

Unlocking The Hidden Treasure: The Value Addition Of Jackfruit

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INTRODUCTION

Jackfruit, also known as the Jack tree or monkey jack, is a tropical fruit native to the southwest rainforests of India. It is believed to have been named after a Malayalam word derived from the word "Chakka". India is the second-largest producer of jackfruit in the world and is widely regarded as the motherland of the fruit. Jackfruit is cultivated in many southern states, such as Kerala and Tamil Nadu, as well as in coastal areas, such as Goa and Maharashtra. It is also found in many other states, such as Assam and Bihar, Tripura and Uttar Pradesh, and in the foothills of the Himalayas. Jackfruit is a versatile fruit used for various purposes, from food and fuel to medicinal and industrial products. It is often called the poor man's fruit due to its affordability and availability during the season. It can also augment local income when grown as part of agroforestry or home garden systems. (Lakshminarayan, 2017). Jackfruit comprises three components: the bulb (30–32%), the seeds (18%) and the rind (5- 55%). The main economic product is the fruit, which is used when immature or mature. The mature jackfruit is primarily used as a dessert due to its sweet and fragrant arils (bulbs). The young or pre-mature jackfruit is also used as a vegetable rich in vitamins and minerals. The seed is a source of starch and delicacy during the season. Jackfruit has an impressive nutritional profile, containing carbohydrates, proteins, potassium, calcium, iron, and vitamins A and C. Jack fruit has a great potential for added value, with over 100 items being prepared from the immature to the well-mature stage. However, the importance of fruit, seed, and rind is not widely known to growers and consumers. Therefore, it is important to utilize surplus fruits during the season to improve the farmers' livelihood by producing value-added products.



NUTRITIONAL VALUE OF JACKFRUIT

Nutrients	Nutrient value	Recommended Dietary Allowance (%)
Cholesterol (mg)	0	0
Dietary fiber (g)	1.5	4
Vitamins		
Folate (µg)	24	6
Niacin (mg)	0.92	6
Pyridoxine (mg)	0.329	25
Riboflavin (mg)	0.055	4
Thiamin (mg)	0.105	9
Vitamin A (IU)	110	3.5
Vitamin C (mg)	13.7	23
Vitamin E (mg)	0.34	2

Nutrients	Nutrient value	Recommended Dietary Allowance (%)
Electrolytes		
Sodium (mg)	3	0
Potassium (mg)	303	6.5
Minerals		
Calcium (mg)	34	3.4
Iron (mg)	0.6	7.5
Magnesium (mg)	37	9
Manganese (mg)	0.197	8.5
Phosphorus (mg)	36	5
Phosphorus (mg)	21	3
Selenium (mg)	0.6	1
Zinc (mg)	0.42	4
Phytonutrients		
Carotene-β (µg)	61	
Crypto-xanthin-β (µg)	5	
Lutein-zeaxanthin (µg)	157	

CHEMICAL COMPOSITION OF JACKFRUIT

Nutrients	Young fruit	Ripe fruit	Seed
Water (g)	76.2-85.2	72.0-94.0	51.0-64.5
Protein (g)	2.0-2.6	1.2-1.9	6.6-7.04
Fat (g)	0.1-0.6	0.1-0.4	0.40-0.43
Carbohydrate (g)	9.4-11.5	16.0-25.4	25.8-38.4
Fiber (g)	2.6-3.6	1.0-1.5	1.0-1.5
Total sugars (g)		20.6	
Total minerals (g)	0.9	0.8-0.9	0.9-1.2
Calcium (mg)	30.0-73.2	20.0-37.0	50.0
Magnesium (mg)	NA*	27.0	54.0
Phosphorus (mg)	20.0-57.2	38.0-41.0	38.0-97.0
Potassium (mg)	287.0-323.0	191.0-407.0	246.0
Sodium (mg)	3.0-35.0	2.0-41.0	63.2
Iron (mg)	0.4-1.9	0.5-1.1	1.5
Vitamin A (IU)	30.0	175.0-540.0	10.0-17.0
Thiamine (mg)	0.05-0.15	0.03-0.09	0.25
Riboflavin (mg)	0.05-0.2	0.05-0.4	0.11-0.3
Vitamin C (mg)	12.0-14.0	7.0-10.0	11.0
Energy (kJ)	50-210	88-410	133-139

USES OF JACKFRUIT

- Mature Jackfruit, young Jackfruit and the seeds of the jackfruit tree provide high nutritional value as a food.
- Jackfruit is used as a fruit and can be eaten as a ripe fruit.
- It is also used as a value-added processed food, such as dried and canned/bottled Jackfruit, chips, and other snacks based on Jackfruit.
- The timber produced by the jackfruit tree is a medium hardwood that is resistant to termites. This timber is used for furniture, doors, boats, windows, and musical instruments.
- The wood of the tree can also be used as firewood.
- It also has ecological and environmental benefits, such as providing a permanent cover, reducing raindrop impact, and providing shade and windbreak.
- Jackfruit is a traditional medicinal plant used in many Southeast Asian countries for its medicinal properties. The Chinese consider the pulp and seeds of the tree to be a tonic and cooling agent, as well as a source of nutritious food. The seed starch is given to a person to relieve biliousness and the roasted seeds are regarded as an aphrodisiac. Additionally, the ash of the tree is used for healing ulcers when mixed with corn or coconut shell ash or coconut oil. The dried latex yields artostenone, a compound that is convertible to artosterone, which has a potent androgenic property. If mixed with vinegar, the latex promotes the healing of abscesses and the root is used as a natural remedy for skin ailments and asthma. Additionally, the root extract can be taken to treat fever and diarrhea.
- Chips of heartwood when boiled yield a yellow dye used to decorate Buddhist monks' robes, and leaves are used in Hindu temples and other religious places.

VALUE ADDITION IN JACKFRUIT

Jackfruit is an extremely fibrous fruit that can be stored as a ripe fruit for an extended period. Consequently, it is essential to exercise caution when purchasing fresh jackfruit to produce any added-value food product. The fruits, which are either ripe or unripe, and seeds are also processed in various ways for food and other products. Different value-added products of jackfruits are given below;

Sl. No. Value-added products

- 1 Dried jackfruit flakes
- 2 Preserved jackfruit bulbs
- 3 Dehydrated jackfruit bulbs
- 4 Ready-to-serve jackfruit beverages
 - Jackfruit Squash
 - Jackfruit Nectar
 - Jackfruit Wine
- 5 Jackfruit Vinegar
- 6 Canned jackfruit products
- 7 Jackfruit candy
- 8 Jackfruit bar & ice cream
- 9 Jackfruit Pickles
- 10 Jackfruit Chips
- 11 Jackfruit Papad
- 12 Jackfruit Jelly/Jam
- 13 Jackfruit Flour
- 14 Jackfruit Seed Flour

CONCLUSION

Jackfruit is a nutritious fruit rich in carbohydrates, proteins, potassium, calcium, iron, and vitamins A, B, and C. Due to high levels of carbohydrates, jackfruit supplements other staple foods in times of scarcity in some regions. The jackfruit's flesh is starchy and fibrous and a source of dietary fiber. It was traditionally used as a remedy since it provides multiple health benefits, including antioxidant protection, cardiovascular health, and immunity. Value addition enhances its economic value and contributes to food security, nutritional intake, and the development of a sustainable jackfruit industry.

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