

Entering the European market for frozen berries

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Food safety certification combined with reliable and frequent laboratory testing helps create a positive image for frozen berries suppliers wishing to export to Europe. Emerging suppliers can reap additional advantages through sustainable production methods and the implementation of social responsibility measures. The toughest existing competitors for new suppliers of frozen berries are Serbia and Poland. As the majority of frozen berries are used as ingredient, characteristics like a high Brix value, colour intensity and a characteristic flavour are important to European buyers.

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1. What requirements must frozen berries comply with to be allowed on the European market?

All food products, including frozen berries, sold in the European Union must be safe. Imported products are no exception. Only approved additives are allowed. Limits are placed on harmful contaminants, such as bacteria or viruses, pesticide residues and heavy metals. It should also be clear from the labelling whether a food contains allergens.

Contaminant control in frozen berries

The [European Commission Regulation](#) sets maximum levels for certain contaminants in food products. This regulation is frequently updated and apart from the limits set for general foodstuffs, there are a number of specific limits that apply to contaminants in specific products, including frozen berries. The most common requirements regarding contaminants in frozen berries relate to the presence of pesticide residues and micro-organisms.

Controlling contamination by foreign bodies

Fresh and frozen berries may be contaminated by foreign bodies such as metal parts (for example from agricultural machinery and tools), earth, stones, insects and insect parts. You should consider investing in metal detectors to prevent contamination with metal parts. In addition to consumer protection, metal detectors will help you prevent damage to your processing machinery. However, to prevent other types of contamination by foreign bodies, you should implement eye/hand control before processing and packing.

Pesticide residues

The European Union has set maximum residue levels (MRLs) for pesticides found in and on food products. Products containing levels of pesticides exceeding the prescribed limit are withdrawn from the European market. The majority of European importers request extensive testing for the presence of a wide range of

pesticides (sometimes more than 500). Due to an increase in the number of requests for such laboratory checks, the number of border rejections of frozen berries due to pesticide residues has decreased over the years.

The European Union regularly publishes [a list of pesticides](#) that are approved for use in the European Union. This list is frequently updated. During 2020 and 2021, several pesticides were and will be withdrawn from the European market, namely: beta-cyfluthrin, benalaxyl, bromoxynil, mancozeb, benfluralin, chlorpyrifos, chlorpyrifos-methyl and thiacloprid.

In 2020, the European Union implemented a set of policies and actions called the European Green Deal with the aim to make the European economy more sustainable and climate neutral by 2050. The action plan also includes a 50% reduction in the use of pesticides and an increase of the share of agricultural land used for organic farming to 25% by 2030. This means that many pesticides will be banned and residue levels will decrease gradually over the next years.

Microbiological contaminants

One of the main reasons for border rejections or market withdrawals of frozen berries from the European market is the presence of microorganisms such as norovirus, salmonella or hepatitis A.

The main reason for the occurrence of these infectious micro-organisms in frozen berries is the lack of hygiene control during harvest and transport. The majority of small berries (such as raspberries or blackberries) are very soft and cannot be washed after harvesting as washing would destroy them. Therefore, it is important for developing country suppliers to educate berry pickers to practice good hygiene and ensure the vehicles used for transport are clean.

Control of chlorate and perchlorate

One of the recent changes concerns the level of chlorate. It is set to 0.05 mg/kg for most fruits and vegetables (including frozen). [Legislation on chlorate levels](#) entered into force in June 2020. Chlorate is no longer approved as a pesticide, but it can come into contact with food through the use of chlorinated water during fruit washing (for example, strawberries). Another source may be the use of chlorinated detergents used for cleaning of facilities and processing equipment.

Heavy metals

In August 2021, the European Commission set the [maximum level of lead](#) for cranberries, currants, elderberries, and strawberries at 0.20 mg/kg wet weight. For other berries, this limit is also set to 0.20 mg/kg. Also, the [maximum level of cadmium](#) is set at 0.05 mg/kg wet weight for raspberries and at 0.04 mg/kg wet weight for other berries.

Product composition requirements

Buyers and European authorities can reject products if they have undeclared, unauthorised, excessive or incorrect levels of food ingredients and additives. This means that laboratory tests on ingredients, nutrients and their shares and additives must be in line with the declared values of your product specification. For the largest volumes of berries, product composition requests are not of high relevance as most of the berries are exported as clean and clear products without additives.

Intentional placing of wrongly declared products on the European market is considered a criminal activity. Therefore, you must follow the rules in order to maintain and build a good reputation. Luckily, food fraud in frozen berry products is extremely rare.

Some examples of authenticity problems with frozen berries which occasionally appear include:

- Declaring a false variety when offering frozen berries – an example is mixing early Italian strawberry varieties (low brix and weak flavour types) with the Senga Sengana variety (high brix and strong flavour types). Product specification may allow a very small percentage of other varieties but it is rarely higher than 5%.
- The ratio of frozen berries in retail berry mixes is different than declared – an example is increasing the share of strawberries (the cheaper berry) and decreasing the share of raspberries or blueberries (the more expensive berry).
- Adding water in bulk-frozen berry products – an example includes water addition in frozen berry blocks. Although water glazing is commonly used in some types of frozen products (such as fish), it should not be used in frozen berries. The only optional ingredient allowed for frozen berries used as ingredients is sugar in the form of sucrose, invert sugar, invert sugar syrup, dextrose, fructose, glucose syrup, or dried glucose syrup. If glazing is used for some ingredient products such as blocks, the weight of the product must be measured without glaze/water.

Packaging requirements

The contents of the packaging must correspond to the indicated quantity (in weight or volume) on the label. Importers will check packaging size and weight to ensure that pre-packed products are within the [limits of tolerable errors](#). Food contact materials may not transfer their constituents to frozen berries in quantities that could endanger human health, change the composition of the food in an unacceptable way, or deteriorate the taste and odour.

Labelling requirements

Labelling of bulk export packaging is rather simple and includes items such as the name of the product (for example, frozen raspberry) and a closer description (such as whole, IQF, crumble, etc.). Other information for bulk packaging includes: quantity, lot identification number, name and address of the producer, storage and transport instructions. Additional information depends on the type of berry product and may include variety, the year of harvest or brix level. The information for bulk packaging must either appear on the container or be provided in accompanying documents.

In the case of retail packaging, product labelling must be in compliance with the [European Union Regulation on the provision of food information to consumers](#). If you pack your berries as a private label, your buyer will give you a precise specification and design of the packaging. In the case of exporting a retail product under your own label, the following information must be included on the labelling:

- Nutritional information: energy value and the quantities of fat, saturates, carbohydrates, protein, sugars, and salt per 100 g. It is possible to place additional nutritional information on the retail products on a voluntary basis, such as fibre content, vitamins or minerals.
- Presentation of allergens (like soy, nuts or gluten) in the list of ingredients. Allergens are not common for frozen berry products.
- Indication of origin (since April 2020). For example, if strawberries are imported from Egypt but packed in Germany, the packaging must indicate the origin. The way to do it is to indicate “Egypt” as the origin, but the packer also can write “non-EU”, or declare “blueberries do not originate from Germany.”

All mandatory information must be written using a minimum font size of 1.2 mm.

Tips:

- To ensure you are prepared for potential changes in the MRLs, read the [ongoing reviews of MRLs in the European Union](#).
- Follow the guidelines published by the European Association of Fruit and Vegetable Processors (PROFEL) to [prevent the transmission of microorganisms via frozen fruit](#). Invest in training for your suppliers and workers to teach them food hygiene rules and use clean water for irrigation and spraying. You should pay attention to the cleanliness of packaging materials and transport vehicles.
- Read our study about [buyer requirements for processed fruit and vegetables](#) for a general overview of

What additional requirements do buyers often have?

Quality requirements

There is no official quality standard in Europe for frozen berries. For reference, some traders use Codex Alimentarius standards for frozen strawberries, raspberries, bilberries (wild blueberries) and cultivated blueberries. Frozen berries can be presented as whole and free-flowing (individually quick frozen – IQF), non-free flowing (in the form of blocks), crumbled (in the form of crushed berries), sliced (in the case of strawberries) or a combination of crumbled and whole. Crumbled raspberries can be further classified into two quality categories: ‘standard’ or ‘yogurt’.

Some processors define additional quality categories. Examples include ‘original’ when the contents of the container after picking are frozen without any sorting. Another example is the ‘confiture’ class of blackberries where the ratio between red and black berries is higher than in the IQF class. For IQF blackberries, usually up to 10% of berries are allowed where the colour turns from black to red during freezing. This ratio of red berries in the ‘confiture’ class can be 20% or even more.

Some basic quality requirements for frozen berries are the following:

- Good, reasonably uniform colour, characteristic of the type of fruit and variety
- Clean, sound and free from foreign matter
- Free from foreign flavour and odour
- When presented as individually quick frozen (IQF): practically free from berries adhering to one another (in clumps)
- Free from completely uncoloured berries and reasonably free from uncoloured berries. Blackberries are allowed to have a small number of red-coloured berries. The change in colour from black to red, which usually occurs after freezing, is something that regularly happens to a small degree.
- Normally developed with the shape typical for the variety used and of similar varietal characteristics in each package
- For aggregate types of berries: reasonably free from disintegrated berries or berries that are not intact
- After thawing, berries should not lose more than 5% of fruit juice

Some quality criteria, such as taste and flavour, are subjective and cannot be easily determined by physical characteristics. Also, different market segments value different quality criteria. For example, the jams and juice industry value a high Brix level (sugar level of water berries solution) and flavour over the other characteristics. On the other hand, packers of retail products value the shape of free-flowing frozen berries (not sticking to each other). Retailers and the baking industry prefer berries that keep the same shape after defrosting.

Some varieties have preferred characteristics and commonly reach higher prices on the European markets. For example, the frozen Willamette variety (typical for Serbia) is usually sold at higher prices compared to varieties typical for Poland such as Polana or Polka. Another example is the frozen Senga Sengana strawberry variety, which gets higher prices compared to early Italian varieties. In case of blueberries, wild picked frozen blueberries (also called bilberries) are exported at a significantly higher price compared to frozen “high bush” blueberries.

Food safety certification

Although food safety certification is not obligatory under European legislation, it has become a must for almost all European food importers. Most established European importers will not work with you if you cannot provide some type of food safety certification.

The majority of European buyers will ask for certification recognised by the [Global Food Safety Initiative](#) (GFSI). For frozen berries the most popular certification programmes, all of which are recognised by GFSI, are:

- [International Featured Standards](#) (IFS)
- [British Retail Consortium Global Standards](#) (BRCGS)
- [Food Safety System Certification](#) (FSSC 22000)

Please note that this list is not exhaustive and food certification systems are constantly under development.

Although different food safety certification systems are based on similar principles, some buyers may prefer one management system in particular. For example, British buyers often require BRC, while IFS is more common for German retailers. It should also be noted that food safety certification is only a basis from which to start exporting to Europe. Serious buyers will usually visit/audit your production facilities within no more than a few years.

Corporate Social Responsibility

Companies have different requirements as regards corporate social responsibility. Some companies will require adherence to their code of conduct or to audits such as the Supplier Ethical Data Exchange ([SEDEX](#)), Ethical Trading Initiative ([ETI](#)) or Business Social Compliance Initiative code of conduct ([BSCI](#)). If frozen berries are destined for the retail segments, suppliers will be asked to follow the specific code of conduct developed by the retailers themselves. Many retailers have their own code of conduct. Examples are [Lidl](#), [Rewe](#), [Carrefour](#), [Tesco](#) or [Ahold Delhaize](#).

Packaging requirements

The most common types of bulk packaging for frozen berries are polyethylene bags and cardboard boxes lined with plastic foil. There is no rule but usually first-class IQF frozen berries are placed in smaller packages while second-class berries, crumbles or frozen blocks are packed in larger packages. Cardboard packaging is usually smaller in size (commonly up to 10 kg to 15 kg) while the bags are larger in size (usually up to 25 kg). The retail packaging of frozen berries may vary greatly depending on the buyers' requests but it usually consists of plastic bags or cartons.

The cardboard boxes are packed on Euro-pallets (80 x 120 cm), and protected with polyethylene foil. The cardboard must be durable enough to keep its shape under the weight on the pallet during prolonged storage. Cardboard boxes are sealed with tape.

Tips:

- Get food safety certification. Carefully select a certifying company and consult with your preferred buyers about their certification preferences.
- Do a self-assessment using the producer starter kit via the [amfori BSCI website](#).

What are the requirements for niche markets?

Organic frozen berries

Organic certification schemes are increasingly popular in Europe. Although organic production was until recently reserved for niche markets, organic products are now becoming mainstream. However, certain types of organic certifications such as 'biodynamic' ([Demeter](#) or [BDA](#)) can still be considered niche requirements.

To market frozen berries as organic in Europe, they must be grown using organic production methods according to [European legislation](#) in this respect. Growing and processing facilities must be audited by an accredited

certifier before you will be allowed to use the European Union's organic logo on your products. The same goes for the logo of the standard holder (e.g. the [Soil Association](#) in the United Kingdom, [Naturland](#) in Germany or [Agriculture Biologique](#) in France).

Be aware that the [new EU regulation on organic production](#) is expected to enter into force in 2022. The new rules will allow for mixed farming and combined conventional and organic production, provided that the two are sufficiently separated.

Sustainability certification

For an overview of the developments regarding sustainability initiatives in the European market, read our study on [Trends on the European Processed Fruit and Vegetables Market](#).

Sustainability is a broad term with many aspects and there is still no internationally recognised sustainability certification covering all of them. One of the aspects increasingly used to assess sustainability are the CO2 emission rates published for the relevant product, but it is very difficult to reliably assess those claims. However, some private certification schemes are under development. Currently, the most well-known certification schemes focus on environmental impact and ethical aspects.

Although widely recognised, the [Fair Trade](#) and [Rainforest Alliance](#) certification schemes are not used very frequently for the certification of frozen berries. Fair Trade international has developed a specific standard for [prepared and preserved fruit and vegetables](#) for small-scale producer organisations, but frozen products, including berries, are hardly ever certified as Fair Trade products.

Besides certification focused on social and ethical aspects, new certification schemes focusing on environmental protection are appearing on the European market. These include certifications based on CO2 emissions, such as [MyClimate](#) or [Carbon Footprint Certification](#). An example of a certification scheme supporting several sustainability aspects is [Planet Proof](#). Planet Proof includes several themes such as energy and climate, crop protection, biodiversity and landscape, soil fertility, clean water, packaging and waste.

Ethnic certification

The Islamic dietary laws (Halal) and the Jewish dietary laws (Kosher) impose specific dietary restrictions. If you want to focus on Jewish or Islamic ethnic niche markets, you should consider implementing [Halal](#) or [Kosher](#) certification schemes.

Tips:

- Consult the [Standards Map database](#) for information on a wide range of sustainability labels and standards.
- Check the [guidelines for imports of organic products into the European Union](#) (pdf) to familiarise yourself with the requirements of the European organic market.

2. Through what channels can you get frozen berries on the European market?

Most of the frozen berries in Europe are used by the food processing industry but the share of retail sales is increasing due to the increasing consumption of smoothies.

How is the end market segmented?

The food processing industry is Europe's largest user of frozen berries, followed by the retail and foodservice

sectors. While there is no exact data available, the food processing segment is estimated to account for roughly 70% of the European frozen berry market. It seems that most of the frozen berries are used by the jams and fruit spreads industry, although this segment is shrinking due to the decreasing consumption of sugar and thus the reduced consumption of sugar-rich products such as jams. On the other hand, retail and foodservice sales are increasing due to the increasing consumption of smoothies.

Figure 1: End market segments for frozen berries in Europe



Food processing segment

In the European food sector, the industries in which frozen berries are most commonly used include the following:

- *Jams and spreads industry* is the largest user of frozen strawberries and frozen raspberries. In the production of jams, 40% to 50% of the final product weight consists of frozen berries. However, the proportion of fruit used in jams is increasing as jam producers want to increase the fruit content and reduce the sugar level. Labels reading “low sugar” or “high fruit” are increasingly used. In addition, “no sugar added” jams are increasingly being promoted by the largest European producers.
- *Beverages industry* uses frozen berries for the production of juices and smoothies. While frozen berries are used for making smoothies at home, industrial smoothie producers more commonly use frozen berry purees. Depending on the blend, frozen berry purees are often mixed with banana puree (for a thick consistency) and with different types of fruit and vegetable juices to achieve specific flavours. During the puree production process, the berry seeds are usually removed, but in smoothies, they are preferred as they give the final product a natural look.
- *Bakery and confectionery industry* use frozen berries in the production of cakes, tartlets and other desserts. In addition, the bakery industry uses significant quantities of fruit fillings for pies, pastries and other products. Fruit fillings are commonly supplied by specialised food ingredient companies. Those companies use frozen berries to produce the fillings.
- *Dairy industry* uses berries mainly for the production of fruit yoghurts and ice creams. However, frozen berries are usually not used directly by dairy producers but as an ingredient in fruit preparations. Occasionally, berry crumbles are used as ingredients in ice creams with natural flavours.

Retail segment

Retailers sometimes buy directly from developing country exporters, but in most cases, they are supplied via intermediaries. Recently, the retail sector has become increasingly polarised, seeing a shift towards either the discount or high-level segments. Consolidation, market saturation, fierce competition and low prices are key characteristics of the European retail food market. Currently, online retail sales of frozen berries account for an insignificant share of the market but this share is expected to increase in the near future.

The leading food retail companies in Europe differ per country. The companies with the largest market shares are Schwartz Gruppe (Lidl and Kaufland brands), Carrefour, Tesco, Aldi, Edeka, Leclerc, Metro Group, Rewe Group, Auchan, Intermarché and Ahold (Delhaize, Albert Heijn and several other brands). In addition, there are several retail chains in Europe which specialise in the supply of frozen food such as [Iceland](#) (the United Kingdom) or [Picard Surgelés](#) (France).

Foodservice segment

The foodservice channel (hotels, restaurants and catering establishments) is usually supplied by specialised importers (wholesalers). The foodservice segment often requires specific packaging of frozen berries in weights ranging from 1kg to 5kg, which is different from the requirements for bulk or retail packaging. Some catering companies have specialised in the supply of frozen fruit mixtures for smoothie bars and to restaurants such as

[Projuice](#) (the United Kingdom), [Smoothie Solutions](#) (Spain) or [Juice Factory](#) (Austria).

Through what channels do frozen berries end up on the end-market?

The most important channel for frozen berries in Europe is specialised frozen fruit importers/wholesalers, some of which are also referred to as food ingredient suppliers. Although the largest user of frozen berries is the fruit processing industry, in most cases these players do not import directly but rather via specialised importers. Sometimes frozen packaged berries are sold directly to European retail chains. However, in most cases, trading companies act as intermediaries and participate in the tendering procedures of retail chains.

Figure 2: European market channels for frozen berries



Importers/wholesalers

In most cases, importers act as wholesalers. Importers/wholesalers re-sell frozen berries to either food processors or packers. Some importers are also equipped with packing equipment, and they can sell to final market segments directly.

For new suppliers, the challenge is to establish lasting relationships with well-known importers, as they usually already work with selected suppliers. Well-known importers perform audits and visit producing countries on a regular basis. Many new contacts find they must offer the same quality at lower prices than their competitors, at the start of the relationship.

The positions of the importer and food manufacturers are put under pressure by retailers. The higher demands imposed by the retail industry determine the supply chain dynamics from the top down the chain. The pressure translates into lower prices but also added value aspects in the form of “sustainable,” “natural,” “organic,” or “fair trade” products. Transparency in the supply chain is needed. To achieve this, many importers develop their own codes of conduct and build long-lasting relationships with preferred developing country suppliers.

There are many importers that specialise in frozen products. They often import a wide range of frozen products, aside from frozen berries. Some examples of large importers in the European frozen berry market include [Crops](#) (Belgium) [Greenyard Frozen](#) (Belgium), [Dirafrost](#) (member of the Austrian AGRANA group), [Binder International](#) (Germany), [Descours](#) (France) and [ARDO](#) (Belgium).

Food processors

Food processors are already regarded as a specific segment within the frozen berry market. Some companies are specialised as intermediaries between frozen berry suppliers and industrial users. Those companies specialise in the production of fruit fillings and preparations used in the bakery, yoghurt, confectionary or ice cream industry. Those fruit preparations are often made from frozen fruit as the main ingredient. Ingredients are typically customised for each client and may include sugar, gelling agents, thickeners or concentrated juice.

Fruit preparation producers usually produce a wide range of products and act as food ingredient suppliers for many food industries. Examples of food ingredient suppliers which, among other products, offer fruit preparations are [Kerry](#) (Ireland), [Döhler](#) (Germany), [FDL](#) (the United Kingdom) and [AGRANA](#) (Austria). Furthermore, several famous producers of jams and fruit spreads also offer fruit preparations. [Zentis](#) (Germany), [Zuegg](#) (Italy) and [Andros](#) (France) are a few examples of such companies.

Packing companies

Frozen berry packing companies are usually importers but also re-pack imported berries under their own brand or private label. In some cases, suppliers from developing countries pack berries directly for retailers in the

European Union. UK based firm [Nomad Foods](#) (owner of the Iglo frozen food brand), Italian [Eurofood](#) (Green Ice frozen berry fruit production), the Swedish based [Findus Group](#), Polish [Hortex Holding](#) and German [Frosta](#) are some of the largest European companies in the frozen berry retail segment. Some of the importers already mentioned, including [Crops](#) and [Ardo](#), also supply their own brands to the retail segment.

What is the most interesting channel for you?

Specialised importers seem to be the most useful contact if you aim to export frozen berries to the European market. This is specifically relevant for new suppliers, as supplying the retail segment directly is very demanding and requires considerable investments in the area of quality and logistics. Importers of frozen berries are always looking for new supplying countries as they would like to reduce their dependence on Serbia and Poland.

Importers are usually quite knowledgeable when it comes to the European market and they closely monitor developments in frozen berry producing countries. Therefore, they are your preferred contact, as they can inform you in good time about market developments and provide practical advice about exports. Normally they import other types of frozen fruit and vegetables as well, so offering other frozen products in addition to frozen berries can increase your competitiveness further.

Tips:

- Read [CBI's study on jams, jellies, purées and marmalades](#) to gain greater insight into this important frozen berry segment.
- Search the list of exhibitors of the specialised trade fair [Fi Europe](#) to find potential buyers for your frozen berries within the food ingredient segment.
- Understand the pressure from retailers for sustainable products and increase your competitiveness by investing in different certification schemes related to corporate social responsibility (CSR), organic foods or food safety. Having food safety certification is the minimum requirement if you want to tap into the retail segment.

3. What competition do you face on the European frozen berries market?

Which countries are you competing with?

The leading frozen berry suppliers to Europe are Poland and Serbia. Those two countries supply two-thirds of all frozen berries to Europe, followed by Spain. Poland specialises in the production of a wide range of frozen berries and holds a particularly strong position in the supply of frozen strawberries, and black and red currants. Serbia is more focused on the supply of frozen raspberries and frozen blackberries. Apart from the three leading supplying countries, the supply of frozen berries from Morocco, Egypt and Ukraine is also on the rise.

Chile and Mexico, holding the third and the fourth position in the global export of frozen berries, do not export significant quantities to Europe. Due to their geographical location, both countries export most of their frozen fruit to the United States, Canada and Japan. Chile is famous for its exports of frozen raspberries, while Mexico increasingly exports frozen blackberries.

Poland, the leading supplier of frozen berries to Europe

Poland is the leading producer and supplier of frozen strawberries, black and red currants and the second-ranked supplier of frozen raspberries to Europe. In 2020, Poland exported more than 150 thousand tonnes of frozen berries to Europe. Of this quantity, 41% were frozen strawberries, 23% were frozen raspberries,

16% were frozen black currants, and 8% were frozen red currants. Poland is losing market share in Europe, especially in the supply of frozen strawberries.

In Poland, berry fruit is produced on relatively large farms as compared to the rest of the competing countries. In terms of strawberry production, Poland ranks second in Europe and more than 80% of the strawberries are used for freezing. In order to increase the supply, Poland also imports significant quantities of frozen strawberries from other countries (especially from Egypt). The leading strawberry variety used for freezing is the late summer variety Senga Sengana which is characterised by its high Brix value.

The production of raspberries is characterised by the high proportion of autumn varieties (such as Polka and Polana) but also by the increasing production of summer varieties such as Glen Ample. Another characteristic is the increased use of mechanical harvesting due to high labour costs. Poland is also the largest European producer of black and red currants in Europe. The majority of berries in Poland are produced in the Lubelskie region.

Around one-third of Polish frozen berries are exported to Germany, followed by the Netherlands (10%), Belarus, Belgium, and France. The Netherlands is the fastest-growing export destination, purchasing 1.8 thousand tonnes in 2016, compared to 2.3 thousand tonnes in 2020.

Serbia, the world leader in the production and export of frozen raspberries and blackberries

Serbia increased its exports of frozen berries from 113 thousand tonnes in 2016 to 152 thousand tonnes in 2020. The leading European destination for Serbian frozen berries is Germany (a 31% export share), followed by France (14%), the United States of America (6%), and Belgium (6%). The United States of America saw the biggest increase in imports from Serbia, from 4.7 thousand tonnes in 2016 to 9.6 thousand tonnes in 2020.

Around 75% of Serbian production and export of frozen berries consist of frozen raspberries, 20% of frozen blackberries and 5% of other frozen berries. The leading raspberry variety used for freezing is Willamette, which is prized by the fruit processing industry for its intense flavour and high Brix level. The second-ranked variety is Meeker followed by several others. The leading blackberry variety is Cacak (without thorns), followed by Thornfree.

In Serbia, frozen berry production takes place mainly in the western part of the country with the highest concentration of facilities around the Municipality of Arilje. Willamette raspberries from the Arilje area, in particular, are valued by processors. Those raspberries have a protected designation of origin in Serbia. Serbia's organic frozen raspberry production has increased in recent years. Recently, Serbian producers started to increase the production area of raspberry cultivars that are intended for the export of fresh berries. At the moment, production of those cultivars is still very small and mainly intended for the domestic retail market.

Spain, increasing export of frozen strawberries

Spain is the leading exporter of fresh berries in Europe. The surplus of production is often processed into frozen fruit. Spain produces more than 350 thousand tonnes of fresh strawberries and processes/exports around 10% of this quantity. As a result, Spain is the second-largest supplier of frozen strawberries in Europe. In 2020, 35 thousand tonnes of frozen strawberries were exported. The top three European destinations for Spanish frozen strawberries are France (a 24% export share), the United Kingdom (18%) and Germany (16%).

In Spain, the majority of the strawberries are produced in the Andalusia region, with the highest concentration of producers located around the city of Huelva. Fresh strawberries are produced in greenhouses all year round with a peak in production between February and May. However, strawberry varieties used for freezing are mainly harvested between March and June as early varieties have a lower high Brix value than later varieties. Some of the Spanish companies also source significant quantities of frozen strawberries from Morocco (16 thousand tonnes in 2020).

Morocco, emerging developing country supplier

Morocco is a significant producer of both fresh and frozen berries. In terms of frozen berry fruit, frozen strawberries are the only product of which a significant amount is exported. Due to Morocco's favourable climate, the country can produce and export strawberries during Europe's winter season when the prices are higher. Still, most of the strawberries produced are used for freezing. In 2020, Morocco exported more than 78 thousand tonnes of frozen strawberries, with Spain as the leading export destination with a 30% share, followed by the Netherlands (20%), Belgium (14%), and France (13%).

Spain, the Netherlands and Belgium are the leading export destinations for Moroccan frozen strawberries because of the established investments in and partnerships with Moroccan processors. For example, the company [Frigodar](#) is a Spanish-Moroccan partnership producing more than 5000 tonnes of frozen strawberries. Other examples are the leading Dutch processor [SVZ](#), which started freezing strawberries in late 1990 and Dutch company [Messem](#), which produces frozen strawberries in Morocco for the European market. Exports to Belgium are supported through investments from Belgian company [Dirafrost](#) which has a freezing facility in Morocco.

Egypt sees sharp rise in exports of frozen strawberries to Europe

Egypt has seen the highest growth in exports of any of the developing countries. European imports of frozen strawberries from Egypt have more than trebled over the last five years. Imports increased from 18 thousand tonnes in 2016 to 77 thousand tonnes in 2020. In addition to frozen strawberries, Egypt also exports fresh strawberries.

Ukraine, the leading supplier of frozen wild blueberries

Ukraine is steadily increasing its exports of frozen berries to Europe. The leading products exported to Europe are frozen raspberries and frozen wild blueberries (*Vaccinium myrtles*). Frozen wild blueberries, in particular, are valued as an ingredient in the fruit processing industry due to their intense colour and stronger flavour compared to cultivated blueberries. The main target market for Ukrainian frozen blueberries is Poland, accounting for 50% of exports. Other important markets include Austria, Lithuania and Czech Republic.

Apart from wild blueberries, Ukrainian exporters produce several other berries. Organic production and certification are increasing every year. One of the increasingly exported berries is Aronia (chokeberry).

Tip:

- Participate in the meetings organised by the [International Raspberry Organisation](#) to monitor the development of the international frozen raspberry industry.

Which companies are you competing with?

There are many companies active in the production, processing and export of frozen berries which supply the European markets. It is not easy to identify a single company in each of the supplying countries as representative of the leading suppliers. Each company has its own strategies for exporting to the European market. Therefore, the examples given below illustrate just a few of the leading exporters as there are many other budding companies which are not mentioned in this study.

One of the common characteristics of the leading frozen berries suppliers to Europe is vertical integration. This is done either by intensifying cooperation with farmers or by expanding a company's own production areas. These activities are mainly aimed at increasing the traceability of berries which have been collected and processed. Another characteristic is the intensification of food safety control through frequent laboratory testing and food safety certification.

Poland

The number of cold store facilities in Poland that process frozen berries is estimated at more than 100. These companies are spread across the whole country, but the majority are located in eastern Poland. The concentration of frozen berry companies is particularly high in the Lublin and Masovia regions. One important example of a successful Polish company is Real.

[Real](#) is one of the largest producers of frozen berries in Poland and Europe as a whole. Continuous investments since 1990 have enabled the company to establish three freezing facilities, one cold storage facility and two units for the production of concentrated juices. Its cold store facility is one of the largest in Poland. To increase its competitiveness, the company obtained BRC certification (in order to more easily penetrate the United Kingdom market) and IFS certification (in order to more easily penetrate the German and other EU markets). To increase the quantity and range of products, Real has forged partnerships with other producers including [Quadrum Foods](#). Quadrum Foods is one of the leading Polish importers and exporters of frozen fruits and vegetables.

Other examples of frozen berry suppliers in Poland include [Dawtona](#), [VF-Concept](#), [Bimiz](#) and [Danex](#).

Serbia

The number of frozen berry exporters in Serbia is estimated at more than 150. This means that there are a great many small processing facilities. This stands in contrast to Poland where the production is dominated by large processors. Some of the smaller processors also cooperate with larger producers. Most of the berry freezing and processing facilities are located in western Serbia.

The presence of large European frozen fruit traders with cold storage and freezing capacities is increasing in Serbia. Some examples include Crops & Partners (part of the Belgian [Crops](#) network), [Mondi Lamex](#) (part of the [Lamex](#) network which is headquartered in the United Kingdom) and the company Yube (part of the Belgian subsidiary [Dirafrost](#), which is part of the Austrian Agrana group). Several important European frozen berry traders also have administrative offices in Serbia.

[Sirogojno](#) is the largest frozen berry producer and exporter in Serbia. Sirogojno has developed a large network of fruit suppliers over the years. In order to support producers, the company supplies farmers with agricultural inputs, provides training and enters into longer-term contracts to ensure stable supply. The company has obtained a few different food safety certifications in order to improve competitiveness in different European markets. Its continuous investments in quality are recognised by the European buyers. This is evidenced by the supply of frozen retail-packed private label berries directly to some of the European retailers. Aside from the production of frozen berries, the company has also developed its production of sugar-infused and freeze-dried berries.

Other examples of leading frozen berry exporters in Serbia include [Zadrugar](#), [Elixir](#), [ZA Fruit](#), [Agropartner](#) and [Frikos](#) (the last of which is producing more and more organic frozen berries).

Companies from other supplying countries

Examples of other frozen berries suppliers to Europe are:

- Spain – [Marín Giménez](#), [Bionest](#) (largest Spanish supplier of organic frozen strawberries), [La Senda](#), [Ducal Export](#), [Fruveco](#) and [Pedaneo](#).
- Morocco – Frigodar and Messem, as mentioned above. Other examples include [Raimy](#) and [Frozen Fruits International](#).
- Egypt – [Kenzy Group](#), [Alfafrost](#), [Mima Foods](#), [Verde](#), [Frosty Foods](#) and [Ajwa](#)
- Ukraine – [Atlas](#), [Galfrost](#), [Highberry](#) and [Darlissad](#).

Tip:

- Visit major European trade fairs, such as [ANUGA](#), [SIAL](#) or [Food Ingredients](#) regularly to meet your competitors.

Which products are you competing with?

The main alternatives to frozen berries are fresh berries. Many consumers (mostly erroneously) think that freezing can have an impact on the nutritional value of the fruit and reduce the quantities of some nutrients such as vitamins. Fresh fruit consumption is officially supported by European authorities such as the [European Fresh Produce Association](#) (Freshfel). The most well-known initiative is “5 a day” campaign, which advocates consuming five portions of fresh fruits and vegetables per day. The largest European fresh berry suppliers are Spain, Portugal, the Netherlands and Belgium.

Tip:

- Read the CBI study on [fresh berries](#) to understand more about the competition with fresh products.

4. What are the prices for frozen berries?

The prices of frozen berries vary by the type of berry. Wild-picked berries (such as blueberries or wild small strawberries) are the most expensive of all frozen berries. Frozen raspberries tend to be more expensive than frozen blackberries, while frozen strawberries are the cheapest. Another factor influencing the prices is the form in which they are exported. Berries sold in blocks are the cheapest, while IQF berries are the most expensive.

In addition, export prices depend on the cultivar. For example, exported Serbian frozen raspberries Willamette and Meeker are usually more expensive than Polish frozen raspberries Polka and Polana. Moreover, Polish Senga Sengana frozen strawberries are more expensive than cultivars from Morocco and Egypt. Export prices of frozen berries also depend on the season. In the seasons with low harvests, prices often increase and vice versa. Recent export price developments are as follows:

- In 2020, average Polish EXW frozen strawberry prices ranged from €1.50/kg to €1.60/kg depending on the size and class.
- The average export prices of frozen raspberries from Serbia ranged from €2.20/kg to €2.90/kg in 2020. This price increased significantly in 2021.

As the majority of frozen berries are sold to industrial users in Europe and a much smaller proportion to the retail segment, the following price breakdown is very rough and developing country suppliers can use it only to get a general idea of the IQF berry market. For example, prices of retail packed frozen strawberries usually vary between €4 and €6, depending on the packaging and the retail price of frozen raspberries is usually between €6/kg and €8/kg (with the price of organic raspberries above €10/kg). The retail price of mixed frozen berries is somewhere between price of strawberries and raspberries.

Table 1: Breakdown of retail prices for frozen berries

Steps in the export process	Type of price	Price breakdown	Example (IQF raspberries, price per kg)
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Production of fresh berries	Raw material price	15%-20%	€1
Handling, freezing and selling bulk product	FOB or EXW price	40%-50%	€2.50
Shipping	CIF price	42%-52%	€2.60
Import, handling and packing	Wholesale price (including value-added tax)	60%-70%	€3.50
Retail sales of the final packed product	Retail price	100%	€5

Tip:

- Subscribe to the [IHS Markit](#) to receive regular and timely updates on frozen berries export prices. This portal is one of the most respected market information services for food ingredients, including frozen berries.

This study was carried out on behalf of CBI by [Autentika Global](#).

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