

Beta vulgaris subsp. *vulgaris*

BEETROOT is a widely cultivated perennial (grown as an annual or biennial) with small green flowers.

It is also known as *Aka kabu* (Japanese), *Barbabetola rossa* (Italian), *Barbabetola da insalata* (Italian), *Barbabetola da orto* (Italian), Beet, *Beterraba* (Portuguese), *Beterraba de salada* (Portuguese), *Beterraba vermelha* (Portuguese), *Betrav* (Creole), *Betterave* (French), *Betterave potagère* (French), *Betterave rouge potagère* (French), *Betys* (Welsh), *Bietola a radice rossa* (Italian), *Biito* (Japanese), *Chukandar* (Hindi), *Chuwandar* (Kurdish), *Durlips* (German), Garden beet, *Hong gen tian cai* (Chinese), *Hong tou cai* (Chinese), *Kaensai* (Japanese), *Kroot* (Dutch), *Kroten* (Dutch), *Palak* (Hindi), *Patarrábia* (Portuguese), *Punajunkas* (Finnish), *Punapeet* (Estonian), *Randen* (German), *Rdezhe pesa* (Slovenian), Red beet, Red beetroot, Red fleshed beetroot, *Remolacha* (Spanish), *Remolacha colorada* (Spanish), *Remolacha de mesa* (Spanish), *Remolacha roja* (Spanish), *Rødbede* (Danish), *Rödbeta* (Swedish), *Rode biet* (Dutch), Root beet, *Rote Beete* (German), *Rote Bete* (German), *Rote Rübe* (German), *Rote Rüben* (German), *Selek adom* (Hebrew), *Shokuyou biito* (Japanese), *Shuwandar* (Persian), *Svëkla obyknovennaia* (Russian), *Svëkla stolóvaia* (Russian), *Terraba* (Portuguese), *Tian cai* (Chinese), and *Tim tsoi* (Chinese).

There are several varieties of red beetroot cultivated with varying root shapes and taste.

Warning – the plant can be poisonous (and ultimately cause death) if consumed by humans or animals in frequent large amounts. The sugar content in beetroot could make the root unsuitable for diabetic sufferers.

Vulgaris means ‘common’.

Beetroot was offered to Apollo, god of the sun, by the ancient Greeks. It is also claimed by some authorities that like the turnip (*Brassica rapa*) and the garden radish (*Raphanus sativus*) a silver replica of the beetroot could be found in the temple at Delphi.

It is thought that the plant as grown by the Romans was not only very different from that recognized today, but also that it was enjoyed more for its leaves than for its root. Red beets can still be found on the North African coast and some of the wilder parts of western European shores. A root with a passing resemblance to the cultivated red beetroot familiar today was introduced to Italy in about the 15th Century – from Germany where it began life. A yellow variety was more common then and held sway for some time before the ‘new’ red beet dominated choice as it does now (and it was only in 1587 some authorities note that a rounded root was developed (from the then more familiar carrot-like shape, *Daucus carota* var. *sativus*) which ultimately led to today’s globular form). Apparently red beetroot only reached England in the 17th Century and was rapidly accepted there.

Beetroot (the root) is the prime ingredient in the well-known Russian soup *bortsch*. It is also popular in fresh salads and pickles, and as a boiled vegetable. The leaves are edible and authorities sing praises about the taste of them when they are new and bear tiny beet roots (the latter found especially when thinning the plants early on in their growth).

Medicinally, in the 17th Century English herbalists recommended it (often in the form of a wine) for the treatment of headaches, madness, jaundice, asthma and general liver and

spleen disorders.

Varieties:

FODDER BEET is a widely cultivated perennial (grown as an annual or biennial) with small, green flowers.

It is also known as *Barbabetola da foraggio* (Italian), *Betarraga forrajera* (Spanish), *Betteraba-forrageira* (Portuguese), *Betteraba-forraginosa* (Portuguese), *Betterave fourragère* (French), Field beet, Forage beet, *Futtermübe* (German), *Lehtimangoldi* (Finnish), *Foder bede* (Danish), *Foderbeta* (Swedish), *Foderroe* (Danish), *Krmna pesa* (Slovenian), Mangel, *Rehujuurikas* (Finnish), *Remolacha forrajera* (Argentinian, Spanish), *Runkelroe* (Danish), *Runkelrübe* (German), *Selek mispo* (Hebrew), *Shiryoyou biito* (Japanese), *Si niu tian cai* (Chinese), *Si yong tian cai* (Chinese), *Söödapeet* (Estonian), Stock beet, *Svëkla kormováia* (Russian), *Voederbiet* (Dutch), White beet.

Warning – the plant can be poisonous (and ultimately cause death) if consumed by animals in frequent large amounts.

Its roots are used as cattle feed.

MANGEL-WURZEL is a variety of beet (with greenish flowers) bred for its yellowish-white root.

It is also known as Field beet, Forage beet, *Lehtimangoldi* (Finnish), Mangel beet, Mangold (English, German, Swedish), and Mangold-wurzel.

Warning – the plant can be poisonous (and ultimately cause death) if consumed by animals in frequent large amounts.

It has been cultivated in Britain since the early 19th Century.

The roots are used as cattle feed.

In the past, in Britain at least, mangel-wurzel has been used to adulterate coffee (*Coffea*). This was reported both by a Dr. Arthur Hill Hassall (1817-1894), an English chemist and one of the two commissioners officially appointed by Queen Victoria's (1819-1901) Government to carry out investigations into adulterated food and drink which led to Parliamentary legislation regarding the falsification of foodstuffs and drink. The commissioners whose appointment had been noted in an 1850 edition of *The Lancet*, the English medical journal, examined random food samples obtained in London shops.

SUGAR BEET is cultivated as an annual or biennial with greenish flowers.

It is also known as *Azúcare de remolacha* (Spanish), *Barbabetola da zucchero* (Italian), *Barbabetola zuccherina* (Italian), Beet sugar, *Betarraga azucarera* (Spanish), *Betteraba-açucareira* (Portuguese), *Betteraba-sacarina* (Portuguese), *Betterave sucrière* (French), *Chuqandar* (Urdu), *Flepa cukrová* (Czech), *Navadna pesa* (Slovenian), *Remolacha azucarera* (Argentinian, Spanish), *Rübenzucker* (German), *Satou daikon* (Japanese), *Selek sukar* (Hebrew), *Shuwandar sukari* (Arabic), *Sladkorna pesa* (Slovenian), *Sockerbeta* (Swedish), *Sokerijuurikas* (Finnish), *Sucre de betterave* (French), *Suhkrupeet* (Estonian), *Suikerbiet* (Dutch), *Sukkerbete* (Norwegian), *Sukkerroe* (Danish), Sugar, *Svëkla sakharnaia* (Russian), *Tang luo bo* (Chinese), *Tang tian cai* (Chinese), *Tang yong tian cai* (Chinese), White beet, *Zucchero di bietola* (Italian), *Zuckerrübe* (German).

Sugar beet was known to the Romans although not for its sugar content.

In 1747 a German chemist andreas Sigismund Marggraf (1709-1782) discovered that this species contained sugar. Little use of this knowledge appears to have been made until the end of that Century when a Swiss chemist, Franz Karl Achard (1753-1821) devised a process for extracting this sugar and then went on to make an unsuccessful attempt at

establishing the first sugar beet factory, in Poland (in an area then known as Silesia) in 1796. A few years later Napoleon Bonaparte (1769-1821) began to make war in Europe. French access to cane sugar (see *Saccharum officinarum*), which had until then been obtained from the plantations in the West Indies, was cut off by the British blockades of French ports. An alternative source of sweetener had to be found as Europe had not only become addicted to sugar but could no longer rely on honey as a practicable alternative sweetener. After encouraging commercial enterprise in France, Germany and Belgium, Napoleon was rewarded. In 1812 a new Paris refinery established by a French financier, Benjamin Delessert (1773-1847), began to produce the new sugar. Delessert was made a baron of the Napoleonic Empire for his efforts – and the Boulevard Delessert in Paris was named after him. This runs from the Place du Trocadéro to the Place de Passy – and the factory once stood in the Passy district. All three countries added more factories in the following years and by the middle of the 19th Century there were 58 in France alone.

Apparently most people had not noticed any difference between cane (*Saccharum officinarum*) and beet sugar – and today beet sugar fulfils 40% of the world's annual sugar demand. (Some suggest that it would have been an even higher percentage if the sugar cane industry was no longer able to rely on cheap labour costs for cultivation and harvesting as these aspects are now highly mechanized for sugar beet.) Today France is the second largest supplier of beet sugar.

Relatively recent German development of the plant culminated in White Silesian beet and this is the ancestor of many of today's varieties.

Today the leaves and root crown are used commercially as fodder, and the remainder of the root is processed to obtain sugar. The pulp left after this operation is also fed to cattle. Apart from a food sweetener sugar beet is also used in the manufacture of bath and shower gels.

In the early years of the 21st Century sugar beet as an arable crop was under threat in Britain (no less than elsewhere in Europe) as a source of sugar as the European Union's anticipated progressive reduction of import duties on beet bought from poor countries was implemented. However it was recognised that the British crop could still be in demand if it was fermented for bioethanol for use as a fuel additive. It had been worked out that added to petrol for use in cars it could not only be environmentally advantageous but could also result in an annual fall in UK petrol consumption of about 1.2 million tonnes.

Beet and cane (*Saccharum officinarum*) sugar both contain over 99% sucrose but it is believed that the human body assimilates beet sugar more easily.

See Also Sugar cane.