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Millets

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Abstract

Millets are a group of cereal grains that belong to the _Poaceae_ Family, commonly known as grass family. Millets are easy to cultivate and are called as 'Smart Food'. Production of Millets is independent of chemical fertilizers and attracts fewer pests. Millets are most useful as it is nutritious they are rich in vitamin, proteins, dietary fibres, amino acids and other bioactive compounds. Millet is rich in dietary fiber, both soluble and insoluble. The insoluble fiber in millet is known as a "prebiotic," which means it supports good bacteria in your digestive system.

It's widely consumed In developing countries throughout Africa and Asia. Millets consumption keeps one healthy by providing most of the nutritional supplements to the body & also ensure economic security to the farmers.

Keywords: Food security, Millets climate change, anti-diabetic.

Introduction

Millets are widely grown around the world as cereal crops or grains for fodder and human food. They are also known as 'Smart food' for their easy cultivation and rich in nutritional content. Millets are low in glycemic index and are gluten free. It is good for diabetics and also helps to reduce the risk of cardiovascular diseases in adults. It's very essential for the growth and development of children's

Types of Millets

Major Millets	Minor Millets	Pseudo Millets
•Sorghum (Jowar) • Pearl Millet (Bajra) •Finger Millet (Ragi/Mandua)	•Foxtail Millet (Kangani/Kakun) • Proso Millet (Cheena) • Kodo Millet (Kodo) • Barnyard Millet (Sawa/Sanwa/ Jhangora •Little Millet (Kutki)	• (Buck-wheat (Kuttu) •Ameranthus (Chaulai).

Pearl Millets

Pearl millet (Pennisetum glaucum, P. typhoides, P. tyhpideum, P. americanum) is the most widely grown of all millets.The grain grows on condensed panicles (spiked) 10 to 150 cm in length. Pearl millet has the highest yield potential of all millets under drought and heat stress

Foxtail millet

Foxtail millet (Setaria italica) is also adapted to moderate climates. It produces long, cylindrical or lobed, bristly, condensed panicles. China ranks first in the production of foxtail millet in the world. It is grown there for both food and feed. The crop is also grown in India, Indonesia, the Korean peninsula, and some parts of southern Europe.

Finger Millets

Finger millet (Eleusine coracana), known as ragi in India, is another important staple food in Eastern Africa and in Asia (India, Nepal). It has a slightly higher water requirement than most other millets and is found in cooler, elevated regions up to 2000 metres above sea level. The plant carries several spikes or "fingers" at the top of the stem. The grain is small (1-2 mm in diameter).

Proso or Common millet

Proso or Common millet (Panicum miliaceum) is grown in temperate climates. It is widely cultivated in the Russian Federation, the Ukraine, Kazhakastan, the United States, Argentina and Australia. The plant has open, branching, drooping panicles and is tolerant of a wide range in temperature.

Barnyard millet

(Echinochloa crusgalli, E. colona) is important in the tropics and subtropics of India. It's the fastest growing with a harvesting period of 6 weeks

Little millet

Little millet (Panicum sumatrense iis widely grown in India, Nepal, Pakistan, Sri Lanka, eastern Indonesia and western Myanmar.

Kodo millet

Kodo millet (Paspalum scrobiculatum) is harvested as a wild cereal in Western Africa and India, where it grows abundantly along paths, ditches and low spots. The species was domesticated in India about 3000 years ago.

Climate resilience of Millet

Millets are known as C4 crops, millets have higher efficiency in absorbing and utilising carbon dioxide. Most varieties of Millets are well known for their hardiness and have the capacity to withstand prolonged periods of drought,higher temperatures and still produce grains and fodder.

Millets are generally having both important characteristics ie Thermophilic (can thrive at relatively higher temperature)

and Xerophilic (can produce in limited water input) which are very much necessary in response to climate change.

Millets require less water than rice and wheat. They are resilient and rainfed crops.Going from local to global, the Prime Minister also spoke of the climate resilience of millets. He said millets can grow in adverse climate conditions, need very little water, and can be grown without chemicals. “This means millets protect the health of humans and the land,” he said.

Nutritional security of Millets

Millets are rich in -B vitamins,carotene and notably riboflavin, niacin, and folic acid comparable to rice and wheat. Because they are often the only crops that can be harvested in dry seasons, millets can be a vital food source for populations vulnerable to food insecurity. Millets can contribute to a healthy diet. Millets provide antioxidants, minerals and protein.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.

Prime Minister Narendra Modi said millets can help tackle challenges of global food security as well as diseases arising from bad food habits.

Economic Benefits

Millets are an important crop for small-scale farmers as they require minimal investment and have a low input cost. They also have a high market demand due to their nutritional benefits, making them a lucrative crop for farmers.

Nutritional Information of Millets

Composition of small millets, wheat & rice (for 100 gms)

MILLET	PROTEIN (G)	CARBS (G)	FAT (G)	MINERALS (G)	FIBER (G)	CALCIUM (MG)	PHOSPHORUS (MG)	IRON (G)	ENERGY (KCAL)	THIAMIN (MG)	NIACIN (MG)
Finger	7.3	72	1.3	2.7	3.6	344	283	3.9	336	0.42	1.1
Sorghum	10.4	70.7	3.1	1.2	2	25	222	5.4	329	0.38	4.3
Pearl	11.8	67	4.8	2.2	2.3	43	-	11	363	0.38	2.8
Foxtail	12.3	60.2	4.3	4	6.7	31	290	2.8	351	0.59	3.2
Little	7.7	67	4.7	1.7	7.6	17	220	9.3	329	0.3	3.2
Kodo	8.3	65.9	1.4	2.6	5.2	35	188	1.7	353	0.15	2
Proso	12.5	70.4	1.1	1.9	5.2	8	206	2.9	354	0.41	4.5
Barnyard	6.2	65.5	4.8	3.7	13.6	22	280	18.6	300	0.33	4.2
Paddy Rice	6.8	78.2	0.5	0.6	1	33	160	1.8	362	0.41	4.3
Wheat	11.8	71.2	1.5	1.5	2	30	306	3.5	348	0.41	5.1

100 grams of cooked millet has 119 calories, 23.7 grams of carbohydrates, 1.3 grams of fibre, 3.5 grams of protein.

Conclusion

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 a nutrient-dense, low-carb alternative to traditional grains that can have a variety of health benefits. They are a great source Millets are high in nutrition and dietary fibre. They serve as good source of protein, micronutrients and phytochemicals. The millets contain 7-12% protein, 2-5% fat, 65-75% carbohydrates and 15-20% dietary fibre. The essential amino acid profile of the millet protein is better than various cereals such as maize.of protein, minerals, and dietary fiber, and can be used in a variety of dishes to add nutritional value.

The major millets producing states in India are Rajasthan, Karnataka, Maharashtra, Uttar Pradesh, Haryana, Gujarat, Madhya Pradesh, Tamil Nadu, Andhra Pradesh and Uttarakhand.

Reference

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