

Jackfruit and Its Health Benefits

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Introduction

Jackfruit (*Artocarpus heterophyllus* Lam) is a tree commonly cultivated in the tropical region of the world and it belongs to the family Moraceae. It is a monoecious evergreen tree which is indigenous to the rain forests of the western ghats in the southwestern parts of India. It is consumed widely during spring to summer seasons and are known commonly as *kanthal*, *kathal* or *kathar*. The fruit being a power house of nutrients are also termed as super food. It has multi-purpose utilities such as a source of food, timber, fuel, fodder, medicinal and industrial products. The primary economic product of Jackfruit is the fruit which is used both when mature and unripe. It consists of phytochemicals such as carotenoids and flavonoids. These biochemical constituents' acts as antimicrobial, anti-ulcer, anti-diabetic, anti-inflammatory, anti-cancer, anti-diarrheal, anti-asthmatic agent which help in digestion, wound healing, blood pressure reduction and against worm infections. Additionally, jackfruit barks, leaves, seeds, latex, and inflorescence are used in traditional medicines. For commercial purposes it can be preserved by applying various techniques like drying, freezing and canning.



Jackfruit seed flour are gaining immense attention due to their high nutritional content and has been used as a potential ingredient in improving the fiber and mineral contents of several food products. The value-added products have more relevance for the commercial

utility rather than the whole fruit. It is abundantly available during the harvesting season and thus can serve as a means of livelihood generation for the farmers. Further additional income can be generated throughout the year by developing value added products from different parts of jackfruit.

Nutritive Value and Chemical Composition

Jackfruit is being harvested and consumed mainly due to its high nutritional content. The most commonly consumed parts are fruit (both mature and ripe) and seed. The nutrient content of these parts are mentioned in the table below:

Sr. No.	Nutrients Content	Ripe Fruit	Young Fruit	Seed
(A)	Proximate value (range)			
1.	Moisture (%)	72.0-94.0	76.2-85.2	51.0-64.5
2.	Protein (g)	1.2-1.9	2.0-2.6	6.6-7.04
3.	Fat (g)	0.1-0.4	0.1-0.4	0.40-0.43
4.	Carbohydrate (g)	16.0-25.4	9.4-11.5	25.8-38.4
5.	Fiber (g)	1.0-1.5	2.6-3.6	1.0-1.5
6.	Total sugar (g)	20.6	--	--
(B)	Minerals			
7.	Total minerals (g)	0.87-0.9	0.9	0.9-1.2
8.	Calcium(mg)	20.0-37.0	30.0-73.2	50.0
9.	Magnesium(mg)	27.0	---	54.0
10.	Phosphorus (mg)	38.0-41.0	20.0-57.2	38.0-97.0
11.	Potassium (mg)	191-407	287-323	246
12.	Sodium(mg)	2.0-41.0	3.0-35.0	63.2
13.	Iron (mg)	0.5-1.1	0.4-1.9	1.5
(c)	Vitamins			
14.	Vitamin A (IU)	175-540	30	10-17
15.	Thiamine (mg)	0.03-0.05	0.05-0.15	0.25
16.	Riboflavin (mg)	0.05-0.4	0.05-0.2	0.11-0.3
17.	Vitamin C(mg)	7.0-10.0	12.0-14.0	11.0

Source: Swami *et al.*, (2012). Srivastava and singh (2020)

Uses of Jackfruit and Its By Product In Different Food Preparation

Jackfruit has proved to have wide industrial applications. The pulp of jackfruit is used in preparation of ice cream, cake, jam, yoghurt, idli; seed or seed flour has been used in preparation of noodles, bread spreader, pasta, bun, cake, diet chocolate, tortilla, cookies, chips, extruded products, biscuits, oil, chapatti, halwa and rinds are incorporated during production of jelly, biscuits, bread or meat analogue.

Novel and Traditional Jackfruit Products

Some of the most common novel and traditional jackfruit products available are: Vacuum fried chips, jackfruit or seed flour, ready to cook mature jackfruit, osmotically dried jackfruit, retorted tender jackfruit, jackfruit halwa/varatty, carbonated beverages, vegetable curries, pickles and payasam etc.

Health Benefits of Jackfruits

Due to its high nutritional value and phyto-constituents, it has proved to have several health benefits. Presence of high amount of vitamin C and antioxidants boosts immunity and slows down ageing process. It is a good source of carbohydrates which provide instant energy on consumption. Presence of potassium in right amount help in regulation of blood pressure and to coordinate or maintain muscle function. Potassium ensures a balanced regulation of sodium in our body which if left unregulated and can cause damage to the arteries and the heart. The presence of vitamin B6 helps in lowering the levels of homocysteine, thereby reducing the risks of stroke and heart diseases. It is a rich source of soluble and insoluble fiber which provide bulk to stool thereby easing up the bowel movement. It protects the colon mucus membrane by clear out cancer causing toxin from the large bowel. Jackfruit also contain high amount of phytochemicals, flavonoids and antioxidants eliminates the toxins produced by the body as well as the free radicals which are harmful for human health.

Richness of beta carotene provides a healthy vision and protects the eyes from viral or bacterial infection. It helps in improving the eyesight and prevents the degenerations of the retina or reduces the risk of cataracts. High amount of minerals especially calcium, strengthens the bones and potassium role to reduce the loss of calcium through kidneys. The other disorders like osteoporosis, arthritis managed by jackfruit consumption. High amount of iron present in Jackfruit prevents from anaemia and help in aiding metabolism. It provides relief from gastric ulcers which result from the continuous damage to the stomach lining

because of a helicobacter pylori infection. Presence of antioxidants in jackfruit controlling the asthmatic attacks by eliminating the free radicals which produced in the body because of pollution, otherwise lead to attack.



Future Perspective

Now-a-days the quality and quantity of food have become an emerging issue at global level. Jackfruit is grown mainly on small family farms and produces multiple products for human consumption, animal feed, and industrial purposes. In addition, jackfruit has contributed to sustainable soil management by improving water retention and drainage properties. In recent times, variety of clinical and economic developments has emerged for commercialization of jackfruit products.

However, it's far taken into consideration as an underutilized fruit in industrial scale, particularly because of higher percentage inedible portion which ends up in more waste generation. There may be an exceptional need of research on enhancing its shelf life and commercialization. The usage of standardized jackfruit products provides consumers a manner of reaping the broad spectrum of fitness gain of this fruit.

Conclusion

The nutritional profile of jackfruit makes it highly desirable fruit with potential health benefits. It can be used for production of high quality value added products that can contribute to food security. Due to its richness of nutrients, it can be good candidate for combating nutritional deficiency. The value added products prepared from jackfruit can be used as a potential ingredient in nutritional and sensorial improvement of bakery or other industrial products.

References

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