

## Beetroot is a Good Tonic Food for Health – A Review

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### SUMMARY

Beetroot is a traditional and popular vegetable in many parts of the world including India. It is the taproot portion of the beet plant. It is especially rich in fiber as well as in sugars and has a moderate caloric value. It also has several bioactive compounds like betalains, carotenoids and is a powerful dietary source of nutrients. Beetroot is fulfill with the sources as antioxidants and nutrients, including magnesium, sodium, potassium, vitamin C and betaine and has several varieties with bulb colors ranging from yellow to red. Deep red-colored beetroots are the most popular for human consumption, both cooked and raw as salad or juice. Beetroots contain active compounds such as carotenoids, saponins, betacyanines, betanin, polyphenols and flavonoids. Therefore, beetroot ingestion can be considered a factor in cancer prevention.

### INTRODUCTION

Beetroot (*Beta vulgaris* L.) is crop belonging to the Chenopodiaceae family having, bright crimson colour. It is famous for its juice value and medicinal properties; and known by several common names like beet, chard, spinach beet, sea beet, garden beet, white beet and Chukander (in Hindi). The beetroot is indigenous to Asia Minor and Europe. They were first used for food about the third century AD although they had been grown for thousands of years for medicinal purposes. Beetroot has been regarded as a laxative, a cure for bad breath, coughs and headaches, and even as an aphrodisiac. Beetroot gives the best value from June to November, and for storing, the beetroot leaves should be cut 50 mm above the root (Yashwant, 2015). The morphology of the beetroot is a true biennial, producing thickened root and a rosette of leaves during the first year and flowers and seeds the second year. Beetroots are mainly grown for their swollen roots. The stem is short and plate, producing simple leaves that are arranged in a The stem is short and plate producing simple leaves that are arranged in a closed spiral (Neha *et al.*, 2018).

Beetroot can be eaten raw, used for juice extraction, baked or boiled. Red beets are delicious roasted, pickled, eaten in salads, or made into soup, which is popular in many Eastern and Central European countries. In contrast to fruits, the main sugar in beetroot is sucrose (D. Babarykin *et al.*, 2019). It also contributes to consumers' health and wellbeing because it is known to have antioxidants because of the presence of nitrogen pigments called betalains, mainly comprise of red-violet-colored betacyanins (betanin, isobetanin, probetanin and neobetanin) and yellow-orange-colored betaxanthins (Kaur and Kapoor 2002). Betalains responsible for intense red colour in beetroots are used as natural colorants by the food industry, and also receiving attention due to possible health benefits in humans. Beetroot pigment is used commercially as a food dye. The effect of raw beet juice and cooked beets on blood pressure of hypertensive subjects also has been tested. The beetroot were effective in improving blood pressure, endothelial function and systemic inflammation; the raw beetroot juice had a greater antihypertensive effect. Nevertheless red beetroot boiling caused the highest loss of the total antioxidant activity (Morgado *et al.*, 2016).



The beetroot apart from consumption in its fresh form, is also a valuable vegetable used in the food industry to produce dried and frozen food, non-concentrated and concentrated juices as well as natural colorants (betalains) used as additives in food manufacturing. Beetroot peel contained higher antioxidant compounds thus promising a more intense utilization of the peels in food and nutraceutical. Beetroot pigment is used commercially as a food dye (Singh et al., 2014). Many processed value added products are prepared from beetroot powder, pickle, candy, salad, chutney etc.

#### Nutritional value of Beetroot

Nutrient	Values
Water	87.58 gm
Energy	43 kcal
Protein	1.61 gm
Total lipid (fat)	0.17 gm
Ash	1.08 gm
Carbohydrate	9.56 gm
Fiber, total dietary	2.8 gm
Calcium	16 mg
Iron	0.8 mg
Magnesium	23 mg
Phosphorus, P	40 mg
Potassium, K	325 mg
Sodium, Na	78 mg
Zinc, Zn	0.35 mg
Vitamin C, total ascorbic acid	4.9 mg
Thiamin	0.031 mg
Riboflavin	0.04 mg
Betaine	128.7 mg
Fatty acids, total saturated	0.027 gm

(USDA, 2011)

#### Health Benefits and Medicinal Properties of Beetroot

Consumption of red beet, which is rich source of antioxidants, can contribute to protection from age related diseases. Red beet is one of the most potent vegetables with respect to antioxidant activity. Significant amount of vitamin C, Vitamin B1, B2, niacin, B6, B12 are found in beetroot, while the leaves are an excellent source of vitamin A consuming beetroot helps in curing many diseases such as anemia, blood pressure, cancer, dandruff, gastric ulcers, kidney ailments, liver toxicity or bile ailments like jaundice, hepatitis, food poisoning, diarrhea or vomiting. (Neha *et al.*, 2018)

#### Anti-cancer

Table beet affects numerous biochemical reactions, enzymes and metabolic synthesis. According to results, it seems that moderate and permanent consumption of table beet product affects the life expectancy of patients favorably; however, due to the increasing values of EGF, medical control is necessary for patients with prostate cancer treated by chemotherapy.

#### Antioxidant Properties

The effects of homeprocessing on the antioxidant properties and in vitro bioaccessibility of red beetroot bioactives were investigated.

#### Antihypertensive effect

Beta vulgaris cicla and Beta vulgaris rubra shows that BVC extracts possess antihypertensive and hypoglycaemic activity as well as excellent antioxidant activity.

#### CONCLUSION

The conclusion of study all scope of beetroot in that nutritional value, health benefits and their utilization. It is emphasis the medicinal, nutritional importance of the beetroot for the consumption of human being. Beetroot have been

reported to have therapeutic potential in traditional medicine for the treatment of various diseases. The juice from beets seems to be most effective as an antianaemic, anti-ischemic, anti-inflammatory, antioxidant and anticancerogenic product.

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