

## **Global blueberry market overview**

Globally, the cultivation of blueberries is relatively new. Demand for the product is still growing, mainly because of the healthy properties attributed to the fruit. Consequently, the price for blueberries is high, which is why many countries see a potential market in the product.

Eastern Europe, the Balkans and Peru in particular are greatly expanding their blueberry cultivation. Peru in particular has ambitions to become the largest producer of blueberries worldwide.

However, Spain sees the danger of this increasing production. In April and May, this country had an overproduction of blueberries and prices fell drastically for growers. This while supermarket prices remain high.



## *Netherlands: Low prices and lots of promotions with blueberries*

Spain and Morocco are currently on the ball with blueberries. A lot of Spanish product in particular is going through Dutch packing stations. The Moroccan season is now coming to an end. Because it has been very hot in southern Europe, Dutch importers expect that quality issues could well arise in the coming period.

Prices are at low levels, although there have been big blueberry promotions at various retailers recently. According to Dutch importers, this led to some unexpected requests last week, given the time when there is normally more than enough product on the market. Currently, there is a lot of Spanish product on the market and prices are under pressure.

From mid-June it is expected that there will be a gap in supply, which will cause demand and prices to rise and Northern European production to jump well into the gap. For now, the Dutch crop looks good, the last blossom is on the plant and setting has gone well. On rumours of frost damage to Polish berries, Dutch fruit traders laconically respond that they have heard this more often before the start of the season.





## Spanish blueberries: growers angry over high supermarket prices

Spain: 800% price difference between grower and supermarket

It was a difficult year for Spanish production. Prices for the Spanish product were historically low in the months of April and May due to overproduction and therefore with prices that did not cover the cost of cultivation. This situation had been feared for some time: blueberry cultivation has grown too fast in Huelva, Spain. In addition, prices are being pushed down by the rise of production from Morocco and Portugal, especially the influx of Moroccan blueberries on the European market has contributed to this.

There are also protests from growers because their produce is being bought for €2 per kilo for supermarkets who then sell it for €19 per kilo on the shelf. Many growers plan to switch to other products, probably especially strawberries. Other growers are necessarily putting their orchards on sale.

## Which berry is the most sustainable?

### ***No better berry than the Dutch berry***

Whether blueberries are sustainable depends on where they come from. And how they are grown. Kirsten Palland of Milieu Centraal explains: "Dutch berries from open ground as they are in the shops today are sustainable. Berries from Spain, Poland, France and Morocco are slightly less sustainable. They come to the Netherlands by truck or boat, but that transport is not so environmentally harmful; it costs relatively little fuel per kilo. So you can also buy those just fine."

### ***Frozen is sustainable***

Berries that come by plane are better not to buy. "You shouldn't wing them" says Kirsten Palland. In autumn (From October to January), blueberries come from Argentina, Chile or New Zealand. These come by plane: not sustainable at all. At Christmas, it is better to eat frozen blueberries, which are just as sustainable as the fresh berry and just as healthy.

### ***Plastic containers***

A disadvantage of blueberries is the packaging: they are usually in plastic containers. "Those plastic containers the blueberry is sold in have a function, says Kirsten Palland of information organisation Milieu Centraal. "Soft fruit like the blueberry is fragile. If you bruise them, they won't last as long and you can soon throw them away. And throwing away berries that's a real waste."



## **BLUEBERRIES: sustainable or not?**

*Ever since the word 'superfood' was invented, blueberries have been a staple on breakfast tables. How does this fragile fruit score in environmental terms?*

We get blueberries by boat or truck from Spain, Portugal, Morocco, Poland and, in summer, from the open ground in Holland. In winter, they come from further afield: New Zealand, Chile and Argentina. Those berries have the biggest environmental impact because they are flown in. Milieu Centraal gives them score E: 'avoid' in the fruit and vegetable calendar. But even berries from the other countries do not score higher than a C: 'second choice'. This is because the yield per hectare is relatively low. For apples, the yield for the same piece of land is five times higher. Plastic packaging is also relatively environmentally harmful. Although we separate plastic, that remains a minus point.

*(Continued on next page)*

### ***Superfood?***

The blueberry is not an exceptional fruit. Its vitamin C content (12 mg per 100 grams) is many times lower than, say, 100 grams of peppers (150 mg) or strawberries (60 mg). So the term 'superfood' is mainly a marketing trick. On the contrary, it is healthy to eat as many different kinds of fruit and vegetables as possible.



*Picking blueberries is often done by hand.*



*With machines, the quality gets worse.*

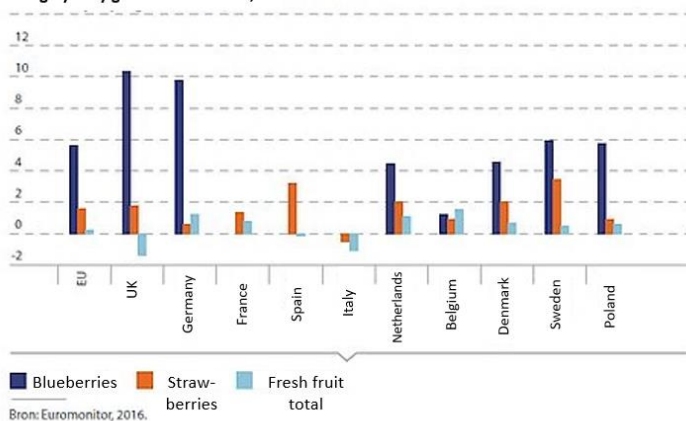


*Vaccinium corymbosum*

The nutritional value of 100 grams of blueberries compared with that of 100 grams of apple:

	Blueberries	Apple
Energy value	230 kJ	299 kJ
Carbohydrates	11 g	11,8 g
Protein	1 g	0,4 g
Fat	0,37 g	0,2 g
Vitamin C	13 mg	10 mg
Vitamin B1	0,03 mg	0,02 mg
Vitamin B2	0,06 mg	0,01 mg
Calcium	6,21 mg	4 mg
Iron	0,17 mg	0,2 mg

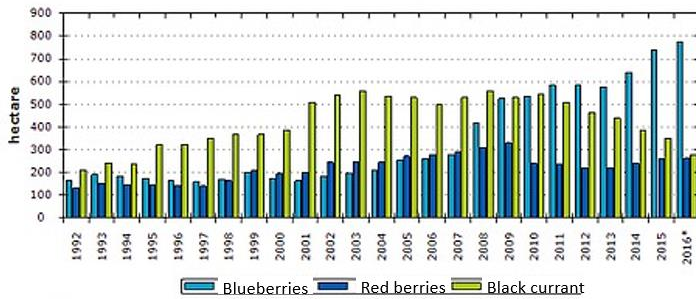
Average yearly growth 2010-2015, %



We are eating more and more blueberries in Europe.



### Fruit cultivation, area of fruit tree orchards, type of fruit



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The amount of blueberries produced in the Netherlands is on the rise.



Blueberry flower.

## Blueberries, organic (250g)



**Abel & Cole**  
Buzzing about organic for 30 years

£5.85  
(£2.34 per 100g)

Twice as many organic blueberries to sink your teeth into. Eat them fresh with handfuls, toss them through salads, in muesli, in sauces or put them in smoothie, yoghurt or frozen treats.

*Country of origin - Chile*

*Class - Minimum class 2*

### **Producer**

At this time of year, organic blueberries come from central Chile, just south of Santiago. The two farms we use, Santa Hilda and Millahue, have slightly different soil and weather conditions, allowing the farmers to take advantage of the best conditions when the weather is right. A great way to give nature its free rein and work with the elements, which is one of the main principles of organic farming.

## **Sustainable cocoa industry still a long way off: 'Even legislation is working against'**

Maarten Veeger • 12 November 2018 06:16

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Large and small cocoa and chocolate companies, NGOs and governments are working to make the cocoa industry sustainable. But the problems are so systemic that a solution is still very far away. So says Antonie Fountain one of the authors of the Cocoa Barometer. "Even legislation is working against it."

You can no longer walk into a sweet shop or supermarket or you will stumble across the labels. Almost always these revolve around sustainability of production. On the wrappers of chocolate bars, you come across stamps of UTZ Certified, Fair Trade, Rainforest Alliance, The Cocoa Plan, Slaafvrij and more.

All are voluntary initiatives that large and small chocolate makers proudly walk away with. However, critics say their effectiveness is minimal.

Indeed, the 2018 Cocoa Barometer, compiled by Voice Network in collaboration with NGOs such as Solidaridad, Hivos and Oxfam Novib, concludes that problems such as poverty, deforestation and child labour in cocoa production have only increased in recent years. "Broad-based efforts to improve livelihoods and the environment have little effect."

## *Cocoa price on the rise*

Some three-quarters of global cocoa production takes place in Côte d'Ivoire and Ghana. It is there that problems such as child labour and deforestation are most prevalent. According to the Cocoa Barometer, which monitors the sustainability of cocoa production worldwide, the income of cocoa farmers fell by 36% last year because of lower cocoa prices on the world market.

This year, those cocoa prices are on the rise again. An increase is also expected in the coming months. But farmers will not benefit from this, according to Fountain. "If the price goes down, the farmer feels it immediately. If it goes up, he doesn't feel it."

## **Higher cocoa price does not reach farmers**

*Currently, the cocoa price is just under \$2,300 per tonne. Two years ago it was \$3,000, the following year the price plummeted to \$1,300 and so this year the cocoa price has gone up again. Farmers, however, do not notice these rising prices. This is because the market at the beginning of the chain works unfairly. Fountain of the Cocoa Barometer says the global organisation of the cocoa market is all wrong. "It is a pyramid system in which the millions of small farmers are the ones who lose out," he says.*

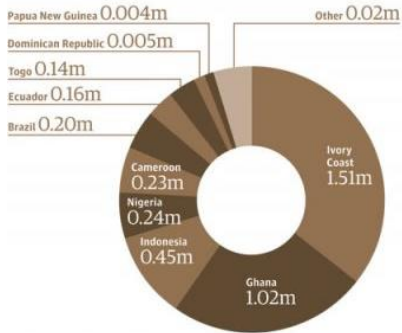
Fears that chocolate is becoming unaffordable are unjustified. Most chocolate consists of only 20 to 30 per cent cocoa. Only the very dark bars might increase in price.

Price hikes are always better than what we might otherwise face. In West Africa and Indonesia, cocoa is seen as a 'poor farmer's crop'. Farmers would prefer their children to go to school and choose another trade or crop. In Indonesia, this is what is happening.

Fountain: "Changing the system takes a very long time, but it has to work. If it doesn't succeed in changing the cocoa industry then it will never succeed in sectors with even bigger problems like coffee, sugar and palm oil."

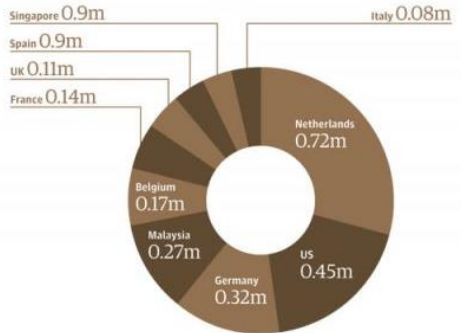
### The world's cocoa bean producers

Million tonnes, 2010/11



### The world's top cocoa importers

Million tonnes, 2010/11



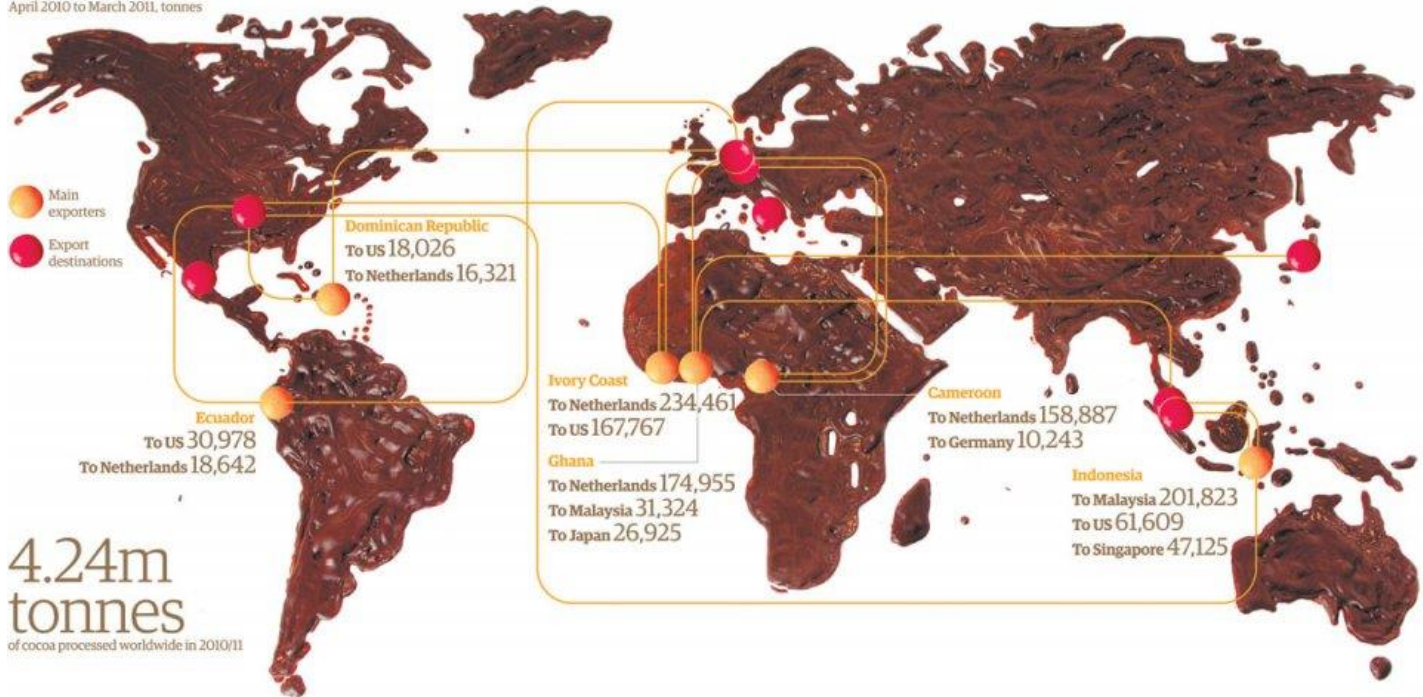
Largest cocoa producers (left) and importers (right).



Fruit on the cacao tree.

### Major trade flows of cocoa beans

April 2010 to March 2011, tonnes



**4.24m tonnes**  
of cocoa processed worldwide in 2010/11







1

### Harvesting

Cacao fruits are cut from the tree with a machete



2

### Fermentation

Cacao pods and pulp are taken from the fruit and are fermented



3

### Drying

The beans are dried in the sunlight



4

### Stocking

The cooperation collects the beans from its members and puts them in a warehouse



5

### Selling

Cacao is sold in a port and travels to Europe by boat



7

### Making chocolate

The ingredients for white, milk, and dark chocolate are mixed in different quantities. The result is molten chocolate or 'couverture'.



6

### Processing the beans

Cacao nibs are made from the beans by roasting them. This happens in Europe. The nibs are turned into cacao mass, some of which is made into cacao butter and the rest into cacao powder.



8

### Finishing touch

Chocolatiers and companies pour the molten chocolate in different shapes: tablets, bars, figures, pralines, ...



9

### Enjoy!



*Theobroma cacao*

## Cocoa and the environment

By far the biggest environmental impact of cocoa is in its production. The right conditions for growing cocoa can be found in the tropical rainforest. In these areas, the diversity of plants and animals is very high. Growing cocoa affects the tropical rainforest, reducing biodiversity.

Growing cocoa in a so-called mixed system - shading crops amidst the existing forest - actually protects nature and biodiversity.

### ***Tackling better: cocoa farming that helps conservation***

It can also be done differently. In fact, cocoa farming can play a role in conserving nature and biodiversity. Small farms often grow cocoa in a so-called mixed system, as a shade crop amid the existing forest. There are cocoa farms that protect natural areas in this way.

Cocoa production involves cocoa beans, but also leaves waste such as pulp, shells and pulp. This can lead to pollution. Cocoa shells are usefully used in the Netherlands as biofuel for power plants and as ground cover in gardens.

Labeled cocoa is produced with care for people and the environment. With chocolate, you can look out for the following top labels: Fairtrade, UTZ, Rainforest Alliance, Organic and EKO. Some labels put more emphasis on people and work (e.g. Fairtrade), others on the environment (e.g. Rainforest Alliance). You can find a description of each hallmark in the Hallmark Guide.

Ghana and Côte d'Ivoire have taken chocolate manufacturers to task. 'How can you call yourselves sustainable when you pay our cocoa farmers so little?' This is the first time the industry has been challenged by producing countries. Evelien Veldboom spoke to both parties.

Never before have the two countries taken such a firm stand when it comes to sustainability and a fair price. Major chocolate companies in the Netherlands, including Mars, Nestlé and Tony's Chocolonely, have been trying to improve the cocoa industry for years, driven by consumers' calls for fair chocolate. Only, these efforts hardly make any difference in practice. Cocoa farmers usually - even at frontrunner Tony's Chocolonely - live below the poverty line.

In Ghana and Côte d'Ivoire, the government purchases cocoa centrally, through their own companies: Cocoa Board (Cocobod) in Ghana and Coffee and Cocoa Council (CCC) in Côte d'Ivoire. Together, these companies control more than 60 per cent of world trade. At first, these companies worked against each other, but recently they have joined forces against Western companies like Nestlé and Mars.

Cocobod and CCC were initially unclear about what percentage of the proceeds went to the government and what percentage went to the farmers, but they have now agreed that farmers will get 70 per cent of the standard price for their cocoa; about \$1820 per thousand kilos. By comparison, in the current cocoa season, an Ivorian farmer earns about \$1370 per thousand kilos of cocoa.

## **Hungry honeybees threaten both the wild bee and nature**

*They easily cover 28 square kilometres of terrain, hungry honey bees. When beekeepers place hives close to nature reserves, they know unerringly where to go. But those honey bees threaten the wild bee.*

Each time you fly the same limited circle - wild bees do not have such a large radius of action around the nest. The flowering period of the preferred plants determines the rhythm of food flights for each species.

But suddenly an army of hundreds of thousands of honeybees comes along, from hives on the edge of the nature reserve. Also looking for nectar and not very picky. Then you have no chance as a wild bee or bumblebee. Your summer stock will be gone in no time and your survival as a species will be at risk.

## Ecologists warn about disadvantages of beekeeping

Ecologists of nature reserves have enough evidence to become much more cautious about allowing beekeepers in their areas. Protecting the 357 species of wild bees (plus one native honeybee) in the Netherlands comes before the honeybee, nature organisations say. Many wild bees are already struggling due to a steady loss of habitat and the use of pesticides in agriculture.

Bee expert Biesmeijer: "Half of our endangered bees are in Limburg, which has the highest diversity of bees. It is clear that Bijenbaas, which wants to place new hives next to nature reserves, is fully committed to honey production and does not have the importance of biodiversity in mind. Otherwise, the company would not choose sites that directly threaten the wild bee. But then you shouldn't pretend on your website that you actually want to protect the bee."

Nadine Schalk, director of the Dutch Beekeepers Association, is also not happy with Bijenbaas. "Beekeeping suffers because of this. Beekeeping should not be in the hands of some commercial companies. This beekeeper has no commitment to his environment, like most beekeepers affiliated to us. Bijenbaas does not contribute to sustainability."

# de Volkskrant

Bees are doing badly and yes: that is important. Because it is because of bees and their cousins, the bumblebees, that we can eat apples and cucumbers. Bees pollinate over 70 per cent of our food crops, says the FAO, food and agriculture organisation of the United Nations. Of the 350 Dutch pollinating bee species, there is only one 'tame' honeybee. Yet honey bees are the most important, simply because there are so many of them: a honey bee colony can consist of as many as 30,000 bees. Moreover, many wild bees are only active for short periods, while honey bees fly around from early spring to late autumn.



*A hive with bees.*

Are we helping bees and the environment when we buy a jar of honey? And how environmentally friendly is honey anyway?

What would help: a ban on harmful pesticides, using less poison yourself and bee-friendly gardening (check [reddebijen.nl](http://reddebijen.nl)). But buying a jar of honey? Yes and no. Most supermarket honey is foreign honey, a mix from Eastern Europe and countries like Mexico, Argentina and China. There, cultivation and production methods are difficult to control. Antibiotics have even been found in Chinese honey: they are not allowed in the EU. Rather buy Dutch honey, says Sjef van der Steen, (bee) researcher at Plant Research International Wageningen UR. Dutch beekeepers are often hobbyists who put a lot of money, time and idealism into their bees. Without their efforts, there would be far fewer pollinators flying around.

Is a jar of honey more sustainable than a packet of sugar? Not on the face of it, says environmental consultancy Blonk Consultants. To us, honey is the same as sugar. We even use extra sugar (water) for honey production: the more, the greater the environmental impact. But sugar beet needs a lot of land, bees do not. Besides, bees pollinate: that makes honey a winner after all.

PRODUCT: Dutch honey

PRICE: from approx. € 5 per jar

AVAILABLE: beekeepers, farmers' markets, health food shops

EVALUATION: four stars



Food for bees in cereal fields has all but disappeared in the Netherlands. The focus on large-scale monocultures has eliminated food for bees. Because monocultures by definition consist of one crop, food is only available to bees here for a limited period of time - because only during flowering. Due to the large scale, there are fewer flower borders, thus fewer weed strips and wooded banks, while that is precisely where bees can find their food.

Wild bees in particular are struggling in our countryside. 'Most wild bees live in the ground. They need to be able to find enough food within a few hundred metres.' The situation is different for honey bees. They are relocated by their beekeepers to locations with flowering trees and shrubs, for example to flowering apple trees in fruit orchards. As a result, honey bees do not know the problem of local scarcity.

Society's interest in bee welfare is making things even harder for wild bees. 'There are more and more beekeepers and therefore more and more honey bees, while the total food supply for all bees is not increasing. As a result, the distribution of food among wild bees and honey bees is becoming increasingly unbalanced,' says Copijn, (beekeeper course leader). Biesmeijer (professor of biodiversity) confirms the competition for food between wild and honey bees. 'If there is enough food for all pollinators, there can be fine high numbers of honey bees. But in the Netherlands, the food supply has become limited. Then you get competition.'



# Honey production in the EU



There are about **600,000**  
beekeepers in the EU



And **17 million**  
beehives

produce



About **250,000** tonnes of  
honey each year



Bee wax



Pollen



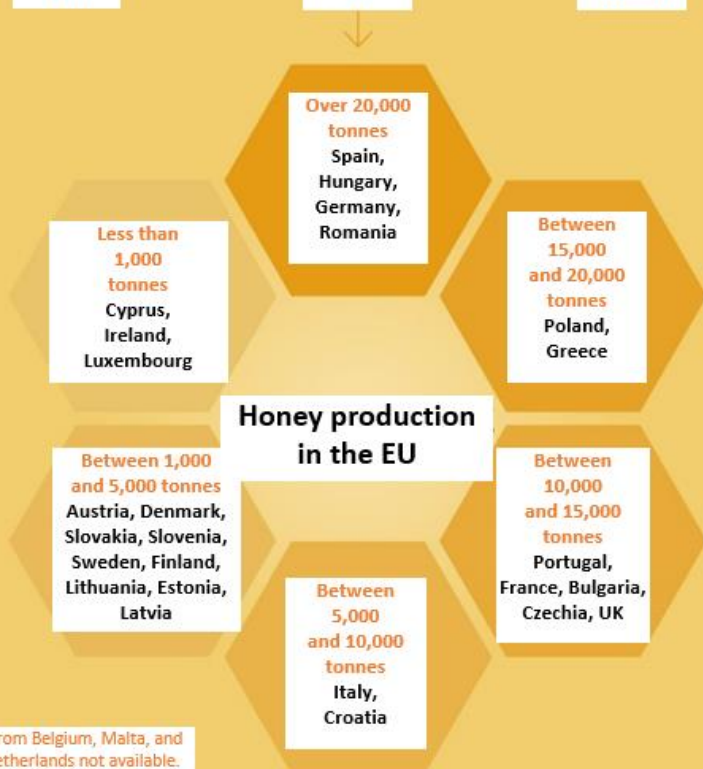
Royal jelly

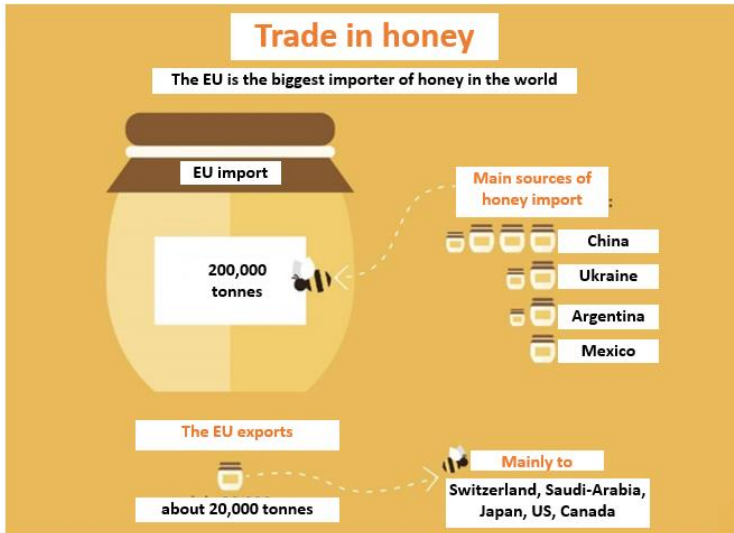


Propolis

The EU defines honey as 'a natural, sweet substance that is made by bee species *Apis mellifera* from flower nectar (...) and is processed by mixing own sweet substances, placed, hydrated, and stored in honey combs, to ripen.'

## Top 3 honey producers worldwide





Energy needed to produce sweeteners (one megajoule (MJ) = 1,000,000 joules), compared to the energy needed to produce one barrel of petrol.

## Sea level rise? More bees!



In certain parts of the world, the honey bee could counter the effects of sea level rise.

According to Fabian Esajas, a beekeeper from Suriname: "The pollination of mangrove forest by the bees increases the reproduction of these plants along the coast, breaking up the waves that are attacking strips of land. In the rest of the world, the bee is already used more for pollination of agricultural areas than for honey production. Honey is not what it is mainly about. Their agricultural sector runs on bees."



So in Suriname's mangrove forests, the bee could be used as natural protection of the land from the sea.



## Honey: sustainable?

We wonder if the organic honey we stir into our (soy) yoghurt is now so sustainable. Bees are an endangered species for a reason, aren't they? We call Nadine Schalk of the Dutch Beekeepers Association (NBV).

E E L L E

### *Honey bees versus wild bees*

'It is important to mention that the wild bee is an endangered species and that this is not true of the honey bee, which is where the honey thus comes from,' Schalk says on the phone. 'This is because it is difficult for wild bees to find a place to settle, and also there are many dangers involved that the honey bee does not have to face. For example, the honey bee does not come into contact with crops that have been sprayed with poison, and the beekeeper can fortify the bees with sugar when food is scarce.'

That honey is heartily sustainable is because honey is a by-product of an important process: 'Honey is created because we use bees to fertilise fruit and vegetables, so it is actually a kind of by-product that we harvest. And so, in theory, that is actually very sustainable,' Schalk explains. There are no hard rules for beekeepers to follow, but the responsibility for sustainably produced honey lies with them. 'You are not allowed to touch the brood nest and the environment must also be taken into account. That means the beekeeper has to consider other insects like butterflies and the wild bee.'

## **Vanilla more expensive than silver**

Vanilla is now more expensive than silver:  
€500 per kilo

At €500 for a kilo, vanilla is now the second most expensive spice after saffron. Two consecutive poor crop years in Madagascar, by far the largest supplier, have pushed up the price to great heights.

Because more than three-quarters of vanilla is grown in Madagascar, the product has always been sensitive to changes in supply and therefore price fluctuations, says Gerard Jansen, director of delicatessen wholesaler Vanilla Venture. One poorer harvest and global supply plummets. So when a poor harvest in 2016 was followed by a disastrous cyclone in 2017, the price increased more than tenfold in a few years.

Many small independents barely make a profit on vanilla ice cream, for example, because of these high prices. Large dairies notice less. 'Relatively speaking, we use so little vanilla that it's not an issue for us,' says Jan-Willem ter Avest, Campina press officer. Besides real vanilla, their vanilla products contain natural vanilla flavourings. The company also sells full ranges to supermarkets, so a price change of one ingredient falls away from the whole.

Vanilla is one of the most expensive spices in the world. For over a year, its price has fluctuated between 550 and 600 euros, which is more expensive than silver, a kilo of which now costs 457 euros.

This high vanilla price has several causes, says vanilla importer Henk de Kroon. Some 90 per cent of vanilla comes from Madagascar. Due to the island's erratic weather, the harvest is sometimes disappointing, which drives up the price, but that is not the only thing.

The tens of thousands of small farmers with vanilla plantations on Madagascar have started charging a much higher price for their product. The price they get has gone up by at least 10 times in five years, and this eventually works its way into the price we pay in the supermarket.

The 80,000 small vanilla farmers sell their wares to a handful of powerful families in Madagascar. "Thanks to smartphones, the farmers have been in touch with each other for a few years now. Together they have decided to stop selling at a low price," says vanilla importer De Kroon, who travels to the African island twice a year.

According to Kroon, the farmers were getting \$1,000 (€887) a year. Now it is \$15,000. A good thing for the poor farmers, he thinks, but the powerful families are now unwilling to buy at that high price. In short, the vanilla trade is stalling and that is driving up the price.



## **Vanilla farmers must go armed to protect their crops**

Vanilla farmers in Madagascar have to go armed to protect their crops. The sharp rise in price has made the spice hugely popular with thieves. The sharp rise in vanilla prices should be good news for farmers who grow the luxury spice. However, the opposite is true.

Almost every night, they have to go out, armed with rusty machetes and pistols, to protect their crops from thieves. Four out of five farmers are said to face these vanilla robbers. More than a thousand have already been arrested this year; many more are likely to have escaped. Dozens of theft-related killings make the terror well up among farmers.

To protect the land full of precious vanilla pods from the thieves, local municipalities are enlisting the help of the police. However, they are not always on standby. Many farmers therefore take matters into their own hands and patrol the plantations at night, carrying guns and machete. That emotions sometimes run high is evidenced by a recent attack on five suspected looters. They were dragged to the village square and killed with machetes and harpoons.

## Background: Vanilla production

### *Labour-intensive pollination process*

The vanilla plant is an orchid native to Mexico. Farmers have to check their plants every morning, as the flower blooms only one morning. At that precise moment, they have to pollinate it manually. About six hundred blossoms produce one kilo of vanilla pods. These are picked at the right time, heated and then dried. The fruits only get their aroma and flavour after they are fermented into black, sticky and pliable sticks. The whole process, up to and including preparation for export, takes almost two years.

### *Synthetic vanilla*

Vanilla is in a lot of products: chocolate, ice cream, candles, perfume. In many cases, these do not contain natural but artificial vanilla. Scientists have been making this from synthetic vanillin, the flavouring substance that provides the typical taste and smell, since the nineteenth century. This is extracted from cloves, cinnamon or wood. Not surprisingly, many companies prefer this to natural vanilla because it is about 20 times cheaper. Ice cream labelled 'vanilla' must actually obtain its flavour from vanilla pods. If not, it should say 'vanilla flavour' or 'artificial vanilla' on the packaging.



*Vanilla planifolia*



*Vanilla planifolia*



Vanilla pods on the plant.



Workers dry vanilla pods in the sun in Madagascar.



**Vanilla production mainly in the forest region of Sava**

**Land cover 1973-2014**

- Forest in 2014
- Deforestation in 00-14
- Def. in 90-00
- Def. in 73-90
- No forest
- Water



**Forest cover in 1950**

*Deforestation in Madagascar and location of vanilla cultivation.*



## Why is vanilla so expensive?

Vanilla is one of the most expensive spices in the world. Today, orchid flowers are hand-pollinated and thus fertilised all over the world. This is a labour-intensive process.



*Vanilla is hand-pollinated, as here in Madagascar.*

More than a year passes between the time of pollination and final sale. After harvesting, the pods are dipped in hot water, after which they have to dry in the sun for several days. At night, they are wrapped in cloth, which causes them to "scalding". After this, another selection takes place. Only a small proportion (10-15%) is of sufficient quality to be sold as vanilla pods. All this handwork is of course reflected in the price.

## Tattooed vanilla

Vanilla comes from an orchid, a tropical pendulum plant with pale yellow single-day flowers from which, after fertilisation, green pods grow green, succulent beans.



Originally, this orchid grew only in southern Mexico where a native small bee provided natural fertilisation. After years of obscurity, a Spanish slave discovered how to fertilise the flowers artificially. Using a bamboo stick, Edmond Albius pushed aside a saucer in the flower and pressed the style and pistil together, et voilà, fertilisation succeeded!



This black gold, meanwhile, is so precious that traders tattoo the pods with a sign of origin, so to speak, making it possible to quickly determine the origin of vanilla that turns up somewhere, making it less attractive for thieves to steal.