

## Importance of Passion Fruit in The North Eastern Hill Region of India

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### Abstract

Passion Fruit is a perennial, vigorous, climbing, woody vine that produces round or ovoid fruits. There are three cultivars of Passion fruit. It is a high-value export-oriented crop owing to its excellent flavoured juice due to its pleasant aroma and rich flavor, which help produce a high-quality squash. Passion fruit is a high-quality source of nutrients and vitamins like Vitamin C, and potassium, as well as non-nutritive phytochemicals like carotenoids and polyphenols. It also contains plant sterols, which help lower cholesterol levels. It also contains vitamin B6, which helps our body regulate blood sugar and promotes a healthy immune system. It is very popular for its medicinal value and is also used as a vegetable in the North-Eastern Hill Region. Passion fruit tender shoots and leaves are prescribed as a remedy for diarrhoea, dysentery, diabetes, hypertension, gastritis, abdominal flatulence and liver tonic. The leaves contain alkaloids, which have lowered blood pressure, sedative, and antispasmodic effects.

**Keywords:** Passion fruit, Cultivars, Squash, Alkaloids

### Introduction

Passion Fruit (*Passiflora edulis* Sims) is a native of southern Brazil through Paraguay, belonging to the family *Passifloraceae*. It is mostly grown in tropical and sub-tropical parts of the world, from South America to Australia, Asia and Africa. In India, passion fruit is widely grown in Himachal Pradesh, many parts of southern India, and north-eastern states like Manipur, Meghalaya, Mizoram, Nagaland and Sikkim. It is a perennial, vigorous, climbing, woody vine that produces round or ovoid fruits. It is a high-value export-oriented crop owing

to its excellent flavoured juice due to its pleasant aroma and rich flavor. It is a prolific bearer, highly remunerative even without much care, and well-thriving in hilly regions.



### Composition

The passion fruit juice with an excellent flavor is quite delicious, nutritious, and liked for its blending quality. Passion fruit is a high-quality source of nutrients and vitamins like Vitamin C (18.2 mg/100g of edible portion), Vitamin A (2410 IU/100g of edible portion), and potassium (278 mg/100g of edible part), as well as non-nutritive phytochemicals like carotenoids (9.25 mg/L) and polyphenols (435 mg/L). It contains plant sterols, which help lower cholesterol levels. It also contains vitamin B6, which helps our body regulate blood sugar and promotes a healthy immune system. The passion fruit rinds have a very low pectin content (2.4%). The rind residue contains about 5–6% protein and could be used as filler in poultry and pig feed.

### Uses

- The leaf of passion fruit is very popular for its medicinal value and is also used as a vegetable in the hills of north-eastern India.
- Boiled extract of fresh tender shoots and leaves is prescribed as a remedy for diarrhoea, dysentery, diabetes, hypertension, gastritis, abdominal flatulence, and as a liver tonic.
- The leaves contain alkaloids, which have lowering blood pressure, sedative, and antispasmodic effects.

- The fruit is valued for its pronounced flavor and aroma, which help produce a high-quality squash.
- The fruit juice with an excellent flavor is quite delicious, nutritious, and liked for its blending quality.
- The juice is extensively used in confectionery and the preparation of cakes and ice cream.
- The Passion fruit has been used by the Brazilian tribes as a heart tonic and medicine and as a favourite drink called maracuja grande that is frequently used to control asthma, whooping cough, bronchitis, and other tough coughs.



**Yellow Passion Fruit**

#### **Cultivars**

##### **1. Purple Passion Fruit**



Vines are productive at higher elevations. Fruits are about 4-5 cm in diameter and deep purple when ripe, each weighing 35–45 g. The juice content varies from 31-35%. The variety is known for its good quality in terms of flavor and nutrient content. Seeds are black in color. It is also known for its fragrance and is popular for fresh consumption, juice production and desserts.

**Purple Passion Fruit**

## 2. Yellow Passion Fruit

Yellow Passion fruit is suitable for lower elevations and is less productive at higher elevations due to its sensitiveness to low temperature. The fruit is larger in size than the purple variety, each weighing about 60 g, round in shape with yellow mottled spots, turns golden yellow when ripe, and has a tangy flavour. Juice is more acidic, its recovery being comparatively less than the purple, and making various passion fruit- based products.

**Yellow Passion Fruit**

## 3. Kaveri Hybrid

Kaveri hybrid is a hybrid between purple and yellow passion fruit developed at the Central Horticulture Experimental Station, IIHR, Chettalli, Karnataka. It is a high-yielding variety, and fruit weighs about 85-110 g. It is very vigorous; its fruits are a blend of purple and yellow varieties but have the size of the yellow variety. The Kaveri fruits are purple in colour, their fruit quality is more comparable to that of the purple variety. The pulp is less acidic than the yellow variety.



**Passion Fruit var. Kaveri**

### Value added products

Passion fruit juice contains about 20-25% of vitamin C. It acts as an antioxidant. Passion fruit juice has good tastes when chilled, and it is best to consume during sunny days. Different varieties of passion fruit products are passion fruit squash, juice concentrate, jam, jelly, ice cream, cordial, syrup, RTS beverages, carbonated beverages, puree, butter, cream, slices, powder, etc. There is very good demand for juice concentrate in foreign and international markets.



**Passion Fruit Squash**

### Passion fruit industry

The Passion fruit in processed form, like concentrates and ready to serve has a tremendous scope of market because of its excellent flavor and aroma. The passion fruit plant, which has numerous medicinal properties, has great scope for markets. There is a high possibility of expanding its cultivation to the low and mid-hill regions for commercial-scale production. The passion fruit industry can bring more employment opportunities to the region with not only its cultivation but also the setting up of more processing and semi-processing units in the region.

### **Conclusion**

The Passion fruit is a very important crop in the North Eastern Hill region for its medicinal value, and it's been used by healthcare providers to treat lowering blood pressure, diarrhoea, dysentery, diabetes, hypertension, gastritis, abdominal flatulence and liver tonic. It has high demand in the market for its medicinal benefits.

### **References**

Anonymous (2012). Production manual of passion fruit for north eastern Hill Region Published by ICAR Research Complex for NEH Region, Manipur Centre, Lamphelpat, Imphal.