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### BEETROOT AND ITS NUTRITIONAL VALUE

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**Abstract:** Beetroot (*Beta vulgaris*) is also known as Chukander. The natural grouping of beetroot as an herbaceous biennial from Chenopodiaceae family. It is low in caloric value but high in sugar content. It is basically a winter season crop that is grown worldwide. Beetroot is rich in many vitamins like vitamin A, B and C and many minerals like Ca, Mg, Cu, Na, Fe, P and also rich in antioxidant properties. Beetroot is also useful in treating many diseases like skin problems, heart disease, cancer, blood pressure, inflammation etc. it also helps in treating anemia, improve sexual health and prevent osteoporosis. There are many products of beetroot which are sold worldwide in the forms of snacks, jam and jellies. The purpose of this review is to discuss the nutritional value and health benefits of the taproot plant beetroot which is scientifically known as *Beta vulgaris*.

**Keywords:** Beetroot, *Beta vulgaris*, Nutrients, Health.

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### INTRODUCTION

Way of life and deficient dietary patterns open people to various hazard factor for the advancement of choronic non-transferable disease's (CNCD's), diet wealthy in immersed trans-fats and straightforward sugar, poor in complex starch and fiber and related with smoking, liquor abuse, stress and stationary way of life have increment the quantity of sickness, for example, heftiness, diabetes, hypertension, osteoporosis and cardio vascular infection and others. Therefore, the quest for the sound eating routine has been essentially underscored around the world. Individuals who eat products of the soil wealthy in supplements including Potassium, fiber, folate (folic corrosive) and Vitamin A, B, E and C as a major aspect of their everyday diet have decreased danger of numerous chronic disease. lately, beetroot picked up consideration as practical food since it contains Vitamin A, B1, B2, B6 and C and great wellspring of minerals like calcium, magnesium, copper, phosphorous, sodium and iron. The beetroot is that the taproot parcel generally

known as beet in Canada and USA. numerous cultivars of beetroot and leaves. as beets while the vegetable is referenced as beetroot in British English and furthermore known as the table beet, garden beet, supper beet and brilliant beet. It is one of the few developed assortments of *Beta vulgaris* developed for their palatable taproot and leave (called beet greens). It believed that beetroot is originated during ancient Egypt during early middle bronze age. Various cultivators of beetroot are known, however for human consumption red color variety is famous. Beetroot can be expended crude as plate of mixed greens, squeeze, heated or bubbled beetroot juice is utilized as supplement since it might fill in as forerunner or nitric oxide(NO). Beetroot is wellspring of photochemical aggravate, that incorporate ascorbic corrosive, carotenoids, phenolic acids, flavonoids. In India beetroot is mainly cultivated in Haryana, Uttar Pradesh, West Bengal, Maharastra. The total cultivable area of beetroot in Tamilnadu during 2011-2012 was 1116 in hectare. Thiruppur (33.43 %), Theni (17.47%), the Nilgiris (14.60%),

Dindigul (13.98%), Coimbatore (11.56%), Krishnagiri (6.45%) and Erode (1.16%) are major beetroot growing district in the state. The major market centre for beetroot in Tamilnadu is Mettupalayam vegetable commission mundry.

## NUTRITIONAL VALUE OF BEETROOT

One cup of beetroot gives 2.19 g of protein, 9.19 g of sugar 58.5 calories, 13 g of starch and 3.81 g of fiber. Beetroot can likewise include the accompanying nutrient and minerals to an individual eating routine. The rate is from USDA's 2015-2020 dietary rules.

**Table 1: Daily requirement of vitamin and minerals in male and female**

Nutrients	% of Adult Daily Requirement
Vitamin C	7.4%
Vitamin A	0.3% for male and 0.39% for female
Folate	3.7%
Magnesium	7.83%
Phosphorous	7.77%

**Folate (vitamin B9):** One of the nutrients Vitamin B, folate is significant for typical tissue development and cell work. It's especially important for pregnant ladies (Feketek *et al.*, 2012).

**Manganese:** Manganese is an important chemical element, it is found in high amounts in legumes, vegetables, fruits and whole grains.

**Potassium:** It found in many studies that high potassium rich food is helpful to reduce blood pressure and improves hearth health (D'Elia *et al.*, 2011).

**Iron:** Iron plays very important role in human body. Its important function is to transport oxygen to red blood cells.

**Vitamin C:** vitamin c is other known vitamin rich which has many medicinal value, it is use to increase the immunity of human body and to improve skin health (Wintergerst *et al.*, 2006; Johnston *et al.*, 2014). Beetroot also contain other vitamin and minerals, some of them are Iron, Calcium, Riboflavin, Thiamine, Copper, Vitamin B-6, Selenium etc.

## MEDICINAL VALUE OF BEETROOT

Beetroots and beetroot juice are identified with various medical advantages, including improved blood stream, lower imperative signs

and expanded exercise execution, improve skin wellbeing, help malignant growth anticipation, help during pregnancy and some more.

**Delay Signs of Premature Aging:** Beetroot leaves contain abundant amount of vitamin A and Carotenoids which is helpful to fight against free radicals and act as cancer prevention agent. It also contains a lutein which is also a strong cancer preventing agents.

**Skin Health:** Beetroot consumption has been found to prevent skin disease and skin cancer (Kapadia *et al.*, 1996) Beets contain vitamin A whose main function is to maintain skin health and healthy mucous membrane. Vitamin A also supports the daily replacement of skin cells (Clare Gilbert., 2013). It is believing that beetroot can be useful in purification of the blood, in many research it has been justified.

**Beneficial During Pregnancy:** Beetroot is a rich source of folic acid which helps to prevent neural tube fault in a baby. Therefore, beetroot is included in pregnant mother diet (Helga, 2005).

**Blood Pressure:** Beetroot juice was found to bring down circulatory strain in merely a month. In studies it has been found that the beetroot juice contain nitrate which is converted into nitric oxide in the body result into blood vessels expansion (Vikas *et al.*, 2015). Drinking 250 mL of beetroot crush every day in a general sense cut down the circulatory strain after ingestion than plain water with nitrates (Leah *et al.*, 2012) It is believed that the juice may have preferable impacts over most antihypertensive medications. The nitrates present in beetroot juice help in lower blood pressure and reduce the risk of heart diseases and strokes.

**Aid Cancer Prevention:** Beetroot extract contain attribute betatin which have potential to prevent breast cancer and prostate cancer (Kapadia *et al.*, 2011). More examinations are expected to prove this preferred position of beetroot.

**Fight Inflammation:** Beetroot especially within the juice form was effective in treating inflammation (Asgary *et al.*, 2016). Another Egyptian study found that beetroot extract could treat inflammation within the kidneys (El Gamal *et al.*, 2014).

The folate, fiber and betalains might be liable for beetroot's anti-inflammatory properties.

**Control Blood Sugar Levels:** This has more to do with sugar beets. As indicated by an Iceland study, the fiber from sugar beets can decrease hyperglycemia (Thorsodottir *et al.*, 1998).

According to a UK study, the utilization of beetroot juice was found to stifle postprandial (after a dinner) glycemia (Peter *et al.*, 2014).

**Digestion:** 100 gm of beetroot give 2.81(g) of fiber. Expending enough fiber is fundamental for smooth absorption and gut wellbeing. As indicated by Unites State Department of Agriculture (USDA), a solitary cup of beetroot gives more than 8.81 % of an individual day by day prerequisite of fiber. In ancient time red beets have a prominent place when it comes to digestive system health. it has been found that romans utilize digestive system health issues to treat constipation and other related infirmities. There are many more health benefits of beetroot like:

- Treat Anemia
- Improve Sexual Health
- Prevent Cataracts
- Increases The Levels of Antioxidants
- Prevent Osteoporosis

## DIFFERENT PRODUCTS OF BEETROOT

There are many different food products of beetroot (*Beta vulgaris*) which are sold all over the world. Some of them are as follow:

**Organic Red Beets:** organic red beet can be consumed precooked or ready to eat right out of the bag.

**Pickled Sweet Tiny Beets:** Pickled sweet tiny beet is a preserved beetroot product made by putting beetroot in a salty-sweet solution of sugar, vinegar, water, cinnamon, salt, and cloves, etc.

**Chia Crunch Beet:** joins the integrity of beets with the force pressed nourishment of chia super seeds. Specifically, this freeze-dried tidbit is made with natural dark chia seeds, natural beet puree, natural yam puree, natural beet juice condensed, natural white grape juice condensed, natural custard starch, and common beet flavor Beet Chips

**Chia Squeeze Snack:** Squeezable vitality snack of beet and chia seed which is gluten-free and is very popular. Having a snack in a super convenient package that you can literally hold in one hand is great for certain activities, like hiking and climbing

**Cinnamon Spiced Beet Fruit Leather:** fruit leather of beetroot enriched with cinnamon seeds can be very helpful and healthy for humans. it is just like your typical fruit leather snack except for the fact that they are made from organic fruits and veggies and contain no added sugar.

**Michigan Beet and Carrot Drinking Vinegars:** the main ingredient in this beverage is raw unpasteurized apple cider vinegar, it is diluted with water to five percent acidity and is mixed with beet, carrot and organic cane sugar.

**Pickled Beets:** It is made with six ingredients: water, high fructose corn syrup, beet, salt, vinegar and natural flavor.

**Snack Beetroot:** It is a handmade fruit leather that is made from organic beet puree, organic apple pulp, organic artichoke fiber, organic coconut, organic beet juice and organic cinnamon.

## CONCLUSION

Beet root is a vegetable having great restorative and healthy benefit. It is rich wellspring of folic corrosive. Utilization of beet root in nourishment handling is constrained up to sugar fabricating. Beetroot loaded with an immense nutrient profile including vitamins C, folate, B6 and essential minerals offers impressive health benefits. The plant compound betalains and nitrates help to maintain heart health, regulates blood pressure and boost stamina. Moreover, being a versatile vegetable beetroot can be added into a well-planned regimen to reap the benefits.

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