

Star Fruit: Valuable Source of Functional Food

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Introduction

Star fruit, also known as carambola, can be found in abundance in Southeast Asia where it is heavily cultivated. The yellow fruit grows on trees in India, Asia, South America, Australia, and the southern United States, but it's enjoyed raw and cooked all over the world. While it's frequently used as a garnish due to its fun shape, it also adds a sweet flavor to a number of dishes like salads and cocktails. Star fruit was an underutilized fruit crop in India. Star fruit was neglected due to perishable and higher moisture content, the fruit could not fetch good market and gone as waste.

Botanical description-

An '*Oxalidaceae* family' member- *Averrhoa carambola*, well known as Star fruit, is an age old plant. Star fruit, is a star shaped tropical fruit with sweet and sour flavor. The starfruit is about 2 to 6 inches in length. Major two distinct classes of Carambola, the Smaller with sour taste and the Larger with sweet taste. It is vegetatively propagated during the 1940's and 1950's and, later in 1965, and changed the name to 'Golden Star' and distributed for cultivation. The word carambola comes from the Sanskrit word Karmaranga meaning "food appetizer". Traditional medicines are plant derived medicines. According to WHO, more than 80% of developing country's population depends on plant based medicines for their health care needs.

Nutritional composition of star fruit -



Star fruit is a low-calorie but high- fibre food that makes it exceptionally healthy. It is also low on fat but loaded with Vitamin B, Vitamin C, sodium, potassium, iron and several important antioxidants making it an all-round healthy snack.

Table 1: Nutritional Value of *Averrhoa carambola* [25, 26].

Nutrients	Value per 100 mg
Calories	35.7
Water	92%
Cholesterol	0 mg
Moisture	89000-91000 mg
Protein	380 mg
Fat	80 mg
Carbohydrate	9380 mg
Fiber	0.80-0.90
Minerals	
Calcium	4.4-6.0 mg
Phosphorous	15.5-21.0 mg
Iron	0.32-16.5 mg
Ash	0.26-0.40 mg
Magnesium	10 mg
Potassium	133 mg
Sodium	2000 mg
Vitamins	
Thiamine	0.03-0.038 mg
Riboflavin	0.019-0.03 mg
Carotene	0.003-0.552 mg
Vitamin C	34 mg
Vitamin A	61 IU
Ascorbic acid	26.0-53.1 mg
Niacin	0.294-0.38 mg

Medicinal uses:

Star fruits are considered to have a number of beneficial health effects. These include antioxidant, hypoglycemic, hypotensive, hypo-cholesterolemic, anti-inflammatory, anti-infective, antitumor, and immune-boosting effects. Traditionally Star fruit is used as home remedy for hangovers and sunburns. Star fruit also helps to cure cough, fever, ulcers and sore throats. The leaves of star fruit can be used to treat stomach ulcers and also improves digestion. In India, the ripe fruit is administered to halt hemorrhages and to relieve bleeding hemorrhoids; and the dried fruit or the juice may be taken to counteract fevers.

Conclusion:

Star Fruit also known as Carambola. Star fruit is believed that it may have originated from Sri Lanka or Moluccas, Indonesia, but has been cultivated in the Indian Subcontinent and Southeast Asia for hundreds of years. The fruit is about 5 to 15 centimeters (which means 2 to 6 inches) in length and is in shape of oval. They are rich in antioxidants, potassium, and vitamin C; and low in sugar and sodium. Value addition of Star fruit into processed products will enhance the health benefits of consumers due to many bioactive components present.

Also the product formulations and process optimization of star fruit value added products can help find the unexplored qualities of unexploited star fruit.

References:

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