

# Exporting yacón to Europe

European consumers are starting to focus more on healthy unprocessed and natural foods. The diabetic segment of the population is also growing. Yacón has potential in both regards. The largest concentrations of consumers that are interested in new and innovative products, such as yacón, are located in northwest Europe.

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## 1. Product description

Yacón (*Smallanthus sonchifolius*) is native to the Andean region and has been cultivated and consumed since pre-Incan times. It grows in temperate and subtropical regions at altitudes of 800–2800 metres above sea level. The plant is mainly cultivated in the Andes Mountains in South America but also in the Czech Republic, China, Korea, Japan, New Zealand, Russia and the United States.

Yacón syrup, powder, chips and cubes are all made from the roots of the yacón plant. The roots are washed, disinfected and peeled. For yacón syrup, the roots are pressed into juice, which is then concentrated into syrup by an evaporation process. Both the juice and the syrup are filtered in between the processing steps. For yacón powder, chips and cubes, the roots are dried and then ground into a powder.

In the Harmonised System (HS) yacón powder is part of a product group with code 1106 20 90: 'Flour, meal and powder of sago or of roots or tubers of heading 0714'.

Yacón syrup is traded under the general HS code for sweeteners and syrups: 1702.90.

## 2. What makes Europe an interesting market for yacón?

### The European market is now open for imports

In 2014, the entire European market was opened for imports of yacón. This was due to the British company [Alara](#). Alara was the first company to receive [approval](#) from the European Food Safety Authority (EFSA) for the use of yacón as food. This prevented the need for long and expensive procedures to obtain approval under the Novel Food legislation.

### European interest in yacón is slowly growing

Since the market approval for yacón, the properties and health benefits of yacón have become only slightly more well known in Europe. Compared to European markets for other alternative sweeteners, such as stevia or agave syrup, the market for yacón is not yet fully developed.

Many potential buyers still require more information on the benefits and special properties of yacón in comparison to other natural sweeteners that they already are acquainted with. They also need to gain knowledge on the use of yacón in recipes. Slowly, the application of yacón in various manners is increasing. Snacks and chocolate with yacón syrup are examples of new applications.

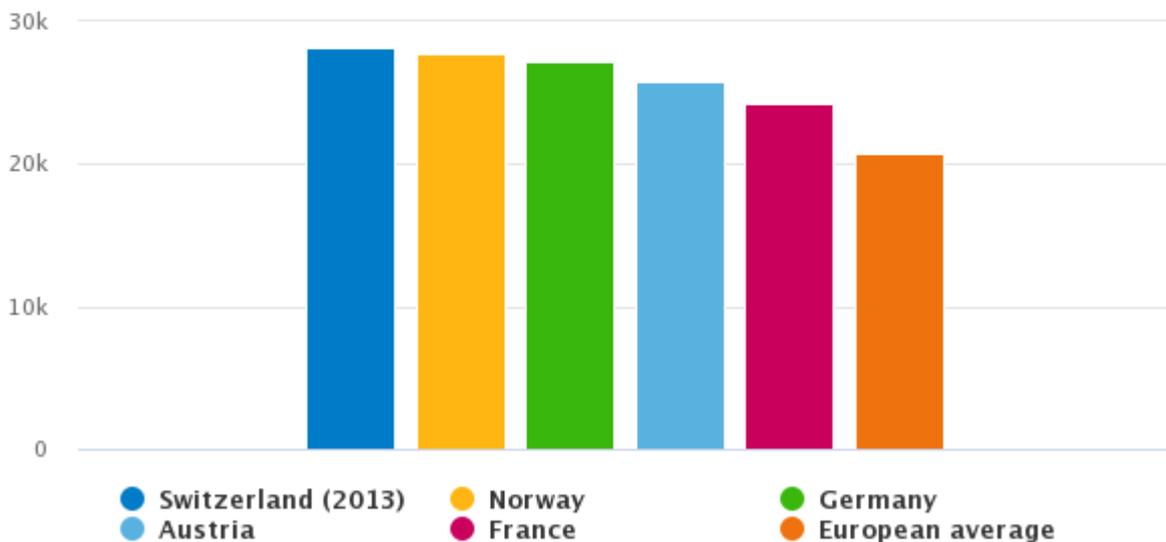
## North-western European markets are interested in new products

The largest concentrations of consumers that are interested in new and innovative, natural, healthy food products (such as yacón syrup) are located in north-western Europe. Many suppliers of new and innovative food products choose to introduce their product to the United Kingdom first. Other north-western European countries usually follow later and eastern and southern European countries are often the last ones to adopt a product.

The early adopters in north-western Europe usually have relatively high disposable incomes (as shown in Figure 1) and are able and more willing to pay a price premium for these specialty products.

**Figure 1: Countries in Europe with the highest gross disposable income and the average for Europe**

2014, in euros



Source: Eurostat, 2016

Peru is one of the leading suppliers to yacón to Europe. Most exports of Peruvian yacón (both the powder and the syrup) go to the United Kingdom (9 tonnes), Germany (7 tonnes), and Norway (2 tonnes). These exports confirm that these countries are the main consumer markets as described above.

Peruvian exports to Germany and Norway have increased most. Between January and April 2016, Peru exported 14 tonnes to Germany, which is twice the total amount imported in 2015. Peru has exported smaller amounts to Norway (2 tonnes in 2015), but these volumes increased by 106% between 2011 and 2015. Other Peruvian exports to Europe go to Austria, the Netherlands and Sweden.

### Tips:

Target north-western European markets, as these offer the most opportunities.

In your promotion materials, provide information on uses of yacón. For example, provide recipes for popular European foods or drinks with yacón.

## Demand for raw, unprocessed and organic food is strong

European consumers are starting to focus more on unprocessed and 'natural' foods. They perceive [raw food](#)

(food cooked under 45°C), organic foods and 'wholefoods' (unprocessed foods) as more natural and healthier.

The main European raw food market can be found in Germany and raw snacks are the leading raw food category. Yacón can be used as a raw and unprocessed sweetener in these snacks, an example is the [Mr. Popple Raw Chocolate sweetened with Yacón Syrup](#).

[Food bloggers and vloggers](#) have a large influence in this market, as they communicate about new, innovative healthy products to consumers.

In addition, consumers perceive organic products as healthier and 'natural' as the use of chemicals during production and processing is restricted. In 2014, the organic market in Europe increased by 7.6%. More recent figures show a growth rate of the organic market in Sweden of [40% in 2015](#). A small survey on the availability of yacón in European online shops suggests that a significant share of yacón sold on the European market has organic certification.

### **Tips:**

Profit from the trend for raw foods and wholefoods by marketing your product as natural and unrefined.

Contact food bloggers that focus on raw, organic and natural foods who could promote your product. They will be particularly interested if your product is innovative or when you have an interesting story to tell about your product. You can send them a sample to test the product and write a short blog about taste, benefits and other characteristics. See, for example, this list of [British healthy food bloggers](#).

See the website of the European Union for [more information on trade of organic products](#) in Europe.

If you would like to certify your yacón as organic, see our study on [Buyer Requirements for Honey and Sweeteners](#) for more information.

## **European consumers in search of sugar replacements**

The low calorie levels of yacón syrup (25–30% of the calories found in conventional sugar) makes it suitable for sugar replacement. Consumers are more aware than ever of the importance of healthy nutrition and many health specialists condemn sugar, since it is high in calories and has been related to many health disorders, such as obesity, heart disease and diabetes.

The negative publicity about sugar will not cause sugar to be entirely replaced. Demand for sugar will remain strong, because it is a key ingredient in many foods and beverages. However, the health trend gives rise to an alternative market for healthier low-calorie sweeteners such as yacón. Especially when developing new products, manufacturers look for natural healthy sweeteners to replace sugar.

### **Tip:**

Promote the fact that yacón syrup is low in calories and can be used as a natural sweetener.

## Increasing consumer interest in prebiotics

Consumers are increasingly interested in a healthy diet and yacón is often promoted as prebiotic as it contains fructooligosaccharides (FOS). Manufacturers add prebiotics to several food products and market them as healthy for the digestive system. Potential applications of yacón as a prebiotic healthy sweetener are yogurts (see this [example of yacón in yogurt](#)), healthy snacks and as a prebiotic supplement.

The global prebiotics market was worth USD 2.9 billion thousand in 2015 and is expected to reach USD 5.75 billion in 2020. Europe has the largest market for prebiotics, accounting for 39% of the global volume in 2013. However, European legislation for prebiotic claims restricts health claims on product labels. As effects of prebiotics vary between different individuals, a general health claim is not allowed.

As a result, the European prebiotics market is not growing as fast as was expected before the regulatory restrictions, but is still expected to grow at an annual rate of 7.7% from 2014 to 2019. Germany has the largest share of the European prebiotics market.

### Tips:

Promote the prebiotic properties of your product to your buyer, as it can be used in several food applications. However, importers and manufacturers have to be very careful with prebiotic claims as European legislation regarding prebiotic and probiotic food products is very strict.

Access the European Union Register database for [all nutrition and health claims allowed in Europe](#) and check the guidance article related to [health claims on gut and immune function](#) for prebiotics specifically.

Check the article on the NUTRAingredients website for a [clear explanation on the health claims](#) that may be used in Europe.

See our study on [Trends for Honey & Sweeteners](#) for more information.

## 3. What requirements should yacón comply with to be allowed on the European market?

Buyers in the European Union have strict requirements for yacón syrup and powder. You will only be able to successfully market your product in Europe when you comply with these requirements. See our study on [buyer requirements for honey and sweeteners](#) for a detailed analysis of these requirements.

The following topics are relevant for yacón exports to Europe:

- food safety – traceability, hygiene and control
- pesticide residues
- food safety certification
- documentation
- representative samples
- payment and delivery terms
- kosher and halal certification
- good agricultural practices (GAP)
- certification of organic production
- Fairtrade certification
- quality
- labelling

- packaging.

## Mycotoxins contamination requires special attention

A clear understanding of requirements on topics listed above is very important. Moreover, European Union legislation regarding [maximum levels for certain contaminants](#) (1831/2003) are of particular concern in the yacón market. Mycotoxins (aflatoxins and ochratoxin A) are common food-safety issues related to syrups and powders from fruits and vegetables.

Mycotoxins are produced by certain types of fungi (commonly known as moulds). Contamination with mycotoxins is mainly caused by the lack of good agricultural, collection/hygienic practices in production, storage and processing of foods.

European buyers often ask for a certificate that proves that you have a food safety management system in place. Such a food safety management system must prevent contamination by mycotoxins. See our study on [buyer requirements for honey and sweeteners](#) for food-safety requirements including certification.

### Tips:

Inform yacón farmers or collectors on good practices to minimise contamination and keep yacón roots dry before processing to comply with maximum levels for certain contaminants, such as ochratoxin A.

Read the factsheet of the European Commission on [managing food contaminants: how the European Union ensures that our food is safe](#).

## Quality

Yacón mainly consists of fructooligosaccharides (FOS). These are sugars that are found naturally in many types of plants, but are concentrated in the roots of the yacón plant. The composition of yacón is 31–89% FOS, 10–19% sucrose, 4–21% fructose, 2–6% glucose, 3–4% fibre and 2% potassium.

FOS is known as a prebiotic, serving as a fertilizer for the bacteria in the consumer's colon (for example the digestive system). Certain bacteria prefer to ferment FOS. For this reason, it is being promoted as a supplement to feed the good bacteria in the colon.

The quality of the yacón, specifically in terms of FOS, can be maintained by controlling the temperature during the production process. When the juice is boiled higher than 120°C the FOS sugars will break down into simpler sugars forms, which lower the quality of your syrup.

Buyers who are interested in using yacón as a low-calorie sweetener need proof that your yacón has a stable FOS content. Sometimes they will ask for its degree of polymerisation (DP). The DP should be between 5 and 20, and a lower DP is generally better. You can hire a laboratory to measure the DP of your yacón.

While the colour of yacón syrup is originally orange, it will turn dark green after a few seconds during the extraction process of your syrup (this process is called oxidation). As buyers prefer the orange colour, you need to avoid this process by minimising exposure to oxygen.

In addition, your yacón must be 100% pure (for example, not mixed with any other products that have similar characteristics) and 100% natural (for example, no addition of any chemicals).

## Tips:

Maintain low temperatures during processing to maintain the quality of your yacón. When the product is not exposed to temperatures exceeding 45°C, it may be called a 'raw' food.

Minimise variation in quality by following strict grading and sorting standards for raw materials (such as roots) selection. Variation in physical properties of the raw materials also means the flavour profile will vary.

You can also standardise your product by mixing roots from different crops (such as early and late crops).

Keep tools and facilities clean to prevent contamination and degradation of quality.

Only add other ingredients to your yacón powder when specifically agreed upon with your buyer and clearly mention it on the product label.

Be clear on what quality you can continue to supply over a longer period. Once you develop a quality standard, you must be able to maintain that same level of quality, also when you increase your production.

## Labelling

Use markings on your products to track individual production batches. Use the English language for labelling unless your buyer has indicated otherwise and mention the following information:

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

For organic and Fairtrade, the name and/or code of the inspection body and certification number must be included.

## Packaging

Yacón syrup is bottled in large containers of food-grade plastic or metal. Yacón powder is packaged in plastic (PE) bags that keep out moisture and prevent contamination.

An example of bulk packaging for syrup:



*Source: Yankee Containers*

An example of bulk packaging for powder:



*Source: Bulk Superfoods*

If the yacón roots are stored at room temperature, the complex sugars (FOS) will quickly transform into simpler sugars such as fructose, glucose and sucrose. You can avoid this process by storing the roots at lower temperatures. In addition, storage at low temperatures reduces the loss of roots due to rotting and general deterioration.

Yacón syrup has a maximum shelf life of 18 months.



### **Tips:**

Store the roots at a temperature lower than room temperature to maintain a high FOS content.

Clean your processing and packaging equipment before packaging your product.

Protect the cargo from moisture during loading to avoid mould.

Keep temperatures and humidity low during transportation with good ventilation conditions.

Protect the cargo from pests such as beetles and moths.

## **4. What competition will I be facing on the European yacón market?**

### **Competition with other natural sweeteners**

The competition for yacón producers mainly comes from exporters of other natural sweeteners that have similar product properties. For example, palm sugar and agave syrup are high in calories but have a low glycaemic index (GI). They compete with yacón syrup in the sweetener market segment for products with a low GI. Compared to yacón, palm sugars and agave syrup are widely known sweeteners, while yacón is relatively unknown to many consumers and manufacturers.

### **Peru dominates exports to Europe**

Peru is one of the leading suppliers of yacón to Europe and has significantly developed the production and processing of yacón-based products. Between 2011 and 2015, Peruvian exports of yacón (mainly as syrup) to Europe increased by 53% annually to 22 tonnes in 2015.

In addition, there is also supply from Colombia. If the European market grows, it may also become interesting for other yacón-producing countries such as Chile and Ecuador to invest in the promotion of yacón exports to the European market.

Europe is not a large producer of yacón but some countries are experimenting with the crop. The Czech Republic is one of the main producers of yacón in Europe. However, the production is mostly experimental and production quantities are insignificant as yet. In addition, the British company Alara has started to [experiment with the cultivation of yacón](#) in the United Kingdom. Competition from European producers is expected to remain very limited in the next five years.

### **Tips:**

Stress the unique selling point of your yacón syrup: as it is a new product that is healthier than conventional sugar and other natural sweeteners because of its low glycaemic index and low calorie levels. In addition, it does not have an aftertaste, unlike other natural sweeteners such as stevia or lucuma powder.

See our study on [competition for Honey & Sweeteners](#) for more information.

## **5. Which channels can you use to put yacón on the European**

# market?

## Market segments

### Yacón for consumers

New and innovative foods such as yacón are generally introduced to the market as final consumer products. Food and beverage manufacturers wait to see how consumers respond. Only after consumers respond positively will manufacturers invest in new product development with the respective ingredient.

Currently, most yacón found in Europe is offered to consumers as a final product. This segment requires retail packed yacón of high quality. The bigger retailers of yacón often require their suppliers to have a [British Retail Consortium](#) (BRC) or [International Food Safety](#) (IFS) certificate. BRC and IFS are certification schemes for advanced food safety management systems. Investments in implementation of these systems can cost hundreds of thousands of euros for large establishments.

### Yacón for manufacturers

European manufacturers are slowly starting to launch more products with yacón as an ingredient. Manufacturers of organic and natural products, in particular, show interest in exotic ingredients such as from developing countries. The potential uses and applications of yacón are in juices, yogurts, dairy, bakery, infant formula, cereals, biscuits, confectionery, cakes and desserts.

The application of yacón syrup in natural and luxury chocolate bars has the most potential, especially for consumers that value its sugar-free, raw properties and low glycaemic index. Currently, it is mainly used in chocolate bars such as the [Raaka Yacon Bar](#) and the [Coracao Caramel Bar](#). The main potential for yacón powder is as a [prebiotic sweetener](#) in yogurts and other similar products.

### Yacón for diabetics

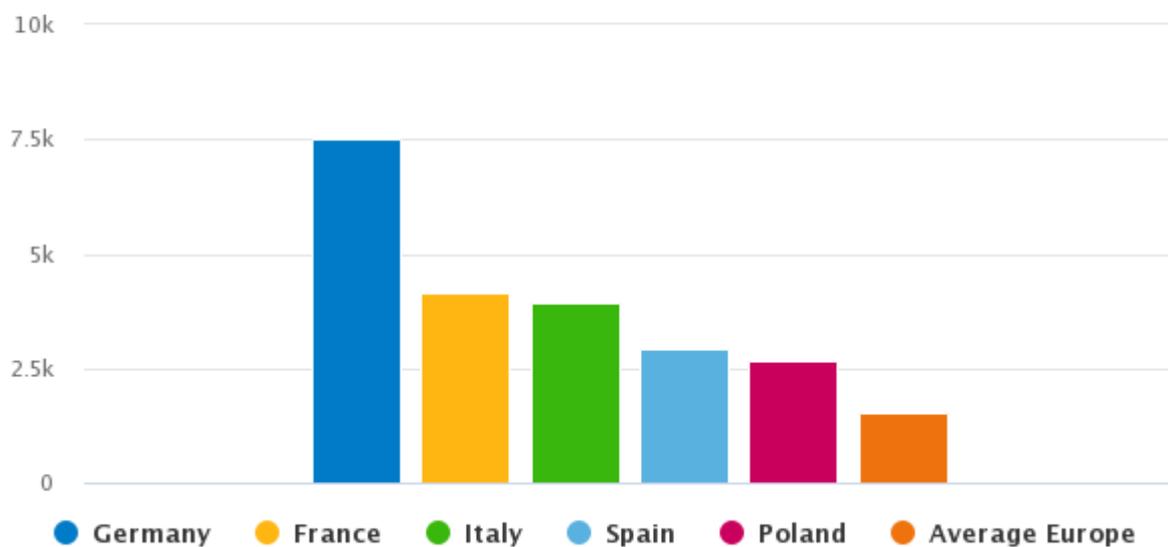
Yacón is an interesting niche product for the growing group of diabetic consumers in Europe. Its low glycaemic index (GI) and level of fructooligosaccharides (FOS) makes it a suitable alternative sweetener compared to conventional sugars.

A low GI indicates that it takes longer for the body to process the sugar and that blood sugar levels rise slowly. Additionally, according to a new health claim, food manufacturers that use FOS in their products are allowed to make health claims such as 'stabilises glycaemia' or 'regulates blood glucose'.

In 2015, 9% of the European population was diabetic. This group is expected to grow in the upcoming years to 11% of the total European population in 2040 due to growing health concerns. According to the [International Diabetes Federation](#) (IDF), the countries in Figure 2 are expected to have the largest diabetic populations in Europe until at least 2030.

**Figure 2: Countries in Europe with the highest number of diabetes in Europe (2010)**

Number of people with diabetes in age group 20–79 (in 1,000)



Source: IDF – Diabetes Atlas 2015

### Tips:

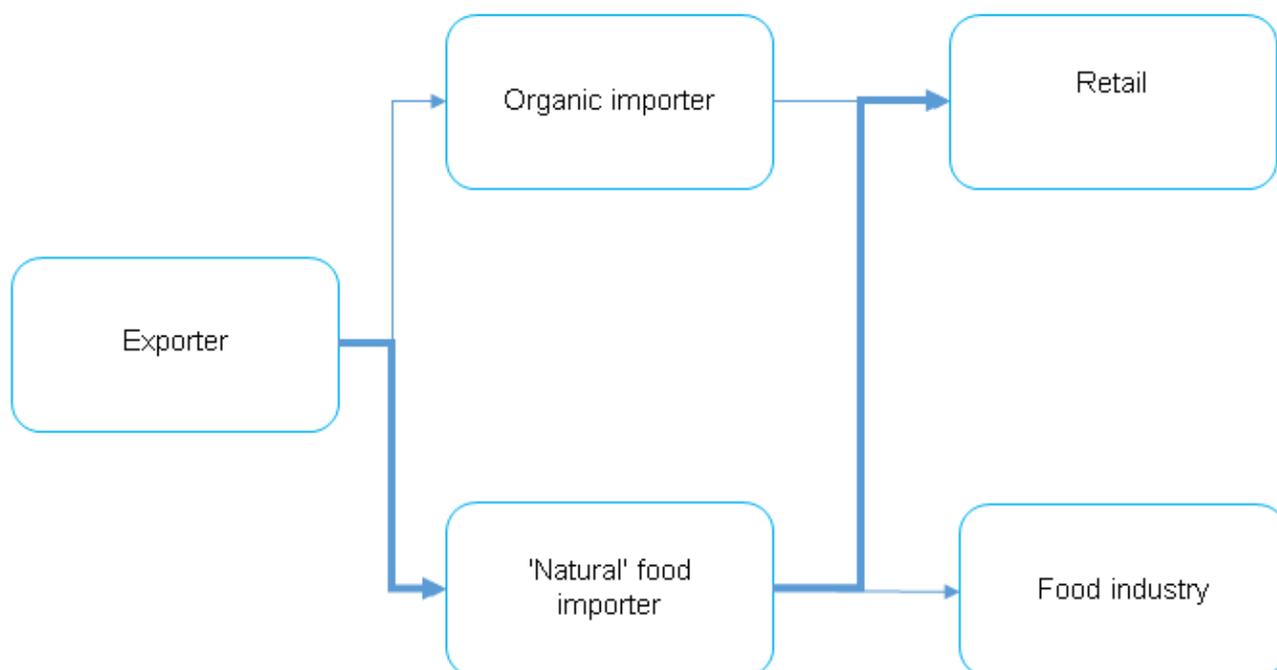
See Figure 2 for the European countries with the highest number of diabetics in 2010. These are interesting markets to promote yacón as a sweetener with a low glycaemic index (GI) and high FOS level.

Focus your promotion efforts on importers that supply directly to end users, such as consumer markets.

Discuss the opportunities for organic certification with your buyers, for which there are good opportunities in Europe. For more information, see the trends section.

## Market channels

Figure 3: main market channels for yacón



The market for yacón syrup is in development and buyers are increasingly aware of the existence of the product.

In Europe, specialised importers, such as importers focused on natural products are most interesting to yacón exporters. Conventional importers are not expected to adopt niche products such as yacón. Examples of specialised importers are:

- [Rapunzel](#) (natural)
- [Do-It](#) (organic)
- [Naturata](#) (specialised in biodynamic foods).

Yacón syrup and yacón powder are currently only sold by specialized retailers, such as health food and organic stores and web shops.

### Tips:

Link up with sector associations and join cooperatives to increase volumes, benefit from economies of scale and gain access to bigger buyers.

Do not focus on supplying directly to food manufacturers. They prefer to purchase from importers.

See our study on [market channels and segments for honey and sweeteners](#) for more information.

## 6. What are the end-market prices for yacón?

As described in the market segments section, yacón is only sold in Europe by specialised retailers. Yacón is currently mainly being sold through specialised web shops. The European end-market prices for yacón syrup range between €39.80 and €105.06 per litre and between €37.75 and €99.33 per kg for yacón powder as you can see in Table 1.

Table 1: Examples of end-market prices in European countries

Yacon syrup: Brand and details	Retailer	Price and packaging size	Price per litre
Mattisson Biologische Yacon Siroop (organic)	<a href="#">Vitatheek</a> , the Netherlands	€14.21 / 250 ml	€56.84
Nutrisslim Superfoods Bio Yacon syrup (organic)	BIOesca, Germany	€13.27 / 250 ml	€53.08
Yaconsirup - Rå - Økologisk (organic)	<a href="#">Alt Shop</a> , Norway	€35.55 / 500 ml	€71.10
Health Spark Pure Yacon Syrup	<a href="#">Holland &amp; Barrett</a> , the United Kingdom	€33.39 / 324 ml	€105.06
Nu3 Yacon bio sirop (organic)	<a href="#">nu3</a> , France	€15.99 / 250 ml	€63.96
Yaconsirap EKO (organic)	Raw Food Shop, Sweden	€12.79 / 250 ml	€51.16
Yacon powder: Brand and details	Retailer	Price and packaging	Price per kg
Yacon poeder raw biologisch	Superfoods Online, the Netherlands	€8.25 / 125 grams	€66.00
Yacon Root Powder (organic)	Sweet Yacon, the United Kingdom	€7.55 / 200 grams	€37.75
CRUBIO Poudre de Yacon (organic)	Force Ultra Nature, France	€14.50 / 200 grams	€72.50
Yacon Wurzel Pulver	Zentrum der Gesundheit, Germany	€14.90 / 150 grams	€99.33
Yacon pulver Rå - Økologisk (organic)	<a href="#">Alt Shop</a> , Norway	€22.43 / 250 grams	€89.72
Yaconpulver EKO (organic)	Raw Food Shop, Sweden	€5.55 / 100 grams	€55.50

Typical price breakdown for yacón powder in bulk for direct retail use

1. Raw material supply: 5%
2. Processing and export: 15%
3. Shipment: 5%
4. Import, packaging, processing and distribution to wholesale/retail: 30%
5. Retail (possibly via wholesaler): 40%
6. Value Added Tax: 5%

Keep in mind that the price breakdown for your product depends on your specific situation and may differ significantly.

### **Tips:**

Use organic certification to obtain a premium on your product.

Reduce fluctuations in prices of your raw materials through agreements with your suppliers. Build in price flexibility, but also set minimum and maximum prices for the raw materials. Long-term, mutually beneficial agreements can help to prevent large price fluctuations.

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