

Life wouldn't be nearly as sweet without sugar

“Sweet salt” - Its history, how it's made and what it is



Taste treats like candy chocolate, cookies, cakes or desserts would be inconceivable without sugar. And many other foods, too, such as sauces and soups, contain this popular sweetener. So what's it all about sugar? Where does it come from and what is its true significance with respect to nutrition?

While it had already been valued by the ancient Greeks and Romans, the Christian countries of Europe had no access to sugar at all until around the 10th century. Thickened fruit juices or honey were used to sweeten foods and beverages.

Sugar was first obtained from sugarcane, which originated in the tropical and subtropical regions of Asia. It is believed that sugarcane was first cultivated 10,000 years ago on New Guinea. Around 6000 B.C., its cultivation spread to Indonesia, then to the Philippines and finally to India. Initially, though, it was not milled into crystalline sugar; instead, the sweet juice was merely pressed out from the cane. Around the first century B.C., the Indians were the first to produce solid sugar from sugarcane. The Greeks discovered sugar during Alexander the Great's campaign in India (327 B.C.), and after them the Romans.

Around 600 A.D., Persian sugar

experts in the city of Gondishapur came up with an improved method of making sugar. After being cleaned of foreign substances, the thickened sugar syrup was then left to crystallise in cone-shaped vessels. In spite of all the advances that were made, though, this sugar loaf technology was essentially retained right down to the modern era.

The Crusaders brought sugar back to Europe

During their campaigns to retake the holy city of Jerusalem, the Crusaders repeatedly saw fields of sugarcane, encountered trading caravans carrying this “sweet salt” – as they called it – and also learned something about how to produce it, to obtain crystalline sugar from the juice of sugarcane.



From this time until the conquest of South and Central America and the creation of colonies there – where the Spanish and Portuguese, in particular, established huge sugar plantations – cane sugar had to be imported to northern and western Europe via the Venetian Levant trade, in particular,

which was in the hands of the Upper Italian nobles.

But a sweet dessert, and not just sugar art, was an essential part of every banquet. It was typically the final course of both a simple or opulent meal, and served to round out the taste experience. Candied fruits, especially, as well as cakes, pastries, candies or spices dipped in sugar were very popular.

After having conquered colonies that offered favourable climatic conditions – especially in Central America – the Spanish and Portuguese initially began to cultivate sugarcane there in the 16th century.

The raw sugar was imported to Europe, where it was then processed in numerous refineries. Colonial sugar increased the supply on European markets. Prices began to decline, thus now also making sugar affordable for a broad segment of the wealthy middle classes, whose lifestyle was sugar continued to remain a luxury.

Since the 18th century at the latest – when coffee, tea and chocolate came into widespread use – we have seen a change in eating customs. Sweet desserts liberated themselves from the rigidity of a prescribed sequence of courses at a festive meal and came to be offered to guests separately along with the new hot beverages. This age also saw the birth of a middle class coffeehouse culture, which sparked a change in the importance and standing of sugar. Sugar increasingly lost its former exclusivity.

White loaf sugar from the domestic mangel-wurzel

In order to become a food that would be available to everyone, though, it was necessary to find an affordable raw material and to transform sugar making from a handicraft to an industrial production process. The key step in this development occurred in Germany. Lacking colonies of their own, access to colonial sugar was



especially difficult for the German states of the late 18th and early 19th centuries. So it was only logical for the first attempts to discover domestic substitutes to occur in this region. In 1747, Andreas cane Sigismund Marggraf succeeded for the first time in obtaining solid sugar from the mangel-wurzel beet. His student Franz Carl Achan systematically continued this research and published his findings for the first time in 1799.

The cultivation of beets and their use in the production of white loaf sugar was vigorously pursued, especially in France. But in Germany, too, mainly in the Rhineland region, numerous small sugar factories were already producing beet sugar.

Even though the sugar beet has become competitive, cost-effective source of sugar, sugar production has experienced explosive growth in other regions of the world. Over the course

of the past one hundred years, world sugar production has risen from 11.2 million tons to 135 million tons. While beet sugar production has grown from 6 to 36 million tons, cane sugar production has soared from 5.3 to 99 million tons.

From dextrose to cellulose

But what is sugar actually? In everyday usage, we mean table sugar, about which we have been reporting in this article. However chemists take a broader view of the term. Chemically speaking, there are numerous kinds of sugar, and they are all subgroups of the carbohydrates. This also includes cellulose, for example, which lends strength and stability to plants, as well as starch, the "reserve" that is also stored in numerous plants.

The carbohydrates with the simplest chemical structure are the so-called monosaccharides (simple sugar), such as the well-known dextrose (a form of glucose) or the somewhat differently structured fruit sugar (fructose). Both of these monosaccharides occur in grapes and sweet fruits, as well as in honey. These kinds of monosaccharides are the building blocks for all



other carbohydrates – such as disaccharide (double sugar), which also includes our table sugar (sucrose).

Aside from sugar, such totally different substances as lead acetate, saccharin, cyclamate or aspartame stimulate our sweet taste receptors. In fact, this can make them up to a thousand times stronger than sugar. These kinds of

substitutes and replacements can be employed to produce any number of dietetic foods. This is important, for example, when diabetes prevents the body from regulating its sugar metabolism.

Our body needs "sugar"

These kinds of substitutes can also aid in weight reduction. Because while sugar is, in principle, an indispensable source of energy for our body, if our sugar intake is too high (our sugar requirement is usually covered by other carbohydrates, such as starches, which are then reduced to sugar in the body), we store the surplus energy reserves in the form of fat.

Approximately 60 percent of our daily nutrition should be eaten in the form of carbohydrates – however primarily from such starchy foods as grain products, potatoes, rice, legumes or fruits. The advantage: These foods are reduced very slowly in the body, which prevents the resulting monosaccharides from being made available all too quickly. Our intake of pure mono- or disaccharides in the form of table sugar, honey, candy, jam, chocolate or soft drinks should be kept to a minimum, since they can cause blood sugar levels to shoot up, are not very filling and are quickly converted to fat. However it is still possible to practice healthy nutrition without having to forego sugar. It's all a matter of avoiding excessive sugar intake. Because – if the truth be told – our eating culture would be inconceivable without our sweet taste treats, and who would want to forsake them entirely??