

# The East London Garden Society

## Plant Facts

### Sugar Beet



Haemoglobin is a protein in red blood cells that carries oxygen throughout your body. Whilst you might assume this is a uniquely human protein, it is also found in plants such as sugar beets.

Researchers from Lund University in Sweden, who note that haemoglobin from blood donations falls far short of demands, hope that this plant's haemoglobin may one day become a blood substitute capable of saving lives.

The sugar beet has a conical, white, fleshy taproot with a flat crown. The plant consists of the root and a rosette of leaves. Sugar is formed in the leaves and stored in the root.

The root of the beet contains 75% water, about 20% sugars and 5% pulp. Sugar is the primary value of sugar beet as a cash crop. The pulp, insoluble in water and mainly composed of cellulose, is used in animal feed. Sugar beets grow exclusively in the temperate zone, in contrast to sugarcane which grows exclusively in the tropical and subtropical zones. Sugar beet foliage has a rich, brilliant green colour and grows to a height of about fourteen inches. The leaves

are numerous and broad and grow in a tuft from the crown of the beet, which is usually level with or just above the ground surface.

Sugar beets are a common raw material used for the production of sugar but extracting sugar from the beets is far easier than extracting the haemoglobin.

According to researchers, the challenge is extracting enough from each mature beet although they estimate that one hectare of beets could produce one to two tons of haemoglobin. While complete blood is ultimately needed for blood transfusions, haemoglobin can be given in the first five hours following an accident to help oxygen circulate throughout the body.

There are multiple types of haemoglobin in your body including that in your blood as well as in your brain and men's testicles. The haemoglobin in beet shares most similarities with that in the brain but more research is planned to determine if the sugar beet haemoglobin could one day be used as a blood substitute.

Beet roots have the highest sugar content of all vegetables, but they also contain a wealth of vitamins, minerals and antioxidants. Adding beets to your diet a few times a week is a good way to benefit from their nutrition without overdosing on their high amounts of sugar. Keep in mind that the red beets most people add to salads and side dishes are known as table beets. They are not the same variety as the sugar beets mentioned above.

**Blood Pressure** - drinking beet juice may help to lower blood pressure in a matter of hours. One study found that drinking one glass of beet juice lowered systolic blood pressure by an average of four to five points. The benefit most likely comes from the naturally occurring nitrates in beets which are converted into nitric oxide in your body. Nitric oxide helps to relax and dilate your blood vessels, improving blood flow and lowering blood pressure.

**Boost your Stamina** - those who drank beet juice prior to exercise were able to exercise for up to 16% longer. The benefit is thought to be related to nitrates turning into nitric oxide which may reduce the oxygen cost of low-intensity exercise as well as enhance tolerance to high-intensity exercise.

**Fight Inflammation** - beets are a unique source of betaine, a nutrient that helps protect cells, proteins, and enzymes from environmental stress. It is also known to help fight inflammation, protect internal organs, improve vascular risk factors, enhance performance and help prevent numerous chronic diseases.

**Rich in Valuable Nutrients and Fibre** - beets are high in immune-boosting vitamin C, fibre and essential minerals like potassium which are essential for healthy nerve and muscle function. The manganese they contain is good for bones, liver, kidneys, and pancreas. Beets also contain the B vitamin folate which helps to reduce the risk of birth defects.

**Detoxification Support** - the betalin pigments in beets support your body's phase 2 detoxification process by assisting in the excretion of toxins from the body.

No discussion of beets would be complete without the mention of beet greens which are among the healthiest part of the plant. Besides containing important nutrients like protein, phosphorus, zinc, fibre, vitamin B6, magnesium,

potassium, copper and manganese, beet greens also supply significant amounts of vitamin A, vitamin C, calcium and iron. They also help ward off osteoporosis by boosting bone strength, fight Alzheimer's disease and strengthen your immune system by stimulating the production of antibodies and white blood cells.

If you've never tried beet greens before, don't let them intimidate you. They can be added raw to vegetable juice or sautéed lightly with other greens like spinach and Swiss chard, as can the beet root.