Pfeifer & Langen

01 Sweet Science
Naturally Sugar

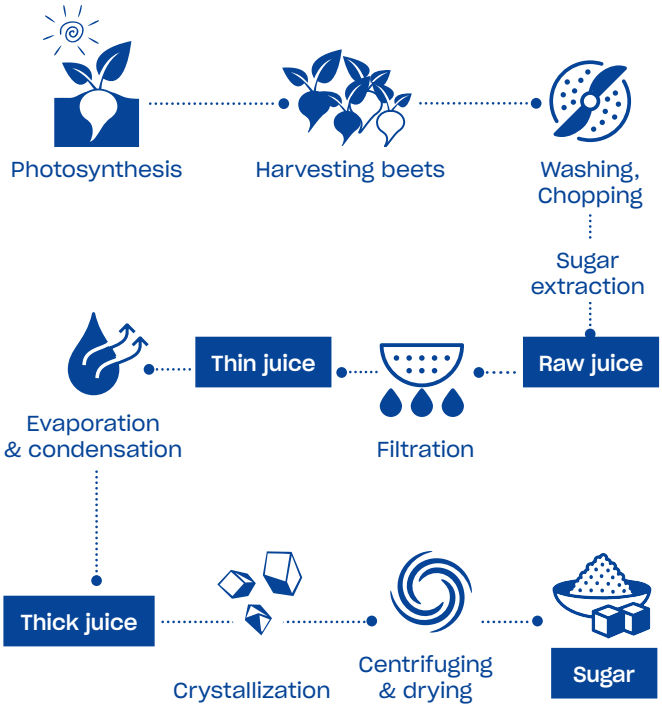
Sugar Knowledge for Nutrition Professionals

Once considered a prized luxury, sugar today is often criticized for a variety of reasons. Terms like „refined sugar“ suggest that the white, crystalline substance is artificially manufactured. Yet few people know that table sugar in Germany is actually derived from sugar beets. In terms of nutrition and digestion, beet sugar is metabolized by the human body in exactly the same way as so-called sugar alternatives: it provides energy for our cells. Sugar made from regional sugar beets is therefore a good choice for a sustainable diet.

Beet Sugar

Straight from Nature

The table sugar available in Germany is usually made from sugar beets grown locally. The sugar beet acts as a natural sugar factory, producing sucrose, a disaccharide made up of glucose and fructose. When harvested, a sugar beet contains around 18 percent sucrose. After harvesting, the beets are washed and chopped in nearby sugar factories to extract the sugar using hot water at around 70 °C. This process yields a dark raw juice, in which the chemical structure of the sucrose remains unchanged. The raw juice is then filtered to remove non-sugar substances. What remains is thin juice, which is heated and condensed in several stages to create thick juice. As more water evaporates, sugar crystals begin to form. These are separated from the remaining syrup in a centrifuge and then dried. It takes about seven beets to produce one kilogram of sugar.



Video
How Beet Sugar is Made

Did you know? Rübenzucker Despite its high level of purity, beet sugar is not actually white: it’s transparent. The crystals only appear white due to light refraction.

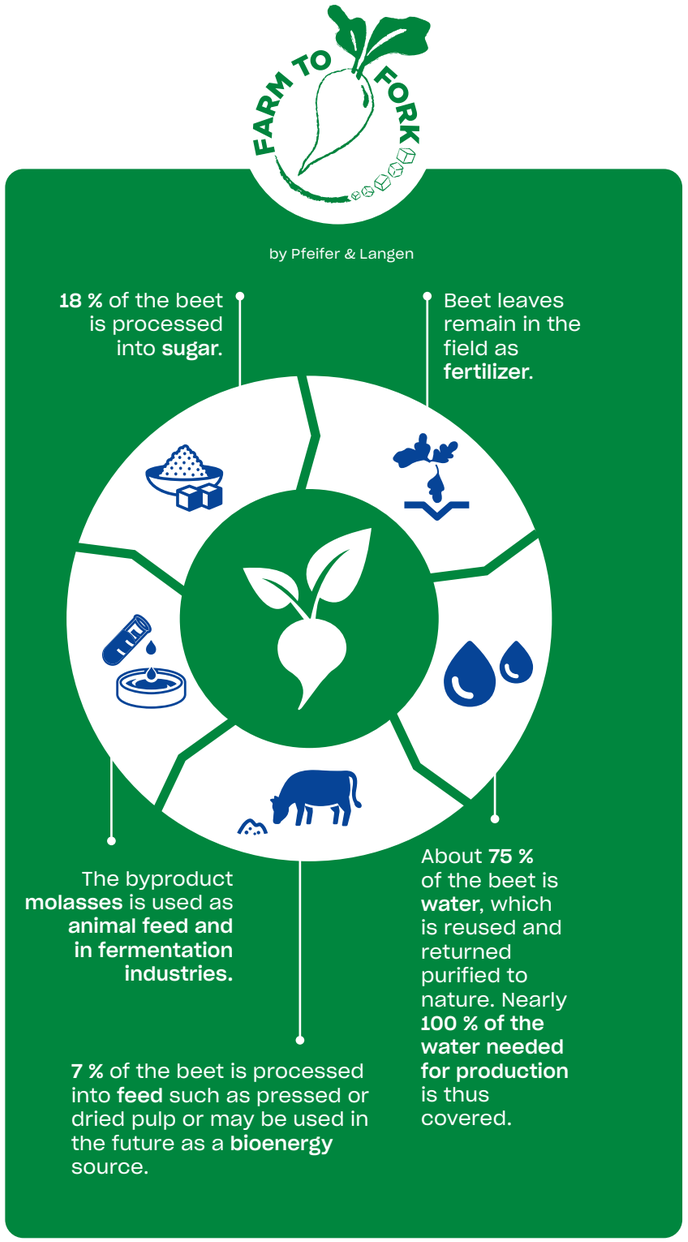
Sustainability

Nothing Goes to Waste

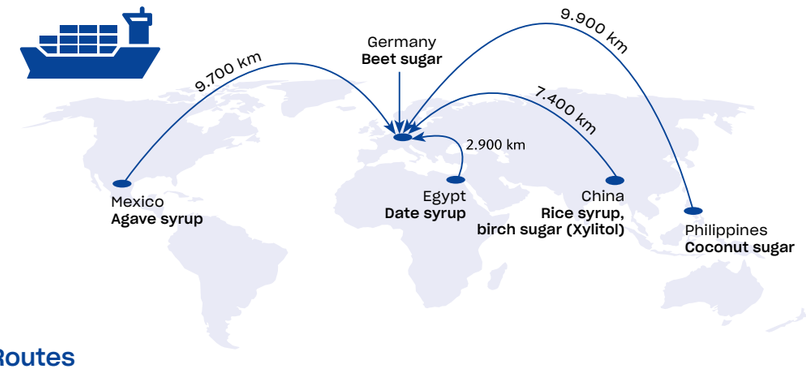
The production of sugar from sugar beets is a prime example of a perfectly functioning circular economy. Sugar beets are used in their entirety. After harvesting, the beet leaves are left in the field to act as a natural fertilizer. Since sugar beets consist of about 75 percent water, this water is first used during production and then returned to nature after being purified. This results in a positive water balance: more water is returned than was used.

Around 18 percent of the beet is processed into sugar. The byproducts from sugar production serve as raw materials for various industries. Molasses, a thick dark syrup produced during sugar extraction, is used as animal feed or in fermentation industries, for example, for yeast production. Some of the sugar beet pulp is turned into carbohydrate-rich animal feed, while the rest is earmarked for future use in bioenergy.

Roughly 5,000 contracted farmers in Germany grow sugar beets. In addition to regional sourcing, we rely on sustainable farming practices certified by REDcert2, a certification system for sustainably produced biomass from agricultural crops in the food sector



There is no more sustainable way to sweeten than with regional beet sugar. This perfectly closed-loop system significantly improves the carbon footprint.



Short Transport Routes

With beet sugar, cultivation and processing take place mostly in the same region. Transport distances are short: in Germany, sugar beets travel an average of just 50 kilometers from field to factory.

Alternative sweeteners, such as cane sugar and sugar alternatives by contrast, often have a much greater environmental impact due to being imported from tropical or subtropical regions.

From Nature
100 % natural, with no additives.

Resource-Conscious
Certified packaging made from sustainable forestry or agriculture, containing 20 % sugar beet fiber.

Zero Waste
No expiration date; unlimited shelf life if stored properly.

Regional
Sugar beets are processed directly where they grow.

For Everyone
Suitable for all diets: vegan, naturally lactose- and gluten-free, kosher and halal certified.

Sustainable
Fair and certified sustainable beet cultivation.

Video
Sugar as Part of a Sustainable Diet

01 Naturally Sugar

Health

Sugar is Still Sugar

Beet sugar is made of sucrose and provides the human body with four kilocalories of energy per gram – just like protein and other carbohydrates.

After consumption, enzymes in the small intestine split sucrose. Most fructose is metabolized in the liver and, like glucose, is used as energy source. Unlike glucose, fructose is metabolized independently of insulin and does not trigger its release. After glucose is absorbed in the small in-testine, it travels through the bloodstream to various target tissues, such as the brain, muscles, and liver, where it serves as an energy. Excess glucose is stored in the liver and muscles as glycogen. When needed, glycogen can be broken down back into glucose to provide energy. This regulation is managed by hormones, primarily insulin and glucagon. Only when glycogen stores are full does the body convert excess carbohydrates into fat, storing them in adipose tissue.

So-called sugar alternatives like agave syrup or coconut sugar are often marketed as healthier options, even though they don't significantly contribute to vitamin or mineral intake. Because they are also composed of sugars, they have similar calorie content and are metabolized the same way as sucrose.

Sweeteners	kcal/100g*
Beet sugar	400
Agave syrup	392
Coconut sugar	395
Date syrup	394
Rice syrup	392

*dry matter

Fact Sheet
Beet Sugar vs. Alternative Sweeteners

Did you know? Brown sugar is often seen as a healthier choice. But whether it's made from cane or beet, brown sugar differs from white sugar only in processing (e.g., caramelization) and taste – not in health effects.