



Significance of Millets “The Superfood” in Indian Diet

Anubhav Kumar and Jay Kumar Yadav

Introduction:

One of the oldest traditionally grown grains, millets have been consumed in the Indian subcontinent for at least 7000 years. Millets were once a staple of the Indian diet, but they were all but forgotten for a while. Now, they are making a comeback as a delicious and nutritious super food. Compared to other common cereals, they are robust, rain-fed grains with minimal water and fertility needs. The two main divisions of millets are husked grains and naked grains. The three common millets Ragi, Jowar, and Bajra are referred to as "naked grains" because they lack a tough, inedible husk. After harvest, these millets only need to be cleaned before being utilised; no further processing is required. They are still well-liked and widely cultivated in our country as a result (they are also called major millets because of this reason). The other millets, such as Foxtail Millet (navane), Little Millet (saame), and Kodo Millet (haarka), which have an inedible seed coat, are referred to as "husked grains." Before the grain is fit for human consumption, the husk must be removed. Both of these tasks, as well as the handling of rice, were once performed by hand. However, because the industrialization

of the processing of these little millets lagged behind that of rice and other cereals, they quickly lost favour.

India celebrated 2018 as “The year of Millets” and the Food and agricultural organization (FAO) has declared 2023 as “International year of millets”. People are actively seeking to modify their diets in the midst of the current pandemic, and as a result of restaurant closures and a decline in the accessibility of fast food, everyone is establishing healthier eating routines. Additionally, expert’s advice includes whole grains like wheat, rice, lentils, and pulses into our daily diets. The FSSAI has talked about seven different types of millets, their health advantages, and strategies to incorporate them into the diet in the same context.

Here are the different types of millets:

1. Pearl Millet/Bajra:

The most popular millet, also known as bajra or pearl millet, is a significant crop in India. People eat more than 90% of the pearl millet that is grown. Protein and dietary fibre contents in pearl millets are remarkably high. Iron, magnesium, copper, zinc, vitamin B complex, and vitamin E are all abundant in it.

Additionally, it supports a healthy nervous system and heart. Since it helps burn fat, many people believe bajra is the secret to a small waist. Its alkaline nature aids in overcoming acidity.

Nutrients per 100g: protein (10.96g), carbohydrate (61.78g), fibre (11.49g), iron (6.42mg), calcium (27.35mg), folate (36.11mg), Vit. B3 (0.86mg) and energy (347.99 Kcal).



Fig.1: Pearl millet crop (A) and seed (B)

Benefits:

- Reduce cholesterol
- Promote bone health
- Beneficial in treating stomach ulcers

- Promotes heart health
- Aids in weight loss

Use: Khichdi, roti, upma, idli, khakhra, parathas etc.

2. Sorghum/Jowar

Compared to corn, sorghum has a poorer feed quality (maize). It has a high carbohydrate content, 10% protein, 3.4% fat, and minor levels of calcium, iron, vitamin B1, and niacin. The gluten-free grain is often processed into a meal that is used to make porridge, flatbreads, and cakes for human consumption. Processing can weaken the flavor's characteristic intensity. Additionally, dextrose (a sugar), paste, edible oil, flour, and alcoholic beverages are made from the grain. The stalks are employed as building materials and as animal feed. Sweet sorghums, sometimes known as sorgos, are mostly produced in the United States and southern Africa for forage, to make syrup, and occasionally to make ethyl alcohol for use in biofuel.

Nutrients per 100g: protein (11.30g), carbohydrate (74.60g), fibre (6.30g), iron (4.40mg), Phosphorus (287.00mg), potassium (350.00mg), Vit. B1 (0.20mg), Vit. B2 (0.10mg) and energy (339.00 Kcal).



Fig.2: Sorghum crop (A) and seed (B)

Benefits:

- Sorghum good source of vitamins, minerals and high content of dietary fibres
- Sorghum rich source of antioxidants
- Sorghum helps in inhibiting tumour growth
- Sorghum benefits for diabetes patients
- Sorghum flour safe celiac disease
- Used for lower cholesterol level and promote blood circulation
- Beneficial in treating stomach ulcers
- Aids in weight loss

Use: for gluten-free baking, and can be used to make flatbreads, like injera, quick breads, muffins, pasta, and desserts etc.

3. Finger Millet/Ragi

One of the indigenous millets in India is called finger millet or ragi (2300 BC). Ragi, a traditional cuisine of South India and a gluten-free whole grain, is regarded as the richest source of calcium and to have the highest mineral content. It helps regulate diabetes by lowering blood glucose levels and has antibacterial and anticancer effects. Ragi aids in restoring the health of skin and hair as well as healing damaged muscular tissue. Recent studies suggest that finger millet may lower the risk of cardiovascular illnesses.

Nutrients per 100g: protein (7.16g), carbohydrate (66.82g), fibre (11.18g), iron (4.62mg), calcium (364.00mg), Vit. B3 (1.34mg), folate (34.66mg) and energy (320.75 Kcal).

Benefits:

- Reduce blood cholesterol level
- Anti-microbial properties
- Promote bone health
- Revive skin and hair health
- Repair injured muscle tissues

Use: Use for making roti, Dosa, cheela, cookies, cakes, porridges and upma etc.



Fig.3: Finger millet crop (A) and seed (B)

4. Amaranth/Ramdana

Amaranth is a grain that's high in calcium and protein that experts advise eating. It contains a lot of dietary fibre and a lot of protein (13–14% protein). Magnesium, phosphorus, potassium, calcium, iron, and magnesium are all abundant in amaranth grain. It assists in lowering blood cholesterol levels and lowers the risk of anaemia, osteoporosis, and other blood disorders. Additionally, it aids in boosting the immunological system.

Nutrients per 100g: protein (14.59g), carbohydrate (59.98g), fibre (7.02g), iron

(9.33mg), calcium (181.00mg), folate (27.44mg), Vit. B3 (0.45mg) and energy (356.11 Kcal).



Fig.3: Amaranth crop (A) and seed (B)

Benefits:

- Helps in decreasing blood cholesterol level
- Stimulate the immune system
- Reduce risk of osteoporosis
- Reduce anemia

- Anti-allergic and anti-oxidant properties

Use: Flour, tikkis, salads, cupcakes, cookies, chikki and laddoo etc.

5. Buckwheat Millet/Kuttu

Polyunsaturated fatty acids and carbs are both abundant in buckwheat millet. It is a good source of potassium, magnesium, folate, and calcium and has higher levels of zinc, copper, and manganese than other cereal grains. It aids in blood pressure reduction, blood sugar regulation, cardiovascular health improvement, and blood pressure control. It also helps people lose weight. During Navaratri, this grain is very popular.



Fig.1: Buckwheat millet crop (A) and seed (B)

Nutrients per 100g: protein (3.38g), carbohydrate (19.90g), fibre (2.70g), iron (0.80mg), calcium (7.00mg), folate (14.00mg), potassium (88.00mg), magnesium (51.00mg), Vit. B3 (0.94mg) and energy (92.01Kcal).

Benefits:

- Helps in weight loosing
- Helps in lowering blood pressure and improving cardiovascular health
- Having low glycemic index helps in improving blood sugar control

Use: Khichdi, chapaties, dosas, puri, laddoo, sandwich, halwa, cutlets and cheela etc.

6. Barnyard Millet/Sanwa

The highest source of both soluble and insoluble crude fibre (7.72%) and iron is reportedly found in barnyard millet. It is gluten-free and contains antioxidant, antimutagenic, and anti-inflammatory effects.

Nutrients per 100g: protein (10.13g), carbohydrate (65.55g), fibre (7.72g), Vit. B3 (4.20mg) and energy (346.31 Kcal).

Benefits:

- Rich source of fibre, both soluble and insoluble
- Gluten free and healthy option when suffering with celiac disease

- Anti-mutagenic, anti-inflammatory, and anti-oxidant properties

Use: Porridge, chapatis, khichdi, upma, payasam and pulao etc.



Fig.1: Barnyard Millet millet crop (A) and seed (B)

7. Foxtail Millet/Kakum

It is commonly known that foxtail millet helps to maintain healthy hair, skin, and hearts. It is one of the most easily digested and non-allergic grains, and it is also strong in carbs. In comparison to rice, it has twice as much protein, or 12.3% of the total weight. It

aids in keeping healthy bones and muscles as well as the normal operation of the nervous system. Additionally, it enhances immunity.

Nutrients per 100g: protein (12.30g), carbohydrate (60.09g), Vit. B3 (3.20mg) and energy (79.11 Kcal).



Fig.1: Foxtail millet crop (A) and seed (B)

Benefits:

- Helps in proper functioning of nervous system
- Maintain bones and muscles healthy
- Good for cardiac health
- Good for skin and hair growth

- Improve immunity

Use: Dosas, breads, cheelas, chapaties, cookies and pancakes etc.

8. Kodo Millets/Kodon

Kodo millet contains a lot of fibre and protein. It aids in maintaining healthy blood sugar levels, avoiding constipation, and boosting the nervous system. It is advantageous for postmenopausal ladies with any metabolic illnesses.

Nutrients per 100g: protein (8.92g), carbohydrate (66.19g), fibre (6.39g), iron (2.34mg), calcium (15.27mg), folate (39.49mg), Vit. B3 (1.49mg) and energy (331.74 Kcal).



Fig.1: Kodo millet crop (A) and seed (B)

Benefits:

- Helps in blood sugar level control
- Prevents constipation
- Strengthens nervous system
- Beneficial for postmenopausal women suffering from any metabolic disease

Use: Porridge, chapatis, khichdi, cheela, idli, dal and pulao etc.

Conclusion:

Millets are easy for the body to absorb because they are very nutrient-dense, high in fibre, and gluten-free. They contain a wide variety of micronutrients, including as calcium, iron, phosphorus, and many others. Millets aid in preventing and managing diabetes since they are slow-digesting foods that don't result in the dramatic rise in blood sugar that eating polished rice does. Idealistically, millets ought to be a staple of your everyday diet. They enrich your food with diversity and balance. All of your dishes can use them in place of white rice. Millets can be added to rice to start, and then gradually one meal a day can be made from millet. Some people have discovered great advantages, particularly with regard to weight control. The millet grains are processed into flours to make foods like porridge, puddings, pancakes,

cookies, roti, bread, and other snacks⁶. When malted, it is recognised as a healthy food for diabetic people and is used as a nourishing food for infants.

References:

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Anubhav Kumar, Assistant Professor, CSA Univ. of Ag. & Tech. Kanpur (UP), India

Jay Kumar Yadav, Scientist, Krishi Vigyan Kendra, Dhaura, Unnoa (UP), India