



Exporting capsicum for health products to Europe

Europe’s population is increasingly inactive and overweight. Europeans have a growing need to manage their weight and have more joint health issues. Because *Capsicum* products can be used in both types of health products, they are good opportunities for them on the European market. European buyers are concerned about the traceability, quality and reliability of *Capsicum* from India, the world’s leading supplier. This offers more room for new producers who can comply with market access requirements.

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1 . Product description

Capsicum is a genus of plants native to South America and southern North America. The plants are now also cultivated in Asia, Europe and Africa. The five main cultivated species are listed in Table 1. This study focuses on different *Capsicum* extracts/oleoresins as well as dried *Capsicum* fruits.

The dried fruits of *Capsicum* and their extracts are used in:

- Food: main use for dried *Capsicum* (as a spice) and oleoresins (as food additive for colour and flavour)
- Health products
- Cosmetic products: limited use of *Capsicum* (mainly as extract with skin conditioning properties)

Table 1: Main cultivated *Capsicum* species

Species	Distribution	Main varieties and cultivars
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<i>C. annuum</i>	North and South America, Asia, Europe, Africa	var. <i>Cerasiform</i> : Cherry pepper var. <i>Conoides</i> : Cone pepper var. <i>Fasciculatum</i> : Cluster pepper var. <i>Grossum</i> : Bell pepper, green pepper, pimento, sweet pepper var. <i>Longum</i> : Cayenne pepper, chilli pepper, long pepper
<i>C. frutescens</i>	Most common species in India, also cultivated in South America and Africa	Tabasco pepper Piri piri Brazilian Malagueta pepper Spur pepper Goat pepper and chillies Red pepper
<i>C. chinense</i>	Central and South America	Habanero Scotch Bonnet
<i>C. baccatum</i>	South America	var. <i>Pendulum</i>
<i>C. pubescens</i>	Central and South America	Rocoto pepper

There is no clear agreement on the botanical identification of *Capsicum* species. The Plant List classifies *C. frutescens* and various other species as synonyms of *C. annuum*. This list is based on data sets from leading botanical gardens such as the Royal Botanical Gardens - Kew. Various botanists however, see these two as distinct species ([Capsicum, Amit Krishna De, 2003](#)).

You need to determine the exact source (species) of your *Capsicum*. Most of the world's commercial chillies belong to either *C. annuum* or *C. frutescens*. Only these two species are allowed in health products in Europe (see Table 2). Therefore, this study only discusses these two species.

Within these species, this factsheet focuses on *Capsicum* chili pepper varieties (see Table 1). The fruits of these plants have a high content of the active ingredient capsaicin. This compound provides the health benefits of *Capsicum*. The concentration of capsaicin can be measured as it determines the pungency (heat) of the peppers. It is measured in Scoville heat units (SHU).

If you want to enter this market, you need to determine if the capsaicin level of your *Capsicum* fruits is sufficient for your buyer. *Capsicum* fruits with a SHU of 3,000 or lower are considered non-pungent or mildly pungent. Such fruits are not used in health products as their content of capsaicin is too low. Cayenne pepper, a commonly used chili pepper, contains between 30,000 and 50,000 SHU. This pepper is considered highly pungent.

The fruits of *Capsicum* are dried and processed to create an extract, *Capsicum* oleoresin.

In European health products, *Capsicum* is mainly used for:

- Joint health and muscle pain: to reduce pain from inflammation/sore muscles
- Vascular health: maintenance of a healthy circulation
- Anti-obesity

Capsicum can be used in both food supplements and herbal medicinal products. For use in herbal medicinal products, manufacturers can only market the product as targeting muscle pain. Table 2 below gives an overview and classification for *Capsicum* uses in food supplements and herbal medicinal products.

Several European countries (or groups of countries, such as Belgium, France and Italy in the case of BELFRIT) have established positive lists of species which are allowed to be used in food supplements. You can find these in the table below. Please note that species allowed for use in food are not necessarily allowed for supplements (for example in concentrated form).

The use of species in medicine is described in Pharmacopoeia monographs. A pharmacopoeia is a reference work identifying and specifying medicines. The descriptions identifying medicines are called monographs. You can find these references in the table below.

Table 2: Use and classification of *Capsicum* in health products

	<i>Capsicum annuum</i>	<i>Capsicum frutescens</i>
Food supplements	The fruits are allowed in food supplements. They are listed in French, Italian and Belgian national positive lists. The oleoresin is listed in the Italian positive list Belgium allows all plant parts Germany allows the variety <i>C. annuum</i> var. <i>grossum</i> Italy also allows the variety <i>C. annuum</i> var. <i>longum</i>	The fruits are allowed in food supplements. They are listed in German, Italian and Belgian national positive lists. The oleoresin is listed in the Italian positive list The sapwood is listed in the Belgian positive list
	BELFRIT doesn't list <i>Capsicum</i> species.	
Herbal medicinal products	<p><i>Capsicum</i> is allowed on the European market as listed in European Pharmacopoeia monographs: #1859: <i>Capsicum</i> (fruit) #2336: <i>Capsicum</i> oleoresin, refined and standardised #2529: <i>Capsicum</i> soft extract, standardised #2337: <i>Capsicum</i> tincture, standardised</p> <p>Its use in herbal medicinal products is described in the Community Herbal Monograph on Capsicum annuum and C. frutescens fruit For more information on use of <i>Capsicum</i> see ESCOP Monographs, 2nd Edition, Supplement on Capsici fructus</p>	
Chemical Administration Service numbers include	84625-29-6: <i>Capsicum annuum</i> extracts (including tinctures and oleoresins) 84603-55-4: <i>Capsicum annuum annuum, longum</i> group, cayenne, extracts	85940-30-3: <i>Capsicum frutescens</i> extracts (including tinctures and oleoresins)
	8023-77-6: Capsaicin	

European Community Numbers include	283-403-6: <i>Capsicum annuum</i> extracts (including tinctures and oleoresins) 283-256-8: <i>Capsicum annuum annuum, longum</i> group, cayenne, extracts	288-920-0: <i>Capsicum frutescens</i> extracts (including tinctures and oleoresins)
	617-016-4: Capsaicin	
Harmonised System codes for trade in <i>Capsicum</i>	0904.2200: 'dried fruits of the genus <i>Capsicum</i> or of the genus <i>Pimenta</i> , crushed or ground' The oleoresin of <i>Capsicum</i> is traded under: 3301.9021: 'extracted oleoresins' Other extracts of <i>Capsicum</i> are traded under: 1302.19: 'other vegetable saps and extracts'	

Source: [European Chemicals Agency](#), EU Export helpdesk, European Pharmacopoeia, National Positive lists for food supplements

Tips

- If you process your *Capsicum* extracts further, you may need to use other classification codes. Search for Capsicum in the 'Search for Chemicals' [database on the website of the European Chemicals Agency](#) to find these codes.
- For more information on the food markets for *Capsicum*, see our studies on [paprika oleoresin](#) and [chillies](#) in Europe.

2 . Which market segments to target?

Food supplements

In Europe, *Capsicum annuum* and *Capsicum frutescens* fruits and oleoresin are allowed in food supplements (Table 2). *Capsicum* is commonly sold as:

- Capsules/tablets for anti-obesity and vascular health
- Creams or patches (for joint health/muscle pain)

The Italian food supplements list several properties and effects of *Capsicum* species. These include:

- Anti-obesity
- Vascular health
- Digestive health
- Antioxidant

Of these, *Capsicum* products are most commonly marketed in anti-obesity products, followed by vascular health products.

Producers of food supplements can't make medicinal claims. Examples of claims used in Europe for products include:

Joint health	Anti-obesity	Vascular health
<p>“Warms, soothes and eases creaky joints and stiff muscles.” “...to comfort muscles, joints, backs and ease neck tension.”</p>	<p>“Chilli boosts your metabolism.” “The capsicum ingredient may help normal metabolism and a healthy weight.” “Capsicum may help to maintain a normal appetite.”</p>	<p>“The herb is also recognised for supporting healthy circulation.”</p>

Tips

- Talk to health authorities with your buyers to clarify if *Capsicum* is allowed in food supplements on the Belgian, French and Italian markets, as the species is not included in the BELFRIT positive list. Also clarify how it is allowed on the German market. According to industry experts, this shouldn't be a problem as *Capsicum* health products are listed on national positive lists and are widely used in these markets.
- Discuss with your buyer whether they require food or pharmaceutical grade *Capsicum* (for use in herbal medicinal products). See our study on [buyer requirements for natural ingredients for health products](#) for more information on pharmaceutical grade.
- Don't make medicinal claims if you are targeting buyers working in the food supplements industry.

Herbal medicinal products

Capsicum is allowed as an ingredient in herbal medicinal products on the European market according to its monograph (Table 2). It can be used as fruit, oleoresin, extract and tincture. For use in these products, *Capsicum* needs to match the composition as specified in the European Pharmacopoeia for the [fruits](#) and/or [refined and standardised oleoresin](#).

The [Community herbal monograph](#) for *Capsicum* specifies the type of herbal preparations, product forms and claims that can be used on the European market. This monograph is based on a well-established use. It indicates that there is scientific evidence for its effectiveness and safety over a period of ten years. The monograph also includes information on uses, effects, potential contraindications and hazards and pharmacological properties.

The *Capsicum* monograph discusses the composition of different types of herbal preparations allowed in herbal medicinal products:

- Soft extract (ratio of herbal substance to genuine herbal preparation 4-7:1), standardised to 2.0-2.78% total capsaicinoids, extraction solvent ethanol 80%
- Soft extract (ratio of herbal substance to genuine herbal preparation 1.5-2.5:1), extraction solvent ethanol 96%
- Soft extract (ratio of herbal substance to genuine herbal preparation 11-30:1), extraction solvent propan-2-ol

The monograph also specifies in what product forms these herbal preparations can be used: medicated plaster or semi-solid dosage forms, such as creams, which are used on the skin.

Herbal medicinal products containing the herbal preparations of *Capsicum* as listed in the

monograph can contain the following claim: “*the relief of muscle pain such as low back pain*”. If you want to target this market segment, you need to comply with the legal requirements for the industry (see the section on buyer requirements below).

Tips

- See the monographs listed in Table 2 for more information on production standards, use and effects of *Capsicum*.
- Carefully consider if you can meet the high legislative and buyer requirements for herbal medicinal products. Also, consider if you can compete with current suppliers. You can only find buyers if your offer is sufficiently better than the offer of existing suppliers (in terms of price, delivery and services).

3 . What makes Europe an interesting market for *Capsicum*?

Main European importers of *Capsicum*

The 2013 European *Capsicum* oleoresin market was estimated at 2,000 tonnes. This includes all oleoresins from all *Capsicum* species, which are also used in food products.

Most *Capsicum* enters the European market as a spice, according to industry sources.

Capsicum is also grown in Europe, mainly for the fresh market. Spain is the largest European producer and also imports dried *Capsicum* to extract oleoresins.

North European countries are seen to be the main European importers of *Capsicum* oleoresin. Their imports are estimated at around a few thousand tonnes.

Tips

- Target Northern European importers with your *Capsicum*.
- If you cannot produce *Capsicum* oleoresins or extracts yourself, consider building a trade relationship with Spanish processors or set up partnerships in your country/region.
- For more statistics on *Capsicum*, check online sources such as [ITC Trademap](#) or the [Indian Spices Board](#).
- See our studies on [promising European markets for chillies](#) and [paprika oleoresin](#) for more information on the food markets for these products.

Rising obesity levels drive demand for weight loss and energy products

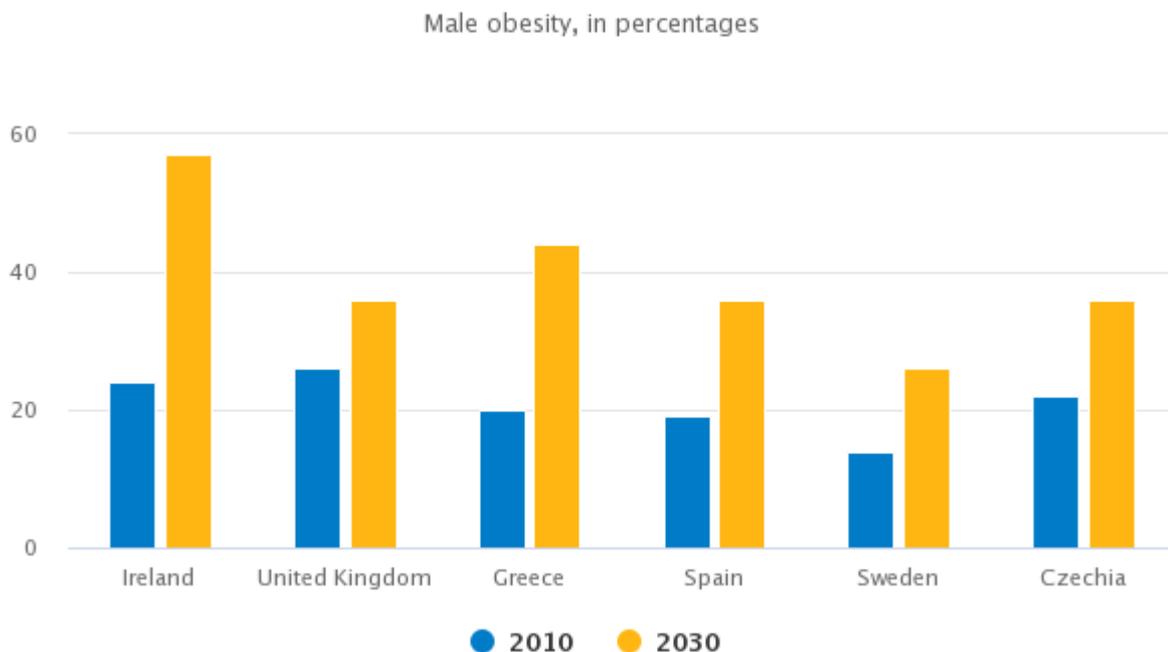
A changing consumer understanding of what it means to be healthy is driving consumption of *Capsicum*. European consumers use health products to prevent diseases and to feel good, for example by adding supplements to their regular diet. The European food supplements market is expected to [grow by 9.5% from 2015 to 2020](#).

The [World Health Organization](#) estimates that 30–70% of the European population is overweight and 10–30% is obese.

Projections by the [World Health Organization](#) indicate that the proportion of obese adults will

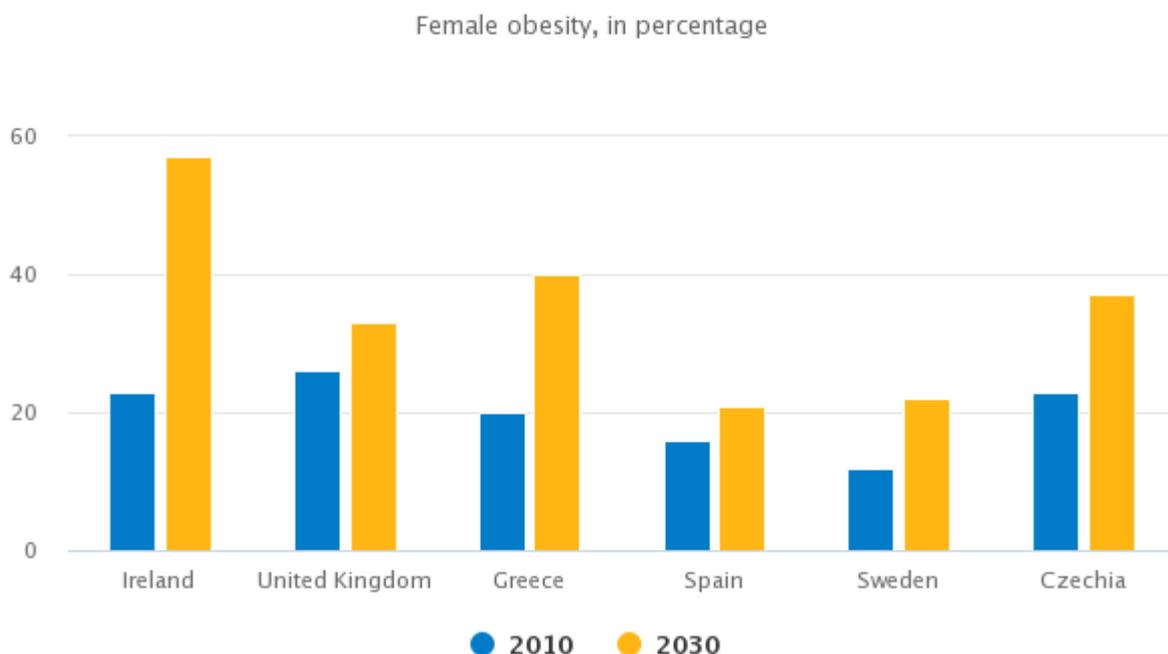
increase in most European countries by 2030. Countries with a particularly fast increase are included in Figures 1 and 2.

Figure 1: European countries with fastest growing obesity levels



Source:

Figure 2: European countries with fastest growing obesity levels



Source:

The growing rates of obesity and increasing awareness of the importance of healthy lifestyles is leading to a rising global demand for weight-loss supplements. This market is expected to [grow by 5.3% annually](#) from 2016 to 2020.

Various studies have been done on the [potential of capsaicin](#) in weight management. It has been reported to boost energy production and fat burning. Many food supplements on the market that contain capsaicin are marketed for weight loss, such as [Nordic Chili Burn](#) to help weight

management.

Food supplements are also marketed to increase energy production during exercise, such as [Capsiplex Sport](#).

Tips

- Don't make any medicinal claims for your *Capsicum* in your product documentation or marketing materials if you're targeting the market for weight management. These products are sold as food supplements, which are not allowed to carry medicinal claims.
- Look for credible literature sources on the weight management benefits of capsaicin. Use these references in your product documentation and marketing materials.
- See our study on [anti-obesity food supplements](#) for more information on this market.
- See the tips under the next chapter for online information sources to access scientific research on *Capsicum*.

Growing need for joint health products

Europe's ageing and increasingly overweight and inactive population also has a higher risk of joint health conditions. This offers opportunities for *Capsicum* based on the pain-relieving properties of its active compound capsaicin. Consumers are looking for products that work and that they can take long-term.

Capsaicin received the [highest effectiveness rating for osteoarthritis](#), according to an overview of trials listed on the website of the British Arthritis Research centre. In these trials, 22 complementary medicines were tested.

Around [22% of Europe's population](#) is reported to be under long-term treatment for muscle, bone and joint conditions. Examples of such conditions are rheumatoid arthritis and osteoarthritis. Countries with a relatively high incidence include:

- Austria (38%)
- Hungary (36%)
- Slovakia (36%)
- Spain (35%)

The global market for bone and joint health supplements is [expected to reach US\\$ 9 billion](#) (€ 8 billion) in 2017. In Europe, ingredients for bone and joint health are more frequently consumed through functional foods and beverages than food supplements.

In 2013, the [market share of joint health food supplements](#) was highest in the United Kingdom (16% of a total market of € 538 million) and Belgium (19% of € 188 million).

Tips

- Communicate how the long-term use of *Capsicum* will not negatively impact on health. Because joint health issues can't be cured, consumers use joint health products on a long-term basis. Therefore, they need to know that the products are safe. Substantiate the product safety with scientific research.
- Support claims with data from trustworthy sources such as official monographs, especially for digestive health. Much information is available online, such as through the sources listed below.

- Check databases such as [Herbmed](#) to identify research on traditional use, clinical trials on the evaluation of safety and efficacy of herbal formulations on people, and patents.
- Access scientific resources, for example through [Elsevier Science Direct](#) (not for free), [Google Scholar](#) or [Examine.com](#).
- Also, consider becoming a member of the [Society for Medicinal Plant and Natural Product Research \(GA\)](#) to access their research.
- See our study on [trends for natural ingredients for health products](#) for more trends and tips, including information on Europe's ageing population.

Growing need for vascular health products

Cardiovascular diseases [cause more than half of all deaths across Europe](#), according to the World Health Organization. What's more, 80% of premature heart disease and stroke is preventable.

Capsicum-based food supplements have a good potential in the market for products preventing vascular problems. They also have good potential in treating symptoms of minor vascular health issues. *Capsicum* is marketed for the maintenance of healthy circulation.

[Food supplements for heart health](#) have a particularly high market share in:

- The United Kingdom (12% of food supplements market)
- Belgium (7.3%)
- Germany (4.8%)
- Italy (4.2%)

Tips

- See our study on [vascular system products in Europe](#) for more information on this market.
- In your promotion materials, focus on *Capsicum*'s potential to prevent vascular diseases by maintaining a healthy blood circulation. Look for credible literature to support your product documentation and marketing materials. Don't make medicinal claims, as herbal medicinal products can't be sold with a vascular health claim.
- Consider targeting countries with a high use of food supplements for heart health.
- See the tips under "Growing need for joint health products" above for online information sources to access scientific research on *Capsicum*.

4 . What requirements must *Capsicum* comply with to be allowed on the European market?

You can only supply European *Capsicum* buyers if you comply with [buyer requirements for natural ingredients for health products](#) (see below).

Contamination with aflatoxins is the main issue for dried *Capsicum* entering Europe. Dried *Capsicum* from India is under increased scrutiny by import officials, because of the high risk of aflatoxins contamination.

From January 2016 onwards, [all dried *Capsicum* \(whole and ground\) from India](#) must be

accompanied by a health certificate to enter the European Union. This certificate needs to show that the products:

- Have been sampled
- Have been analysed for aflatoxin contamination
- Comply with the European legislation on aflatoxin contamination levels

Which specific requirements you need to comply with depends on whether your *Capsicum* is used in herbal medicinal products or in food supplements.

Requirements specifically for herbal medicinal products

You can only export your *Capsicum* to the European herbal medicinal products market if you comply with the legal [requirements for natural ingredients for health products](#). For herbal medicinal products specifically, these include:

- Relevant [European legislation](#) (Directive 2004/24/EC); simplified regime for traditional herbal medicinal products
- Detailed quality, documentation, labelling, packaging, certification and traceability standards as established in [the rules governing medicinal products in the European Union](#)
- [Marketing authorisation](#) of medicinal products to be sold in the European Union market
- [Good Agricultural and Collection Practices \(GACP\)](#) for raw plant materials
- Good Manufacturing Practices (GMP) for [extracts](#) or [active substances used as starting materials](#)
- Monographs as mentioned in the product description

Requirements specifically for food supplements

You can only export your *Capsicum* to the European food supplements market if you comply with the legal [requirements for natural ingredients for health products](#). For food supplements, these include:

- [European legislation for food supplements](#) (composition and labelling requirements)
- [General Food Law](#)
- Food Safety (see below)

Food safety requirements cover:

- [Maximum Residue Levels](#)
- [Contaminants in food](#) and [microbiological contamination of food](#) (contamination with aflatoxin or unauthorised substances are some of the issues for *Capsicum*)
- [Hygiene of Food](#) (Hazard Analysis Critical Control Point)
- [Extraction solvents](#)
- [Irradiation of food](#)
- [Traceability](#)

Tip

- For more information about aflatoxin contamination, have a look at the [Rapid Alert System for Food and Feed](#), search for results for 'chili' or *Capsicum*.

Additional requirements

Many buyers have additional quality requirements. These can go beyond legislation and standards. They are established in buyer specifications. Examples are requirements related to:

- active ingredient content

- moisture content
- contaminants
- residues

To show that you meet the specifications of buyers, you need to develop well-structured company and product information, including detailed Technical Data Sheets.

Tips

- See our [tips for doing business](#) for more information.
- See [our manual on preparing a Technical Data Sheet](#) for more information and tips.

Requirements for niche markets

Standards and requirements for social and environmental sustainability include:

- Organic production
- Verification and/or certification of sustainable production, including [FairWild](#), [FLO Fairtrade](#), [FairForLife](#), [UNCTAD BioTrade Initiative](#), [Union for Ethical BioTrade](#)
- Supplier codes of conduct
- [ISO 26000](#) on social responsibility

European food industries increasingly demand compliance with quality and food safety management. Examples include:

- [ISO 9001:2008](#) (required for health ingredients)
- [International Food Standard](#)
- [ISO 22000](#) (food safety)
- [ISO 31000](#) (risk management)

Quality requirements for *Capsicum*

European buyers want *Capsicum* fruits with a high content of capsaicin. You need to show what the capsaicin content is of your fruits or extracts.

The International Standard Organization (ISO) has set two standards to determine the total capsaicinoid content of whole or powdered chillies and chilli oleoresins:

- [ISO 7543 Part 1](#): Spectrometric method
- [ISO 7543 Part 2](#): Method using high-performance liquid chromatography

If you want to target the herbal medicine segment, you need to comply with the standards in the European Pharmacopoeia.

Tips

- Work together with a local or national university to test your *Capsicum*. They can help determine the content of capsaicin and chemical profile of your oleoresin. This needs to be included in your product documentation.
- Standardise and minimise significant variations in your product's quality. Monitor (post)harvest practices and minimise time between harvest and processing. Develop standard operating procedures and train farm and processing staff. Use incentives to ensure that they follow your specifications on harvesting and post-harvest processes.
- Always match activities such as standardisation to the requirements of your buyer.

- Keep your facilities, storage rooms and equipment clean.
- Never adulterate your product. Such practices hurt your reputation. Importers regularly analyse products for adulteration.

Labelling requirements

You need to comply with the following requirements for the labelling of your *Capsicum*:

- Set up a registration system for individual batches of your *Capsicum*, whether they are blends or not. Mark them accordingly to ensure traceability.
- Label your products in English, unless your buyer wants you to use a different language.

Your labels must include:

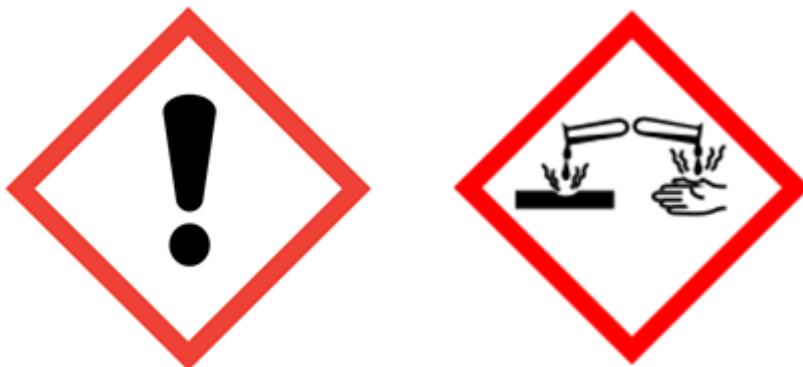
- Product name/INCI name
- Batch code
- Place of origin
- Name and address of exporter
- Date of manufacture
- Best before date
- Net weight
- Recommended storage conditions

If you supply organic *Capsicum*, your label needs to include the name/code of the inspection body and certification number.

You also need to give your buyer the following documentation:

- Technical Data Sheet (TDS) (check this example for [Capsicum oleoresin](#))
- CAS number
- Certificates of analysis (check examples of [Capsicum oleoresin](#) and [capsaicin](#))
- Safety data sheet (SDS) (see these examples of [Capsicum oleoresin](#), [Capsicum extract](#) and [capsaicin](#))
- GMO certificate (if requested)
- Certificate of origin
- Product information sheet

Capsicum extracts and oleoresin are classified as hazardous. They can cause serious damage to the eye, are harmful if swallowed and cause skin irritation. To communicate this, you need to add hazard symbols to your label if you export them. See the examples below.



You also need to include risk and safety phrases in your Safety Data Sheet, see the examples above.

These phrases show what the main risks and hazards are and how you need to prevent them.

Include for the oleoresin:

- Hazard statements H318, H335, H315
- Precautionary statements P261, P305-351-338, P310, P321, P405, P501

And for other *Capsicum* extracts:

- Risk phrases R10, R41, R36/38
- Safety phrases S2, S46

Tips

- See the European Union [Directive 2001/59/EC](#) for more information about phrases used to describe risk and safety matters.
- Check the [database of the European Chemicals Agency](#) for more information on the hazard classification for *Capsicum* extracts and capsaicin.
- See [our manual on preparing a Technical Data Sheet](#) for more information (it includes information about preparing a Safety Data Sheet).

Packaging requirements

Packaging requirement may differ per buyer and *Capsicum* product. However, there are some general requirements you have to take into account which are encompassed in standards. See the tips below.

Tips

- Always ask your buyer for their specific packaging requirements.
- Re-use or recycle packaging materials. For example, use containers of recyclable material (e.g. metal).
- Use containers of a material that does not react with components of the extract (e.g. lacquered or lined steel, stainless steel, aluminium).
- Clean and dry the containers before filling them with *Capsicum* extracts.
- Store containers in a dry, cool place to prevent quality deterioration.
- If you offer organic-certified *Capsicum*, physically separate it from *Capsicum* that is not certified.

5 . What competition do you face on the European market for *Capsicum*?

Market entry barriers

Competition for *Capsicum* is fierce, in particular from suppliers from India. Therefore, scale of production and processing is important to enter the market.

Powders vs. extracts

Market entry barriers depend on the level of processing you do.

If you produce dried *Capsicum* fruits or powder, market entry barriers are relatively low. You can also expect more new entrants at this level.

However, if you produce extracts market entry barriers increase. Especially if you produce extracts with a standardised capsaicin content or even pure capsaicin. This also means the threat of new entrants decreases substantially once you master this level of processing and you can produce an extract that complies with legal and buyer requirements.

Food supplements vs. herbal medicinal products

In addition, market entry barriers depend on the segment your *Capsicum* is used in: food (supplements) or herbal medicinal products.

Competition from new entrants is low if you already produce and supply ingredients for herbal medicinal products. Once European buyers have established a supply chain, they are less likely to switch to new suppliers. This reduces opportunities for new entrants. The costs of changing established supply contracts, and (perceived) risks of changing suppliers often do not weigh up against the reduction in supply costs. Costs can be especially high in terms of establishing a new Common Technical Document.

If you want to enter this market, you need to demonstrate to your potential buyers that your product is significantly better than their suppliers' products. Your product needs to be substantially better in quality, supply sustainability and price and all of this needs to be documented. If there is a long-term shortage on the market, buyers are also more likely to switch to new suppliers. However, for *Capsicum* such a shortage is not expected. For food supplements, you can expect more competition from new entrants. Supplier-buyer relationships are less stable than in herbal medicinal products. Costs of compliance for food supplements are relatively low. Particularly when demand is high and manufacturers of final products need to identify new sources of *Capsicum*.

Tips

- Before you set up cultivation of *Capsicum* and in particular further processing, do a thorough feasibility study. Find out if you can earn back your investment and if your financial and human resource capacities are sufficient to produce according to international buyer requirements.
- Diversify your product portfolio to reduce risks.
- If you can only cultivate on a small scale, engage with local processors to sell your fruits. You can also cooperate with other growers to share the costs of investment in processing equipment or to reach a sufficient scale to export dried *Capsicum* (powder).

What are substitute products for *Capsicum*?

Substitute products for *Capsicum* used for anti-obesity

Consumers use different types of products for weight management, both natural and synthetic. These include:

- Protein-based products: These are a strong force of competition. These can be natural or synthetic. They support lean muscle mass and create a feeling of fullness, while they have a low content of carbohydrates and fats.

- Probiotics: These are strong competitors as well. They are also used for digestive health.
- Flaxseed oil and other Omega-3 oils: These are popular because they also help support the digestive system and healthy cholesterol levels.
- Fruits: Some fruits are for example used for their laxative properties.

Substitute products for *Capsicum* used for joint health

Most alternatives to herbal food supplements for joint health are natural, non-botanical supplements. Major products are supplements that contain glucosamine and chondroitin. For examples, check the [website of Holland & Barrett](#). Since these markets are reaching maturity, companies are interested in alternative ingredients that have more potential for growth.

Other natural alternatives include:

- Botanical products, such as seaweed and pine bark extracts
- Non-botanical products, such as extracts of eggshell membranes

In joint health, efficacy and safety are key. This needs to be backed up with scientific research and clinical trials. European consumers want products with measurable benefits. *Capsicum* can stand out from other products because its use for relief of muscle pain is well established. Its use to relieve joint pains related to arthritis is also well documented, based on its capsaicin content.

Substitute products for *Capsicum* used for vascular health

There is a wide range of substitute products for *Capsicum* in herbal medicinal products and food supplements.

Capsicum can only be used in food supplements for this indication. *Capsicum* is at a competitive disadvantage to species used in herbal medicinal products, because those can make a medicinal claim. Traditional herbal medicinal products for this indication are often based on European-grown botanicals. Examples include horse chestnut seeds (*Aesculus hippocastanum*) and hawthorn leaves and flowers (*Crataegus* spp).

The main product groups in food supplements are:

- Synthetic vitamins and minerals: For example, folic acid, potassium, magnesium and vitamins C, D and E.
- Omega-3 oils or supplements: These are the most frequently used natural alternatives. Because they are often produced from fish waste, they can be offered at low prices. Botanical products on the market are rapeseed/canola oil and evening primrose oil.
- Soluble dietary fibres: These are marketed to help lower cholesterol levels and reduce weight. Examples include fruits and vegetables, nuts and pulses, and grains.
- Natural antioxidants: Consumers use these to support heart and overall health. Typical products include green tea and various fruits and vegetables.

Tips

- Do market resean [anti-obesity](#), [joint health](#) and [vascular health](#) for more information on sources of product competition.

Company competition

Competition for dried *Capsicum* fruits

According to industry sources, most *Capsicum* enters the European market as a spice. Europe's main suppliers of dried *Capsicum*, whole or ground, include:

- China
- Spain
- India
- Peru
- Thailand
- Mexico
- Turkey

Fast-growing, smaller suppliers include:

- Tunisia
- Honduras
- Morocco
- Mozambique

Tip

- See our studies on [dried chillies for the European market](#) for information and tips on competing with suppliers of dried *Capsicum* fruits and powder.

Competition for *Capsicum* oleoresins

The main suppliers of *Capsicum* oleoresins to Europe are:

- India
- Spain
- China
- Peru

India accounts for half of the estimated global *Capsicum* oleoresin production. Therefore, companies from this country will be your main source of competition. India's oleoresin and extraction industry is well developed. They can offer products at a low price, which will be difficult for you to match. However, European buyers have concerns about the quality and reliability of Indian *Capsicum*, especially in terms of pesticide residues and solvent residues (in oleoresins).

You need to develop a Unique Selling Point (USP) for your *Capsicum* to compete with Europe's main suppliers, especially India and China. You can do this with:

- High quality of your *Capsicum*, especially in terms of limiting pesticide and solvent residues
- Reliability of supplies, stable quantity and quality
- High and stable content of capsaicin of your *Capsicum*
- Certification (see tips below)

According to industry sources, companies in India are also well equipped to produce final products containing *Capsicum* or capsaicin. These products include ready-to-use *Capsicum* patches and ointments for joint conditions. It may be difficult to compete with these companies, as end products are beyond the scope of most companies in many other developing countries. To produce such end products, you need to include product development, market authorisation and marketing costs.

European processors, especially those in Spain, are strong competitors for *Capsicum* extracts as well. Examples of these processors include [Evesa](#) and [Ingredientes Naturales Seleccionados](#). It will be difficult to compete with these companies. Especially since some European processors produce a [CO₂ extract of *Capsicum*](#). This is an efficient extraction process which doesn't use solvents and results in 'clean' extracts, but also requires high investments resulting in a higher-priced ingredient.

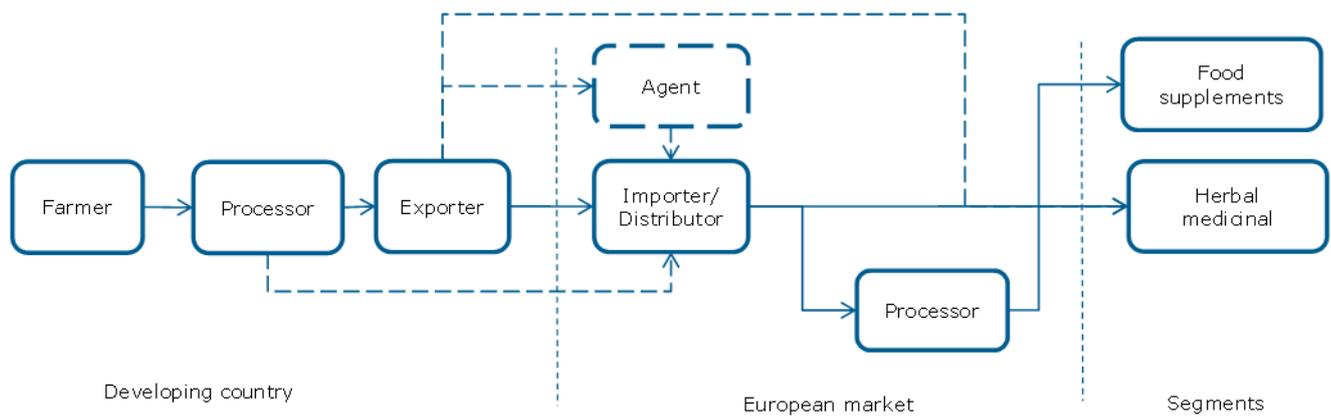
Tips

- Ensure proper harvest, post-harvest and processing and proper documentation to exploit opportunities to add value to your product. This will help you to build a Unique Selling Proposition (USP) compared to India. You can use this to show (potential) buyers that you are a reliable supplier of *Capsicum* products and can ensure a good and stable quality.
- Ensure that you can get an adequate return on your investments for quality improvements and for the different processing steps and methods you're considering. Carry out improvements on quality according to your buyer's specifications. Explore what they are willing to pay for.
- If you decide to produce *Capsicum* extracts, build trust with your buyers. Ensure traceability of your product and be open about the quality and quantity you can deliver, and at what price. Also, ensure that you only use solvents and preservatives according to buyer specifications and/or monograph.
- See our [tips for doing business](#) for more information.
- To stand out on the European market you can also certify your company according to social and environmental sustainability standards. Although the total market is small, organic certification can offer opportunities for *Capsicum* producers. Certification options are different for food supplements and herbal medicinal products.
- Do you target the food supplements market? Opportunities for certification increase if the product is positioned as a food-type product, rather than as a medicinal-type product.
- Do you target the herbal medicinal products market? These cannot use certifications on their labels. Sustainable certification will add value if you target a manufacturer that has a philosophy that calls for such certification, such as organic. Alternatively, certification can be useful if you sell to a company that considers organic an additional measure of quality assurance or fair trade labels an additional indication of compliance with Corporate Social Responsibility (CSR).
- Always verify whether your European buyer is interested in certified ingredients.
- If they are not interested, you can still help manufacturers build their story by documenting and visualising your product and company's unique value proposition. For example, that you use green or sustainable technologies in your processing or how you respect the labour rights of your staff or suppliers. Final manufacturers with a company image focused on ethical or environmental concerns can use this to market the end product in Europe.

6 . Through what channels can you get *Capsicum* onto the European market for health products?

Market channels

Figure 3: Market channels for *Capsicum* for health



Source: ProFound

Importers and distributors are your most important entry point into the European *Capsicum* market (see figure 2). They can trade in up to 500 natural ingredients, together with other (synthetic) ingredients. They focus on global sourcing, analysis and quality control, rectification, blending, product documentation and sales to processors and end-product manufacturers.

Are you a small exporter and new to the European market? You can also work with an agent to represent you in the market.

Capsicum mainly enters the European market as a dried spice according to industry sources. Production of oleoresins mainly takes place in Europe, the United States or more developed sourcing countries such as India. These countries also produce further-processed *Capsicum*, which includes:

- Standardising the capsaicin content for health products or flavour in food products
- Standardising colour intensity for food products

Europe and the United States, and India to a lesser extent, also produce final products containing *Capsicum* extracts.

Tips

- Benefit from the experience and knowledge of specialised European importers and agents instead of approaching manufacturers directly.
- To help you enter the market, consider working with an agent or representative with a good reputation. You can look for commercial agents on the website of [Internationally United Commercial Agents and Brokers \(IUCAB\)](#).
- See our studies on [market channels and segments for natural ingredients for health products](#) and [tips for finding buyers](#) for more information.
- Visit or participate in trade fairs to test if the market is open to your product, get market information and find potential buyers. The most relevant trade fairs in Europe are [SANA](#), [Health Ingredients Europe](#), [Biofach](#) (for organic products) and [Vitafoods](#).
- See our study on [oleoresins for the food industry](#) for more information.

7 . What are the end-market prices for *Capsicum*?

Prices for *Capsicum* greatly depend on the type of product you sell (dried powder or extract).

The International Trade Centre gives prices for different types of dried *Capsicum* fruits. In July 2016, the [African Bird's eye chili was priced at US\\$ 11.25 per kg](#) (around € 10). This chili is rated at between 50,000 and 175,000 Scoville heat units.

To compare, the Guntur Sannam dried chili was priced at US\$ 3.86 per kg in the United States (around € 3.44). This is a well-known chili from India, which is rated at between 35,000 and 40,000 Scoville heat units.

According to industry sources, India is the main price setter for *Capsicum* extracts on the global market. Prices average around € 18 per kg, with a peak between 2009 and 2012. In those years, the extract was priced at around € 27 per kg.

Tips

- Ensure that your price reflects the quality levels and delivery conditions.
- Base your price offers on your cost calculation. Certifications can be options to add value to your product. See our [tips for doing business](#) for more information.
- Monitor harvests in major production countries, particularly in India. This will help you anticipate price developments for your *Capsicum*. You can request such information from importers, or check the websites of the [Spices Board India](#) or the [Market Insider of the International Trade Centre](#).

Please review our [market information disclaimer](#).