

## Millets: The Nutri-Cereals

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### SUMMARY

Globally, billions of people are experiencing food insecurity and malnutrition. The United Nations has set a global target to end hunger by 2030, but we are far from reaching it. Thus, there is a need to transform the food system. One of the ways to reach closer to our goal. Millets are the nutrient-rich cereals that can go a long way in helping India fight malnutrition that affects one third of its children and help in achieving targets of the governments Flagship Poshan Abhiyan. Millet Cultivation is emerging as a feasible alternative. The discussion around millets has been gaining momentum in recent years. Millets are being hailed as ‘Super Crops’ globally. While the production and consumption of millets dates back centuries it is only recently that the Food and Agriculture Organization (FAO) has announced 2023 to be the ‘International Year of the Millets’ under India’s recommendation.

### INTRODUCTION

Millets are a diverse genus of small-seeded grasses that are commonly cultivated as Cereals crops or grains for human and animal nourishment all over the world. Millets are termed as “yesterday’s coarse grains and today’s Nutri-Cereals”. Millets are considered to be “future crops” as they are resistant to most of the pest and diseases and adapt well to the harsh environment of the arid and semi-arid regions of Asia and Africa (especially in India, Mali, Nigeria and Niger) with 97% of millet production happening in developing countries. The most common important for food being sorghum (*Sorghum bicolor* L.), pearl millet (*Pennisetum glaucum*), finger millet (*Eleusine carocana*), teff (*Eragrostis tef*), proso millet (*Panicum miliaceum*), kodo millet (*Paspalum scrobiculatum*), foxtail millet (*Setaria italica*), Little millet (*Panicum sumatrense*) and fonio (*Digitaria exilis*). After decades of negligence, Nutri-Cereals are making a strong comeback in the Indian cereal’s production segment. India dominates the global production of millets with a total share of about 40.62% and an estimated production of about 10.91 million tonnes during 2018-2019.

Although India ranks first in nutri-rich millet production and second in rice and pulses across the global, it also unfortunately ranks second in child malnutrition incidences. India is home to more than one-third of the world’s malnourished children. By contrast, the country has also become a hub for diabetic and overweight populace, putting the country under a double burden of malnutrition. The majority of millets are three to five times more nutritious than most cereals (rice, *Oryza sativa*; wheat, *Triticum aestivum*; maize, *Zea mays*) in terms of vitamins, fiber, proteins and minerals (calcium and iron) and are gluten-free; hence they are known as “super foods”. The nutri-rich millets are the viable solution to reduce the rising incidences of malnutrition and metabolic disorders and can enhance the nutrition and food security of the country. Recently, these grains have been slowly fueling the Start-up revolution to improve nutri-rich food availability and create employment.

### Why Millets are called as Nutri-Cereals ?

Millets are termed as Nutri-Cereals, since they are highly nutritious cereals and contribute substantially for food and nutritional security of the consumers. Millets are powerhouse of nutrition as they are a natural source of iron, zinc, calcium and other nutrients that are essential for curbing the problem of malnutrition in India. Millets are not only superior in nutritional quality as compared to traditional cereal crops (wheat and rice) but they are also very good sources of Carbohydrates, micronutrients and phytochemicals with nutraceutical properties. The Millets contain 7-12% protein, 2-5% fat, 65-75% Carbohydrates and 15-20% dietary fiber. Around 40% of preschool age children are suffering from the anaemia disease due to deficiency of iron in their body. It is also estimated that 250 to 500 thousand children go blind from vitamin A deficiency every year. The consumption of millets can effectively solve the problem of anaemia from the world.

**Why Millets are Miracle/Wonder crops?**

Millets are also referred to as Smart Food, which are good for the consumers, the planet and the farmers. For instance, finger millet has three times the amount of calcium as in milk and most millets have very high levels of iron, zinc, fiber and are gluten-free. Millets can also contribute to addressing some of the largest global issues in unison: poor diet (malnutrition to obesity) environmental issues (climate change, water scarcity and environmental degradation) and rural poverty. They have a low carbon footprint and have the ability to survive and grow in warm climate with very little water. They are climate smart and hence constitute a good risk management strategy for farmers as compared to rice and wheat crops, which require higher quantities of water and fertilizer supplements.

**Why one should eat Millets?**

Millets are gluten free, rich in dietary fiber and highly nutritious. Millets are a rich source of a wide variety of micro-nutrients like calcium, thiamin, magnesium and other elements. The presence of these micro-nutrients supports the immune system and prevents invisible deficiencies. Due to their low glycemic index (GI). Millets don't significantly raise blood sugar levels. Idealistically millets out to be a staple of our daily diet. The dietary fiber in millets helps improve the digestive system's function and has water absorbing and bulking property, regularizing bowel function by managing inflammation in the gut and serves as a cleansing agent for the body. It also helps improve the overall health of other vital organs like the liver and kidney and boosts the immune system.

**Health Benefits of Millets:**

- Millets are gluten-free and non-allergenic.
- Millets reduces the amount of bad cholesterol in blood.
- Millets prevents type 2 diabetes.
- Millets are effective in reducing blood pressure.
- Millets reduces risk of gastrointestinal conditions like gastric ulcers or colon cancer.
- Millets eliminates problems like constipation, excess gas, bloating and cramping.
- Millets helps to optimize kidney, liver and immune system health.
- Millets preventing cardiovascular disease.

**Benefits of cultivation of millets:**

The cultivation of millets requires less maintenance. It is less susceptible to pests and diseases as compared to traditional crops like wheat and rice. The cultivation of millets requires less irrigation water. The market demand of millets is increasing as people are becoming health conscious and are getting aware of the nutritional benefits from millets. Millets can withstand high temperatures. Thus, millets can be grown in dryland areas where other high yielding crops like wheat and rice cannot be grown. Millets are short duration crops.

**Cause of Reduction in Millets Cultivation:**

According to the ministry of Agriculture and farmer's welfare, in 2016-2017, the area under millets stood at 14.72 million hectares (60% less coverage area) down from 37 million hectares in 1965-1966, prior to the green revolution. This decline was largely due to lack of input subsidies and price incentives, difficulty in processing, low shelf life of flour, low social status attached to millets, change in consumption pattern, low yield and less demand and conversion of irrigated area for cultivation of rice and wheat.

**Objectives of International Year of Millets:**

Millets are important staple crops that have entered the diet of millions of people and currently their production is declining. They can be grown in soils that are not fertile and with no or even lesser inputs than what is required for other cereals. The downsides need to be addressed, particularly in regions that are threatened by climatic change. The proposal of International Year of Millets would lead to increase in the global production of millets, efficient processing and consumption, better utilization of crop rotations, address trade challenges and encourage better connectivity throughout food systems to promote millets as a key component of the food basket and to ensure sustainable food and nutritional security through climate-resilient agriculture.

**Recent News:**

- Recently, The Food and Agriculture Organization has announced 2023 to be the 'International Year of Millets' (IYOM) under India's recommendation.
- Now, Government of India (GOI) has decided to celebrate IYOM, 2023 to make it people's movement so that the Indian millets, recipes value added products are accepted globally.
- According to Indian Council of Agricultural Research, Millet's versatility in Multipurpose use, stress adaptation and nutritive value makes them even more important crops in the era of extreme climate variability and the crop is favored due to its productivity and short growing season under dry, high temperature conditions. Cultivation of millets require less water than rice and wheat which makes them suitable for small growers.

**Future Outlook:**

Millets are the 'Marvel grains' of the future as they are drought resistant which need few external inputs. Due to its high resistance against harsh conditions, millets are sustainable to the environment, to the farmer growing it and provide cheap and high nutrient options for all. Recently, Due to increase in demand of nutri-cereal smart food. The food business is expanding quickly, due to health and wellness sector is driving this demand. As a result, it will help farmers to raising incomes, developing crop diversification and preserving agrobiodiversity.

**CONCLUSION**

Nutri-Cereals have tremendous potential to eradicate the malnutrition from India. It is the need of the hour to promote and popularize the importance of these nutrient rich millets. Further, create awareness among people to adopt and consume the nutri-cereals for the better health benefits. Increase in production and consumption of these nutri-cereals or wonder crops help India free from malnutrition. One way to double farm incomes and encourage farm diversification is to make millet production attractive by introducing millet cultivation in areas where farmer's distress is visible. Dedicated programmes with proper training and capacity-building initiatives that urge farmer's to move away from loss-making crops toward diversification via millets can be a timely method to pull farmers away from the region's distress. The Main objective of this study is to help people recognize the importance of food and to introduce millets as a nutritious food, fulfilling the nutritional requirement of the global population.

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