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Bottle Gourd (*Lagenaria siceraria*) – A Natural Guard for Mankind

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INTRODUCTION

The Bottle gourd (*Lagenaria siceraria*) belong to the family of Cucurbitaceae and grow worldwide in the tropical climates of Africa, Asia, America and Europe. Bottle gourd is also known by the names like Doodhi, Lauki, Calabash, Long melon and White flowered gourd (Salunkhe and Kadam, 1998; Nicola et al., 1999).Inside the bottle gourd there is a spongy fleshy white pulp and embedded seeds. Fruit pulp of bottle gourd is a rich source of fiber and carbohydrate and the pericarp of fruit is for Crude Fiber. It is an excellent gift of nature which has all essential constituents that are required for a good health. It is rich in vitamins, iron and minerals and also shows antibiotic properties. Bottle gourd has high content of Choline as compared to other vegetables till date.

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The Seed kernel having moisture (2.4%), Protein (30.7%), Carbohydrates (8.3%), Oil (52.5%), Fiber (1.5%) and Ash(4.4%). The seed kernels of bottle gourd produce 52.5% of oil with the properties like Iodine value (126.50), Saponification value (301.6) and Unsaponified matter (0.67%), Free fatty acid (0.5%) (Kubde et al., 2010). The oil extracted from the seeds is usually used in cooking as well as a hair oil. Bottle gourd seed oil is mainly known for its dietic nature because of omega-3 fatty acid which helps to promote energy levels, brain function and overall vitality of human (Wang and Ng:, 2000).

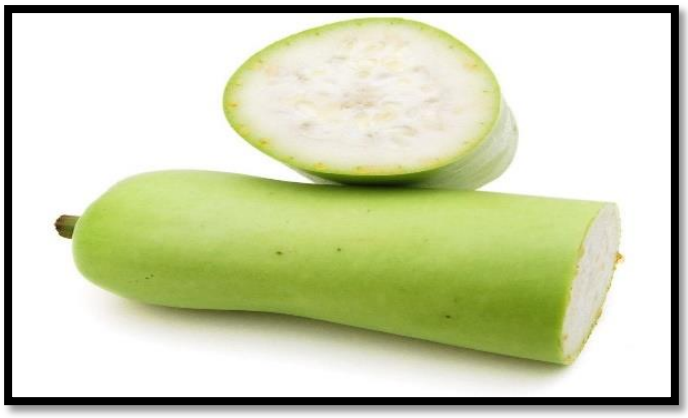
Taxonomical Classification of Lagenaria Siceraria -

Kingdom	Plantae
Division	Magnoliophyte
Class	Magnoliopsida
Order	Cucurbitales
Family	Cucurbitaceae
Genus	Lagenaria
Species	L. siceraria

A numerous number of chemical compounds that include terpenoids, sterols, flavonoids and saponins that have been isolated from the species possess many pharmaceutical effects.

CULTIVATION

- Soil and Climate
- Compatible with all types of soils but should not be too acidic (pH<5.5) or alkaline
- The most suitable soil are Loam soil and Sandy soil. Soil should rich in organic matter and have good drainage.
- The factors that have adverse effect on crop are Acidity and Alkalinity.
- The Optimum temperature for the growth is 18-22℃ and 30-35℃ for Night and Day respectively.
- Above 40℃ temperature can cause scorching.
- Lower temperature than 10℃ reduce the metabolic activities of seed for germination.
- Germination occurs fast at 25℃ to 30℃.



PHYTOCONSTITUENTS OF LAGENARIA SICERARIA-

The edible portion of the fruit shows a good source of Glucose and Fructose. Amino acid composition of fruit is as follow: leucines 0.8, valine 0.3, phenylalanine 0.9, tyrosine 0.4, threonine 0.2, alanine 0.5, serine 0.6, glutamic acid 0.3, cystine 0.6, cysteine 0.3, aspartic acid 1.9. Fruit is a major source of Vitamin B as well as of ascorbic acid. It also shows the presence of flavone-C glycoside. Water soluble polysaccharide that is being isolated from fruit body of Lagenaria siceraria, mainly compose of, 3-O-acetyl methyl-α-

dgalacturonate, methyl-α-d-galacturonate and β-d-galactose in a ratio of 1:1:1. Cytotoxic activity in vitro that is against of human breast adenocarcinoma cell line is shown by polysaccharide.

Dietary constituents of Bottle Gourd are as follow-

CONSTITUENTS	WITH PEEL (g/100g of dry gourd)	WITHOUT PEEL (g/100g of dry gourd)
Total sugar	5.870	8.290
Reducing sugar	5.220	7.920
Non-reducing sugar	0.650	0.290
Starch	1.310	1.570
Crude Fiber	4.450	3.400
Neutral detergent fiber	22.710	21.160
Acid detergent fiber	16.260	15.670
Hemi cellulose	6.450	5.580
Cellulose	16.070	16.400
Lagenin	0.193	0.167

HEALTH BENEFITS-

Since ancient times the bottle gourd is known for its numerous curing properties and thus used for many treatments like jaundice, diabetes, ulcer, piles, colitis, insanity, hypertension, congestive cardiac failure (CCF), and some skin disease. Fruit Pulp boiled in oil used to treat rheumatism and insomnia. The fruit pulp also used as an sedative, purgative, emetic, cooling, diuretic, antibilious and pectoral. Its flowers act as an antidote to poison. Bark stem of this plant and rind are diuretic. Some antibiotic activity is also shown by the extract of plant. The leaf juice is used for baldness. Bottle gourd juice is an excellent remedy for heart problems, urinary and digestive disorders, and also in diabetes. It also prevents the excessive loss of sodium, satiating thirst and provide cooling effect. The bitter fruit is found in wild bottle gourds and is responsible for purgative properties. Crushed leaves cure headache as provide cooling effect. Fruit of this plant is a rich source of water and minerals and posses vitamin A, C and B complex. Help in proper functioning of liver. Juice of this plant is helpful in curing jaundice, reducing greying of hair, help in burning sensation of urinary passage if consume with lime juice. Reduce fatigue and keep fresh in summers. Fight constipation as rich in fiber and low fat content thus recommended for diabetic and young ones. Considered as the best weight loss food as it has 96% water. Rich in thiamine, vitamin C, zinc, iron and magnesium thus helpful in improving health.

CONCLUSION

Lagenaria siceraria, known as bottle gourd, Lauki or ghiya is a climbing plant which bears hard and bottle shelled gourds as fruits. It is mainly cultivated in Japan, India, china, Thailand and sri lanka. Bottle gourd being rich in vitamins, iron and minerals thus makes an excellent diet source. It has high content of choline that serve as precursor of neurotransmitter acetylcholine, which in turn is very crucial for enhancing and retaining memory, among all the vegetables acknowledge to man till date. Bottle gourd is very useful to manage diseases like hepatic diseases, cardiac disorders and ulcer. The juice of bottle gourd is very helpful to control blood pressure of hypertensive patients, because of its richness in potassium content. In the light of above mentioned numerous benefits of bottle gourd, it may regarded as a natural guard against diseases.

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