



Agri Articles

(e-Magazine for Agricultural Articles)

Volume: 03, Issue: 02 (MAR-APR, 2023)

Available online at <http://www.agriarticles.com>

© Agri Articles, ISSN: 2582-9882

Millets: The Indigenous Food

(*Vivek Kumar Yadav and Saurabh Kumar Sinha)

Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya, Chitrakoot, Satna, M. P.

*Corresponding Author's email: vivekydv021@gmail.com

Millets are traditional grains, grown and consumed in the Indian subcontinent from the past more than 5000 years. Millets are small - grained, annual, warm - weather cereals belonging to grass family. They are rain - fed, hardy grains which have low requirements of water and fertility when compared to other popular cereals. They are highly tolerant to drought and other extreme weather conditions.

Millets are nutri cereals comprising of sorghum, pearl millet, finger millet (Major millets) foxtail, little, kodo, proso and barnyard millet (minor millets). These are one of the oldest foods known to humanity. These are one of the several species of coarse cereal grasses in the family poaceae, cultivated for their small edible seeds. Pseudo millets are so called because they are not part of the Poaceae botanical family, to which 'true' grains belong, however they are nutritionally similar and used in similar ways to 'true' grains.

Millets are highly nutritious, non-glutinous and non acid forming foods. Millets have many nutraceutical and health promoting properties especially the high fiber content. Millets act as a probiotic feeding for micro - flora in our inner ecosystem. Millets hydrate our colon to keep us from being constipated. Niacin in millet can help lower cholesterol. Millets contain major and minor nutrients in good amount along with dietary fiber. Millets are gluten free and can be a substitute for wheat or gluten containing grains for celiac patients.

Millets and the History

Millets are a group of highly variable small-seeded grasses, widely grown around the world as cereal crops or grains for human food and as fodder. There is evidence of the cultivation of millet in the Korean Peninsula dating to the Middle Jeulmun Pottery Period (around 3,500–2,000BC). In India, millets have been mentioned in some of the oldest Yajurveda texts, identifying foxtail millet (*priyangava*), Barnyard millet (*aanava*) and black finger millet (*shyaamaka*), thus indicating that millet consumption was very common, pre-dating to the Indian Bronze Age (4,500BC).

Even until 50 years ago millets was the major grain grown in India. From a staple food and integral part of local food cultures, just like many other things, millets have come to be looked down upon by modern urban consumers as “coarse grains” – something that their village ancestors may have lived on, but that they had left behind and exchanged for a more “refined” diet. Unfortunately, this said refined diet lacks the nutrients critically important for us (food should be as local and wholesome as possible).

What happened?

Following the western model of development, India and other developing nations have lost out on a lot of useful and meaningful things. Food habits have been one of the biggest changes. We are quickly forgetting our indigenous foods and chasing standardization. Millets too have been discarded as being too primitive to be used, forgetting the roots.

These changes, coupled with state policies that favour rice and wheat, have led to a sharp decline in millet production and consumption.

Before Green Revolution, millets made up around 40 percent of all cultivated grains (contributing more than wheat and rice). However, since the revolution, the production of rice has increased doubly and wheat production has tripled.

Importance of different types of millets

According to Rohit Jain, Co-founder of Banyan Roots, an organic store selling products at reasonable and sustainable price points, “There are two broad categories of millets, namely major and minor millets. While pearl millet, sorghum, finger millet and foxtail millets come in the category of being the major millets, others such as *sama*, *kodo*, *chinna* etc., are considered minor millets. Many of the minor millets are endangered, as they are getting depleted, and some of them have even totally been eliminated.”

Major Millets

❖ Sorghum (Jowar)

- Major portion of sorghum protein is prolamin (kaffirin) which has a unique feature of lowering digestibility upon cooking which might be a health benefit for certain dietary groups.
- Sorghum proteins upon cooking are significantly less digestible than other cereal proteins, which might be a health benefit for certain dietary groups.
- It is rich in potassium, phosphorus and calcium with sufficient amounts of iron, zinc and sodium.



❖ Pearl Millet (Bajra)

- Pearl millet contains considerably high proportion of proteins (12-16%) as well as lipids (4-6%).
- It contains 11.5% of dietary fiber. It increases transit time of food in the gut. Hence, reduce risk of inflammatory bowel disease.
- The niacin content in pearl millet is higher than all other cereals.
- It also contains folicate, magnesium, iron, copper, zinc and vitamins E and B- complex. It has high energy content compared to other millets.
- It is also rich in calcium and unsaturated fats which are good for health.



❖ Finger Millet (Ragi)

- Finger millet is the richest source of calcium (300-350 mg/100g)
- Ragi has the highest mineral content.
- It contains lower levels of protein (6-8%) and fat (1.5-2%)
- Finger millet proteins are unique because of the sulphur rich amino acid contents.
- The grains have excellent malting properties and are widely known for its use as weaning foods.



Minor Millets

❖ Foxtail millet (Kakum)

- It is high in carbohydrates.
- It has double quantity of protein content compared to rice.
- It contains minerals such as copper & iron.



- It provides a host of nutrients, has a sweet nutty flavour and is considered to be one of the most digestible and non - allergic grains.

❖ **Kodo millets (Kodon)**

- It has high protein content (11%), low fat (4.2%) and very high fibre content (14.3%).
- Kodo millet is rich in B vitamins especially niacin, pyridoxin and folic acid as well as the minerals such as calcium, iron, potassium, magnesium and zinc.
- It contains a high amount of lecithin and is an excellent for strengthening the nervous system.



❖ **Barnyard millet (Sanwa)**

- It is the richest source of crude fiber and iron.
- Its grains possess other functional constituents i.e., Gamma amino butyric acid (GABA) and Beta - glucan, used as antioxidants and in reducing blood lipid levels.



❖ **Little millet (Kutki/Shavan)**

- It is smaller than other millets.
- It is high in iron content.
- It has high antioxidant activities.
- It contains about 38% of dietary fiber.



❖ **Proso millet (Chenna/Barri)**

- Health benefits of proso millet come from its unique properties. It has significant amounts of carbohydrate and fatty acids.
- It contains the highest amount of proteins (12.5%).
- It is cheaper source of manganese as compared to other conventional sources like spices and nuts.
- It contains high amounts of calcium which is essential for bone growth and maintenance.
- It reduces cholesterol levels and also reduce the risk of heart diseases



Pseudo Millets

❖ **Buckwheat (Kuttu)**

- It contains protein 13-15% protein and rich in the amino acid lysine.
- Rich in carbohydrates (mainly starch).
- Contains vitamins B1, C and E.
- Rich in polyunsaturated essential fatty acids, such as linoleic acid.
- Contains higher levels of zinc, copper, and manganese than other cereal grains, and the bioavailability of these minerals is also quite high.



Each millet has an importance of its own. We should also remember that we should not mix millets and should only eat one grain in a meal as each grain has its own requirement as the medium for digestion and mixing them can create imbalances in body.

Some important points regarding millets

- Due to its high resistance against harsh conditions, millets are sustainable to the environment, to the farmer growing it, and provide cheap & high nutrient options for all.

- Nearly 40 percent of the food produced in India is wasted every year.. Millets do not get destroyed easily, and some of the millets are good for consumption even after 10-12 years of growing, thus providing food security, and playing an important role in keeping a check on food wastage.
- Millet is fibrous in content, has magnesium, Niacin (Vitamin B3), is gluten-free and has a high protein content.

Steps taken by government to Increase Millet Production

- 1) To boost the use of millets, the government has also taken a number of steps in this regard. Farmers will get a direct payment of 40 rupee per quintal of millet production.
- 2) It has been announced that farmers growing millets on rain fed areas will get 75 rupees per quintal over and above the MSP.
- 3) The government had also launched the National Programme for Cultivation and Development of Millets (NP-CMDM).
- 4) It has also launched Rashtriya Krishi Vikas Yojana (RKVY), which aims to make India self-sufficient in food grains with increasing productivity of non-basmati rice, pulses and oil seeds

Why one should eat millets?

Millets are gluten-free, highly nutritious and rich in dietary fiber. They are rich in micronutrients, including calcium, iron, phosphorus, etc. They are low in Glycemic Index (GI) as such don't cause huge spike in blood sugar. Millets should ideally be an integral part of our daily diet. Dietary fiber in millets has water absorbing and bulking property. It increases transit time of food in the gut which helps in reducing risk of inflammatory bowel disease and acts as detoxifying agent in the body.

What are the Health benefits of Millets?

- Millets are anti acidic;
- Millets are gluten free;
- Helps to prevent type 2 diabetes;
- Effective in reducing blood pressure;
- Reduces risk of gastrointestinal conditions like gastric ulcers or colon cancer;
- Eliminate problems like constipation, excess gas, bloating and cramping;
- Millet act as a probiotic feeding micro flora in our inner ecosystem.

Conclusion

Millets are a type of grain that provides various health benefits to the body by containing vitamins and minerals. Also, it is rich in dietary fiber, which helps to keep the digestive system healthy. It can also be used as a good substitute for rice and wheat. This is why it is considered as one of the best grains for weight loss in India. Initially, millets were thought to be inferior to other cereals such as wheat or rice because they contain less gluten and are considered easy to digest. But some studies show that millets are beneficial as they contain essential nutrients such as proteins, amino acids, insoluble fibre etc that leads to better health and weight loss.

References

1. Adekunle A, Lyew D, Orsat V, Ragavan V. Helping Agribusiness- Small Millets Value Chain- to Grow in India. Agriculture. 2018;8(44):1-11.
2. Chapke RR, Prabhakar SG, Das IK, Tonapi VA. Improved millets production technologies and their impact. Technology Bulletin, ICAR-Indian Institute of Millets Research, Hyderabad 500 030, India, 2018, 84p. ISBN: 81-89335-69-3.