

3. Medicinal and Nutritional Values of Millets: A Review

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Abstract:

Millets are a traditional grain because of their nutritional and therapeutic qualities. The Asian region is the primary location for millets cultivation and consumption. Millets are small-grained members of the grass family that thrive in warm climates. Grains that can withstand a wide range of weather conditions are millets. They supply the nutrients needed for the body to function physiologically. Based on grain size, millets are divided into two categories: Major Millets and Minor Millets. Millets are rich in fibre, protein, fat, and carbs. Compared to other fine cereals, millets are more nutritious. Additionally, millets provided iron and phosphorus. Because millets contain tannins, polyphenols, phytosterols, and anthocyanins, among other compounds, they have therapeutic values. Millets are used to treat and prevent disorders related to metabolism.

Keywords:

Millets, Nutritional values, Medicinal values

3.1 Introduction:

Millets are gluten-free, non-allergenic grains that are a great source of nutrients. In terms of medicine, millet lowers inflammation and triglycerides, which helps to avert cardiovascular disease. In addition to providing dietary fibre, millets lower the risk of inflammatory bowel disease and aids in the body's detoxification.

3.2 Major and Minor Millets:

- a. **Major millets:** These are widely cultivated and widely available to farmers. They are easy to grow and only need the right quantity of watering. Two examples are pearl millet and fox tail millet.
- b. **Minor millets:** Another species of nutrient-rich seed-bearing plants that are

primarily grown for fodder are called minor millets. Because of their high nutritional content, they require the proper

water and harvesting tools to survive; examples of these include barnyard millet and little millet.

Ayurveda called foxtail millet *Trundhanya*, *Kudhnya*, or *Kshudradhanya*, described it as sweet with an astringent taste. It balances the Pitta and Kapha Doshas and raises Vatadosha, according to Ayurveda.

They are called millets in Ayurveda. Because of its high nutritional content and easy digestion, Rishimunis used to eat it; hence, in *Nighantu Aadarsha*, it was known as *Munidhanya*. Millets, such as Sawa, Kutki, Kuttu, Chaulai, Ragi/Mandua, Ragi/Bajra, and Kanngani/kakun, are among them.

Millets are grown for their edible small seeds, which are part of the family Poaceae, which includes several species of coarse cereal grasses. Millets are a good source of protein and phytochemicals and are regarded as dietary fibre.

3.3 The Nutritional Compositions of Millets:

Additionally, it has cross-linked prolamins, an essential amino acid that helped make the millets more digestible. The low lysine and protein content of millet is one of the reasons for its high biological value. Anthocyanins, phytosterols, polyphenols, and tannins, among others, are significant in metabolic disorders. Millets have antioxidant and anti-aging properties. Potassium, which is found in millet, aids in the transmission of nerve signals and supports renal and cardiac function. Vitamins A, B, C, P, K, Ni, Iron, Calcium, and Niacin are all present in millet.

Table 3.1: Nutritional Compositions of Millets

Sr. No.	Common Millets	Nutritional composition
1	Sorghum (Jowar)	It served as rich source of protein, thiamine, riboflavin, fibre, carotene and folic acid, etc. It also contains phosphorus and potassium, along with sufficient amounts of iron, sodium and zinc. A rich source of calcium and magnesium for improving bone health. It improves blood circulation

Sr. No.	Common Millets	Nutritional composition
2	Pearl Millet (Bajra)	<p>It contains dietary fiber; thus, prevent inflammatory bowel disease, contains proteins and lipids. The niacin is found more than other cereals. Bajra also contains iron, copper, magnesium and zinc. It served as rich source of unsaturated fats. Widely grown in India. Helps in controlling Type 2 Diabetes</p>
3	Finger Millet (Ragi)	<p>The highest source of calcium is found in finger millet, highest mineral content is seen in Ragi, and however it has lower amounts of fat and protein. In brief rich in calcium, protein and iron. It's famous in the Southern part of India. It has antioxidant properties and helps in Type 2 Diabetes. Finger millet grains have good malting capabilities and are well-known for their use as weaning foods. The proteins are distinctive in finger millet due to the sulphur rich amino acid levels. Its antioxidant activity is very high.</p>
4	Foxtail millet (Kakum)	<p>It contains twice as much protein as rice. It offers a variety of nutrients, a pleasant nutty flavour, and is one of the most easily digested and non-allergic grains. It contains minerals like copper and iron. It is a good source of dietary fibre and minerals like copper and iron. It has a low glycemic index and is rich in antioxidants. It helps in controlling cholesterol.</p>
5.	Kodo millets (Kodon)	<p>It has a very high fibre content, low fat and high protein content. The vitamins B found in Kodo millet, including niacin, folic acid and pyridoxin, as well as iron, calcium, potassium, zinc and magnesium, rich in polyphenols and has antioxidant properties. These all constituents make it a food for boosting the neurological system.</p>

Sr. No.	Common Millets	Nutritional composition
6.	Barnyard millet (Sanwa)	The most abundant source of crude fibre and iron is barnyard millet; its grains also include beta-glucan and gamma amino butyric acid, which are antioxidants and helps to lower blood lipid levels.
7.	Kutki/Shavan	Kutki/Shavan is a type of tiny millet; it has a lower grain size than other millets, higher iron content and significant antioxidant activity.
8.	Chenna/Barri (Proso millets)	The most protein is found in proso millet, it contains fatty acids and carbohydrates. It also contains large amounts of calcium, which support bone formation. It served as source of manganese than other traditional sources like spices and nuts. It lowers cholesterol levels and risk of heart disease.
9.	Amaranth, pseudo-millet (Ramdana/Rajgira)	It consists of oil, which is more than most other cereals; high protein content, amino acid that is absent in many other grains. Amaranth oil is high in dietary fiber, magnesium, phosphorus, iron, potassium and calcium. It also contains a peptide and that offers cancer-preventive and antihypertensive properties. Amaranth oil contains unsaturated fatty acids and linoleic. Acid.
10.	Buckwheat (Kuttu)	It is high in the amino acid lysine and contains of protein along with starch. It acts as rich source of vitamins B1, C and E. It contains higher quantities of zinc, manganese, and copper, etc. The bioavailability of these minerals is also relatively high, and it contains polyunsaturated essential fatty acids.

Table 3.2: Millets vs Rice (per 100 gms)

	Millets	Rice
Calories	119 cal	139 cal
Carbohydrates	23.7 gms	28.7 gms
Calcium	3 mg	1 mg

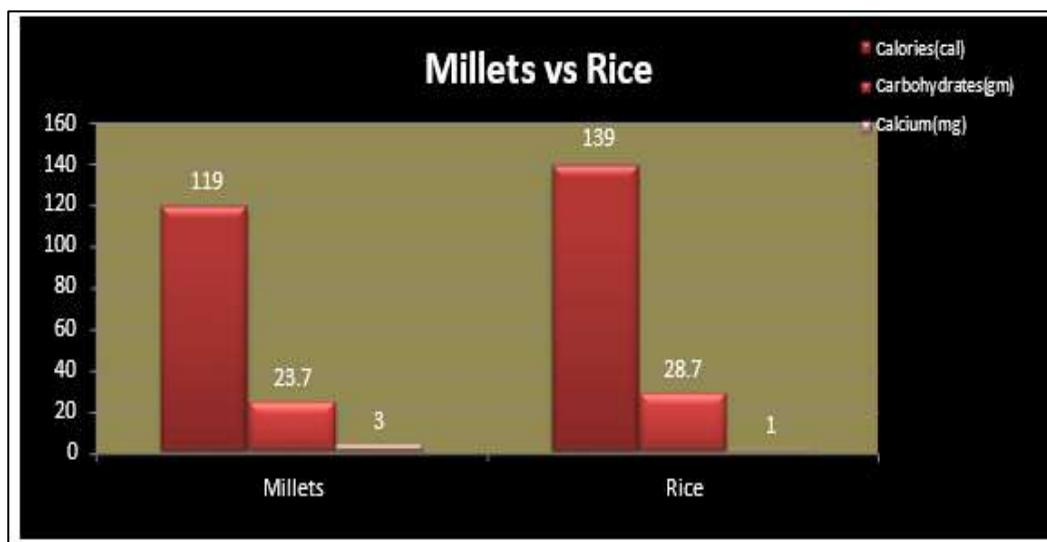


Figure 3.1: Millets vs Rice

3.4 Medicinal Value of Millets: A Review:

A. Medicinal Value of Millets:

- Millets support growth of bones and muscles.
- Millets provide strength to nervous system.
- Prevent biomolecules from oxidative damage.
- Prevent chances of cardiac problems.
- Regulated metabolic activities thus control diseases like diabetes.
- Control level of cholesterol and reduces cases of fatty liver.
- Promotes digestion thus resist complication of constipation and other digestive problems.
- Boost immunity and nourishes body due to its nutrients value.

B. Ealth Benefits of Millets:

- Millets are easily available and easy to store.
- They are gluten-free, ideal for Celiac disease. It aids in weight loss.
- It has a low glycemic index, is beneficial for lowering blood sugar levels and therefore controls diabetes, insulin resistance and hyperlipidemia.
- It acts as a prebiotic to feed important microflora and help in improving overall gut health and easy to digest.
- Rich in antioxidants and improves immunity. It helps in lowering the risk of cardiovascular diseases and brings down incidents of colon cancer and gastrointestinal disorders.
- Eliminates problems like constipation, gas, bloating and cramping

3.5 Conclusion:

Millets are a wholesome, gluten-free grains. They are abundant in micronutrients, such as calcium, phosphorus, and iron. As a dietary fibre, millets absorb water and give the body bulk. It aids in bodily cleansing and reduces the risk of bowel disease. Millets have anti-acidic properties, lower blood pressure, prevent type 2 diabetes, and lower the risk of colon cancer.

Jowar, Bajra, Ragi/Mandua, Kanngani/kakun, Sawa, Kutki, Kuttu, Chaulai are examples of millets. They offer fibres, carbs, protein, and fat, among other things. Because millets contain anthocyanins, polyphenols, phytosterols, tannins, and other compounds, they have medicinal qualities. Because millets contain calcium, they promote bone growth. Millets have the potential to be antioxidants, which wards against oxidative damage. Metabolic disorders such as obesity and diabetes are prevented by millets. Millets are helpful for digestive problems and nourishes body.

3.6 References:

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