Agri Articles
(e-Magazine for Agricultural Articles)
Volume: 04, Issue: 01 (JAN-FEB, 2024)
Available online at http://www.agriarticles.com
©Agri Articles, ISSN: 2582-9882

Millet: Mitigate Food Hunger of India

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Millets are termed as "yesterday's coarse grains and today's nutri-cereals." Millets are considered to be "future crops". Millet is a drought-tolerant crop that can be grown in dry, arid climates where other crops would fail. It is also a nutritious grain that is high in fiber and essential minerals. For these reasons, millet will continue to be an important food crop in the years to come. Millet is a low maintenance and drought-resistant grain. This grain provides various health benefits, such as protecting heart health, and helping to maintain a healthy weight. People have benefited from the nutritional properties of millet for thousands of years. The Old Testament of the Bible mentions it, as do texts from ancient Greece and Rome. Millets is the collective term for cereal species that have small or tiny grains. They are mostly cultivated in developing countries and are notably hardy, withstanding high temperatures and drought. Overall, the macro- and micronutrient composition of millets is similar to other cereals. Millets have important health benefits. They are gluten-free and rich in phenolic phytochemicals. Worldwide, millets are processed into many traditional and modern-type foods and beverages.

Millet grows extremely quickly and matures in almost half the time required for rice and wheat. This makes it the ideal crop, contributing to its rapid spread across Asia and into Europe. Millet is now the sixth most important cereal grain in the world. In the contemporary United States, millet is often used to feed pets, livestock, and birds, but it is growing in consumer popularity. This is because it is gluten free and a good source of protein, fiber, micronutrients. It also provides multiple benefits to physical and mental health, requires few inputs to grow, and is resistant to drought.

Millet is an ancient grain that people have enjoyed for thousands of years. Millet is also food for livestock and birds. It is becoming increasingly popular as it is fast-growing, drought-resistant, and requires low input. Millets are a highly nutritious crop and contain considerable amounts of vitamins and minerals. Millet is a good source of protein, fiber, key vitamins, and minerals. The potential health benefits of millet include protecting cardiovascular health, preventing the onset of diabetes, helping people achieve and maintain a healthy weight, and managing inflammation in the gut.

Millet is an adaptable grain. There are many simple ways to prepare it, making it easy for people with celiac disease to include this gluten-free grain in their diets. Milling, fermentation, malting, and thermal treatments are applied, which can substantially affect food compositon both positively and negatively. High levels of flavonoid-type phenolics in millets regular consumption of millet foods could help prevent type two diabetes and cardiovascular disease, however, better human-subject studies data are needed. Developments in agriculture and food technology are also required to improve the palatability of millet foods and to make them more available

General key points about Millet

1. Most of millet crops are native of India and are group of small grained cereal food crops which are highly nutritious.
2. Millets are popularly known as Nutri-cereals as they provide most of the nutrients required for normal functioning of human body.
3. Millets are Gluten free and good for people who are gluten-intolerant.
4. Prefer to buy Multi grain processed food products like Multigrain Atta, Multigrain Biscuits, Multigrain Bread etc having millets as one of the ingredient.
5. Don't buy, if odour is unpleasant and taste is bitter or gritty. Avoid millets if living or dead insects are visible in the product.
6. Prefer millets in packed form and certified under AGMARK.
7. Check FSSAI license number on the package label.
8. Always read the manufacturing/ packaging date and best before date before buying.
9. Look for FSSAI Organic logo (Jaivik Bharat) on the pack while buying organic food products.

Nutrients in Millets

Each 100 gram (g) of cooked millet containsTrusted Source the following:

1. Protein- 3.51 gram.
2. Carbohydrate- 23.7 gram.
3. Dietary Fiber- 1.3 gram.
4. Magnesium- 44 milligrams (mg)
5. Copper- 0.161 mg
6. Phosphorus- 100 mg
7. Manganese- 0.272 mg

Types of Millets

Major millet	Miner millet	Pseudo millet
Sorghum (Jowar)	Foxtail millet (Kakum)	Amaranth(Ramdana/ Rajgira)
Pearl Millet (Bajra)	Kodo millets (Kodon)	Buckwheat (Kuttu)
Finger Millet (Ragi)	Barnyard millet (Sanwa)	
	Little millet (Kutki/Shavan)	
	Proso millet (Chenna/Barri)	

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. It is rich in potassium, phosphorus and calcium with sufficient amounts of iron, zinc and sodium.

Pearl Millet (Bajra):- 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 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):- Ragi has the highest mineral content. 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. It has high antioxidant activity.

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):- 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 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
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. High in soluble fibre. A rich source of polyphenol compounds. Contains rutin, a bioflavonoid thought to help control blood pressure and possess anti - inflammatory and anti - carcinogenic properties.
Amaranth (Ramdana/ Rajgira):- Amaranaths has high protein content (13-14%) and a carrier of lysine, an amono acid that's missing or negligible in many other grains. Consists of 6 to 9% of oil which is higher than most other cereals. Amaranth oil contains approximately 77% unsaturated fatty acids and is high in linoleic acid. It is high in dietary fibre. High in iron,magnesium, phosphorus, potassium and appreciable amounts of calcium. A rich dietary source of phytosteriols, with cholesterol - lowering properties. Contains a lunasin - like peptide and other bioactive peptides which are thought to have cancer - preventive and antihypertensive properties.

Health Benefits of Millet

1). Helping the Digestive System:- Millet contains fiber, which contributes to digestive health and helps to regulate bowel movements. Millet also has prebiotics, which stimulate the growth of probiotics within the microbiome. This is important for gut health and the immune system in general. Millet is very helpfulTrusted Source for people with celiac disease or gluten intolerance because it is gluten-free. People with celiac disease can eat this grain, which is nutrient-rich and high in protein and fiber, without risk of discomfort.
2). Supporting the Cardiovascular System:- Millet contains magnesium, which helps to regulate heart rhythm. Consuming millet may alsoTrusted Source elevate levels of the protein adiponectin, which can protect cardiovascular tissues. Millet also contains vitamin B3 or niacin. This vitamin helps reduce certain factors of heart disease, such as high levels of cholesterol and triglycerides, and is effective in lowering oxidative stress.
3). Improving mood:- Millet can improve a person's mood due to the high concentration of the amino acid, tryptophan. When diet is rich in tryptophan can reduce symptoms of depression and anxiety.
4). Reducing the risk of diabetes:- Millet can reduce the risk of developing type 2 diabetes. It also helps manage blood glucose levels in people with diabetes. An increaseTrusted Source in adiponectin concentration may improve insulin sensitivity.
5). Managing Obesity:- Effectiveness of millet consumption in managing obesity and high cholesterol. The results demonstrated that this type of diet reduced BMI and, therefore, can help reduce the degree of overweight and obesity.

6). Reducing oxidative stress:- Oxidative stress may cause various chronic conditions, including neurodegenerative disorders, arthritis, and diabetes. A high-fat diet is also a risk factor for the development of dementia because it increases oxidative stress in the brain. Doctors consider antioxidants important in reducing oxidative damage. Diets rich in antioxidants may protect against oxidative damage.

7). Good Source of Antioxidants:- Millet is a good source of antioxidants, which may help support the body's ability to resist oxidative stress, a factor in illness and aging. Consuming antioxidants could decrease the risk of chronic diseases. The intake of millet could alleviate oxidative stress in the hippocampus and downregulate the expression of Alzheimer's disease.

Other health benefits of millets include:

- Suppressing Cancer Cell Growth
- Promoting Wound Healing
- Maintaining Bone Health
- Supporting Antifungal and Antimicrobial Activity