

CHEKURMANIS: A LESS EXPLORED MULTI VITAMIN LEAFY VEGETABLE

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Chekurmanis (*Sauropus androgynus*), belonging to Euphorbiaceae, is a perennial shrub, growing wildly in Southeast Asia. The leaves of chekurmanis are highly nutritious, being a very rich source of micronutrients, vitamins, and protein. It is known as “Vegetable of 21st century”, “Multivitamin Green”, “Powerhouse of Multivitamins” and “Multimineral packed leafy vegetable”. Leaves are rich in proteins (6-8%), high compared to other leafy vegetables like methi and palak; Vitamin A (more than mangoes and papayas), and Vitamin B, C, Nicotinic acid, mineral matters, phosphorous and iron. It is why the plant is nicknamed as ‘multi vitamin green,’ and ‘multi mineral packed leafy vegetable’.

The crop is extensively grown in hot and humid climatic situations. The leaves and succulent young tips of the plant are normally eaten like tropical asparagus, raw in the form of salads or steamed or alternatively added to stirfry, rice, and egg dishes, soups or casseroles, and sometimes blanched to serve with chili paste. The flowers and the small purplish fruits of the plant are also reported to be eaten.

Botany: It is a slow growing glabrous shrub; attaining a height of 2-3.5 m. Main branches are erect and flaccid, while lateral branches are thin. It bears dark green oval leaves which are 5-6 cm long. The plant bears small reddish monoecious flowers. Flowers are found in the month of April-July. Fruits are sessile, white or pinkish, 0.2 cm in diameter with a fleshy epicarp. Fruit setting occurs in July-December. It is usually maintained as a perennial plant at the height of 1-1.5 m by frequent harvesting of leaves.

Nutritive value: It has been reported that an analysis of the proximate composition of *S. androgynus* leaf has shown that its nutritive value is superior to other commonly consumed leafy-vegetables in India.

Leaves of chekurmanis are rich in minerals. Minerals are considered essential for physical and mental development, the immune system, and various other metabolic processes.

Chekurmanis leaves are rich in vitamins. It is very rich in Vitamin A (9510 IU) and Vitamin C (247 mg/ 100 g fresh leaves). Evidence have suggested that the plasma levels of Vitamin C in large sections of the population are sub-optimal for the health protective effects. As it cannot be synthesized by human system, our body entirely depends upon dietary sources to meet the needs of this vitamin. Apart from the well-known roles in vision, Vitamin A is also important for several other physiological processes including, foetal development, cell growth and regulation of immune system

Medicinal Properties

- A decoction of its roots is often recommended in case of fever in rural areas
- Pounded roots and leaves are reported to be used as a poultice for ulcers in the nose
- In some areas of South India, the juice of the leaves pounded with the roots of pomegranate and the leaves of jasmine is used in eye troubles
- The dark green leaves provide a rich source of chlorophyll which is a valuable blood building element, cell rejuvenator, beneficial to blood circulation and for regular bowel elimination.
- As discussed earlier, they are rich in various micro nutrients and phytochemicals having antioxidant properties which offer protection against heart disease and certain types of cancer. For example, Beta-carotene prevents lung and skin cancer, niacin prevents recurrent heart attacks, ascorbic acid helps in improving immune system and riboflavin for lesion treatment *etc.*,
- High blood pressure is lowered by eating raw leaves.
- Leaves are given as vegetable to nursing mothers to stimulate breast milk production. In lactating sheep also, it induced milk production.
- It is also beneficial to cure anemia.

- It is suitable to prevent tiredness, to promote absorption from the alimentary tract and to prevent chronic cardiovascular diseases
- The leaves are also found to contain the amino acids like lysine, methionine, tryptophan, phenylalanine, threonine, valine, leucine and isoleucine
- Polyphenols present in the leaves have protective effects on human carcinogenesis, cardiovascular and renal disorders, memory and cognitive function, age-related neurological dysfunctions such as Alzheimer's disease, ulcers and several other human ailments.
- Substantial amount of flavonoids present in the leaves are known to act at different development stages of malignant tumors by protecting DNA against oxidative damage, inactivating carcinogens, inhibiting the expression of the mutagenic genes and enzymes, which are responsible for activating pro-carcinogen substances and activating the systems responsible for xenobiotic detoxification.
- *Sauropus androgynus* leaf is reported to contain considerable amounts of the alkaloid papaverine (580 mg per 100 gm fresh leaf). Papaverine is an alkaloid antispasmodic drug, used primarily in the treatment of visceral spasm and vasospasm (especially those involving the intestines, heart, or brain) and occasionally in the treatment of erectile dysfunction. It is used in the treatment of acute mesenteric ischemia

Uses and Foods Prepared from Chekurmanis

- The leaves, tender shoots, and fruits are used either as raw or as cooked vegetable. Cooked leaves are acidic and are used in soup preparation in Java. A sweetmeat is also prepared from the fruits there
- In Indonesia, the leaves are reported to be used for giving light green colour in pastry and fermented rice. Leaves are used in sandwiches, salads, curries, meat, rice & curry dishes, scrambled eggs, omelets, pickles, casseroles, stir fries and as a garnish
- To cook it with crab meat, minced pork or dried shrimp tomato.
- Chekurmanis leaves are used for preparing cutlet in southern part of India.

- The leaves and succulent young tips of the plant reportedly possess a pleasant taste, similar to fresh garden peas and slightly nutty and these are normally eaten like tropical asparagus, raw in the form of either salads or steamed in Kerala and Karnataka.

Conclusion

Climate change and population growth impede progress toward achieving food and nutritional security. Production of an expanded range of food crops can reduce risk and enhance food security. Diversified diets, based on a range of crop species, are essential for nutritional security. Leafy and underexploited vegetables like chekurmanis in particular have appreciable levels of ‘macro’, ‘micro’ and ‘phyto’ nutrients which can help in alleviating malnutrition and significantly contribute to nutritional security. So, the consumption of this green leafy vegetable should be promoted, especially among the vulnerable sections of the population because of its cheap price. This could be a highly feasible strategy to combat problems of malnutrition in our country in future.

Reference

Kalpana, P. and Krishnapura, S., 2017, Nutritional Profile of Chekurmanis (*Sauropus androgynus*), A Less Explored Green Leafy Vegetable. *The Indian journal of nutrition and dietetics* 54(3):243