

# Value Added Products from Finger Millet and its Health Benefits for Healthy Life

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Finger millet, commonly known as ragi (*Eleusine coracana* (L) Gaertn.) belongs to family Poaceae commonly known as ragi, mandua, nagli, kapai and madua is widely cultivated in India. The crop has the wider adaptability to different soils from poor to high fertile soils. It can also tolerate a certain degree of alkalinity and also tolerance to a wide range of biotic and abiotic stress. Globally it is fourth most important crop after sorghum, pearl millet, and foxtail millet. It is one of the oldest foods known to humans and possibly the first cereal grain used for domestic purposes.

## Finger millets in daily food

In India, millets have been used as a staple food for thousands of years. Today, millet ranks as the sixth most important grain in the world, sustains 1/3 of the world's population and is a significant part of the diet in several parts of the world. It is often considered to be a "poor men's cereal" as it does not require fertilizer input. "Indeed, it is one of the few special species that currently support the world's food supplies and has become a more mainstream supplement to the diet nowadays. It is highly nutritious and considered to be one of the least allergenic and most digestible grains.

## Health benefits of finger millets

Scarcity of protein-rich food and food supplements are responsible for protein-energy malnutrition particularly among children and lactating women in developing countries like India. The World Health Organization (WHO) has identified 4 major forms of malnutrition crippling globally. This includes vitamin-A deficiency, iron deficiency, iodine deficiency and protein energy malnutrition. Millets are a storehouse of nutrients and are a remedy for the malnutrition that affects a vast majority of our population. It has intensive multifunctional importance. Millet Network of India (Deccan Development Society, FIAN, India) confirmed in their study that, as compared to the other crops (rice and wheat), it is an exceptionally rich source of calcium chromium, zinc, copper and magnesium, essential for good health. It is a rich source of non-available carbohydrates with a low glycemic index, which is

beneficial for prevention of diabetes and cardiovascular diseases.

## Nutritional composition of finger millet

Finger millet contain the dietary and crude fibers about 18.6% and 4.3%, respectively (Rathore *et al.*, 2019), carbohydrate composition includes 59.5–21.1% starch, 1.4–1.8% cellulose, and 0.04–0.6% lignin (Wankhede *et al.*, 1979), starch concentration ranges from 59.4 to 70.2% dry matter, with 80–85% amylopectin and 15% amylose (Mittal, 2002), crude protein ranged from 5.6 to 12.70% (Bhatt *et al.*, 2003), essential amino acids are phenylalanine, histidine, isoleucine, leucine, lysine, methionine, threonine while the non-essential amino acids are aspartic acid, glutamic acid, alanine, arginine, cystine, glycine, proline, serine and tyrosine (Ramashia *et al.*, 2019). Finger millet has superior keeping qualities than other minor cereals since it has a lower fat content, Free lipids, bound lipids, and structural lipids make up the total lipid in finger millet. "It contains considerable amount of phosphorus, potassium, magnesium, calcium, sodium, zinc, iron, manganese, and copper in finger millet.

## Value added products from finger millet

Finger millet grain possesses excellent storage properties and is said to improve in quality with storage. However, a number of studies showed that they are highly valued as a reserve food in times of famine and can be stored without damage of grain. Finger millet is used in the preparation of different foods both in natural and malted forms, like porridge, puddings, pancakes, biscuits, roti, bread, noodles, and other snacks. Besides this, it is also used as a nourishing food for infants when malted and is regarded as wholesome food for diabetic patients. "Both traditional and modern methods are used in processing of grains. The traditional method of the processing can be employed in the manufacture of value-added products such as soaked, cooked, malted, papad, fermented, popped or puffed, extruded and multi-grain flour" (Sood *et al.*, 2017). Multi-grain flour /composite flour, papad, popping, laddu, ragi beverages, ragi idly, noodles, extrude products, biscuits, cakes, halwa, ragi soup, ragi pakoda, vadai, and finger millet chips (Anjali Chandra *et al.*, 2018).

The products made from composite flours are nutritionally superior to their respective controls and can be successfully used for supplementary feeding programmes. Efforts should be made to educate people about the nutritive value and health benefits of finger millet and its food products. Therefore, it is necessary to take steps to increase production and productivity through various improved technologies to meet our requirements in future.

### References

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