtweb/assets/User_guide_Easy_Comext_20090513.pdf) for instructions.
- International Trade Statistics - <http://www.trademap.org> - you have to register
- European wax federation - <http://www.wax.org/>



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This survey was compiled for CBI by ProFound – Advisers In Development
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