Beet sugar or alternative sweeteners

Which one is the more sustainable choice?

FARM TO FORK
by Pfeifer & Langen

What are alternative sweeteners?

Alternative sweeteners are types of food or food additives which can be used to replace traditional sugar. Consumers often see them as a healthier option. But are they really the better and healthier choice?

Some examples of alternative sweeteners:

- **Agave syrup**
- **Date syrup**
- **Coconut sugar**
- **Rice syrup**
- **Sugar alcohols, e.g. birch sugar (xylitol)**

Labeling of alternative sweeteners

Consumers think that products made with alternative sweeteners, such as ketchup, are healthier and contain less sugar.

Ketchup with agave syrup

The product contains **similar amounts of sugar and calories** as comparable products with beet sugar.

Ketchup with xylitol

The product contains **the food additive xylitol**, which is **also known as E number 967**, and carries the warning 'Excessive consumption may cause laxative effects'.

Source: EU Regulation No.1169/2011 on Food Information to Consumers.

Calories in comparison

Sweetener	kcal/100 g of dry weight
Beet sugar	400
Agave syrup	392
Coconut sugar	395
Date syrup	394
Rice syrup	392
Birch sugar (xylitol)	240

- The main source of energy of these sweeteners are carbohydrates or sugars.
- The calorie content of alternative sweeteners and beet sugar is almost the same (exception: xylitol).

Source: www.alnatura.de/de-de/produkte/, 17.05.2022; www.xucker.de, 17.05.2022.

Do alternative sweeteners provide health benefits?

Alternative sweeteners are often claimed to be healthier than sugar because they are supposed to contain vitamins and minerals.
These examples show the hard facts:

- A portion of agave syrup (25 g) contains less than 0.1 % of the recommended daily intake of potassium and magnesium. It contains 0.2 % of the recommended daily intake of iron.
- A portion of coconut sugar (25 g) contains just approx. 0.6 % of the recommended daily intake of potassium and vitamin C along with approx. 0.3 % of the recommended daily intake of magnesium.

When consumed in normal quantities, most alternatives do not make a relevant contribution to the intake of vitamins and minerals. They are also metabolized in the same way as conventional sugar.

Source: DGE Presseinformation: DGE betont Bedeutung wissenschaftlich fundierter Ernährungsempfehlungen, 01/2020; aid Infodienst: Zucker, Sirupe, Honig, Zuckeraustauschstoffe und Süßstoffe, 2014; https://www.lebensmittelklarheit.de/informationen/kokosbluetenzucker-viele-versprechungen-wenige-beweise, 25.06.2021; www.kokosbluetenzucker.com/naehrstoffe/, 25.06.2021; https://www.vital.de/gesunde-ernaehrung/zuckerfrei-leben/kokosbluetenzucker-als-geeigneter-zuckerersatz-122.html, 03.05.2022; https://www.fitnessletter.de/kalorien/agavendicksaft/, 17.05.2022.

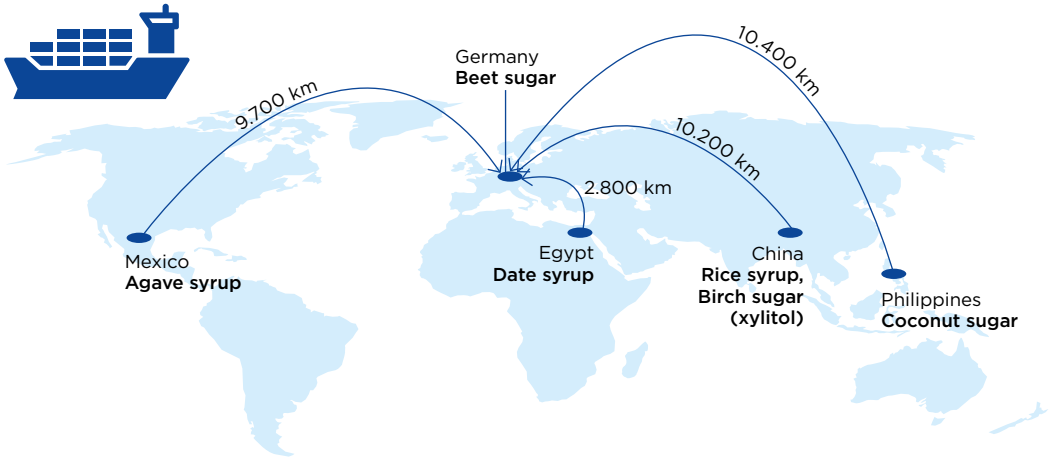
Natural or synthetic?

Like beet sugar, most alternative sweeteners have a **natural origin**.

Birch sugar (xylitol) is not really a sugar. It is a sugar alcohol, so it is classified as an **additive with an E-number**. Its use in food is subject to strict legal regulations and maximum quantities for usage are defined. Contrary to consumer expectations, it is obtained through **highly complex chemical processes**. The natural image is therefore a delusion.

Source: aid Infodienst: Zucker, Sirupe, Honig, Zuckeraustauschstoffe und Süßstoffe, 2014; Öko-Test Magazin: Zucker bleibt Zucker, 04/2021; www.verbraucherzentrale.de/wissen/lebensmittel/schlankheitsmittel-und-diaeten/kokosbluten-birkenzucker-stevia-co-kein-sinnvoller-zuckerersatz-13370, 17.05.2022.

Transport routes



- Our beet sugar comes from **Germany and Poland**.
- In contrast, most alternative sweeteners **must be transported over very long distances**. This makes their carbon footprint and environmental impact worse.

Source: aid Infodienst: Zucker, Sirupe, Honig, Zuckeraustauschstoffe und Süßstoffe, 2014.

Social and ecological sustainability of alternative sweeteners

- **Social standards** are often inadequate
- In many cases, **low wages** are paid (if the product does not have Fairtrade certification)
- Some work has to be done several metres above the ground (**health and safety**)
- Agave syrup: high demand leads to **deforestation** and loss of biodiversity
- **Large quantities of water are needed** to grow dates and rice (artificial irrigation)

Source: Dr. Bäuerlein, Brigitte: Der Zuckerkompass – So gefährlich ist Zucker wirklich,2022; www.quarks.de/gesundheit/ernaehrung/darum-ist-agavendicksaft-gar-nicht-so-gut/, 12.05.2022; http://www.oeko-fair.de/clever-konsumieren/essen-trinken/datteln2/der-dattelanbau/wasserverbrauch2/bewaesserung, 12.05.2022; https://utopia.de/ratgeber/wie-reisanbau-funktioniert-und-seine-folgen-fuer-das-klima/, 12.05.2022.

Conclusion
Beet sugar vs alternative sweeteners

A sustainable diet considers the whole value chain from farm to fork. Ecological and social criteria are assessed as well as health implications.

In contrast to consumers expectations, alternative sweeteners are not healthier or lower in calories compared to beet sugar. Overall, beet sugar is the clear winner:

- ✔ Shorter transport distances
- ✔ Socio-ethical fair conditions for farmers
- ✔ Certified as sustainable
- ✔ Better environmental and climate impact

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