

Promoting Millets: A Journey to Food and Health Security

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Introduction

In Indian agriculture, millet holds significant importance, having been cultivated for thousands of years. The word "millet" refers to a group of small-seeded grasses in the Poaceae family, including sorghum, finger millet, pearl millet, foxtail millet, and little millet, that are mostly grown as grain crops on marginal land in arid regions. With regard to food security, nutrition, cultural importance, livelihoods, and environmental sustainability, it is a crucial crop for Indian agriculture and society. The only crop that will help with future food, fuel, malnutrition, health, and climate change concerns is millets. Millets grow well in poor soil because they are suited to a variety of ecological situations that require less water and other inputs. There are nine types of Millets grown in India. The major millets are Sorghum, Pearl Millet, and Finger Millet covering 95% of the total millet growing area in India and the rest 5% are Little Millet, Foxtail Millet, Barnyard Millet, Proso Millet, Kodo Millet, and Brown top Millet.

Importance of growing millets

Nutritional Importance of Millets

Now referred to as Nutri-Cereals, millet is the nutritional storehouse. When it comes to nutrition and health advantages, millets are special. Thus, millet is a miracle food. The grain with the highest iron content is pearl millet. It can treat anaemia in India and contains 4 to 8 mg per 100 gm of grain. It is advised for expectant mothers and is also high in zinc and folic acid. Protein in pearl millet is double that of milk.

The potential of millets for treating and decreasing diabetes has been sufficiently demonstrated by the results of the current systematic review and meta-analysis of millets. Millets' low glycaemic index aids in the control of diabetes. The grain known as "Ragi" finger millet has the highest calcium concentration, containing approximately 364 mg per 100 grammes. Three times as much calcium as milk is in it. The strong bones and teeth are maintained by this calcium-rich grain.

Rich in dietary fiber, millets facilitate digestion and ward off constipation. Three times as much dietary fibre as wheat, maize, and ten times more than

rice is found in kodo millet. Millets' high fiber content functions as a pre-biotic, supporting the maintenance of a balanced gut flora. Millets are excellent for those with celiac disease and are completely gluten-free. Antioxidants included in millets shield our cells from harmful free radicals.



Fig. 1. Some of the cultivated millets in India

Millets have been shown in a recent study to lower the risk of cardiovascular disease. Losing weight is aided by millets. Millets provide unique nutrients that aid in weight loss, such as tryptophan, policosanols, and dietary fibre.

Importance of Millets in the Indian Agriculture Sector

Apart from health benefits, millets are resilient to climate change as they are adapted to a wide range of temperatures, and moisture regimes, and demand less input to grow. They are hardy crops that have low carbon & water footprints. It can sustain drought and even 350-400 mm of rainfall is sufficient for millets. Millets grow faster, putting less stress on the environment.

The United Nations General Assembly adopted a resolution declaring 2023 as the International Year of Millets, as proposed by India to the Food and Agriculture Organization and the primary aim of this initiative is to increase the awareness of millets' health benefits among the people and their suitability for cultivation under tough conditions marked by climate change.

Importance of millets in the context of Climate Change

- In rice production, temperature increases are predicted to reduce rice yields. So, there is a need to consider adaptive measures to cope with changing agricultural patterns. Due to climate change, there is a decline in yield leading to food insecurity, more attacks of pests and diseases, soil degradation, change in crop schedules, and desertification. Considering, millets as an alternative crop is a better choice and we can say it is the future crop.
- Millets are C₄ carbon sequestering crops contributing to the reduction of CO₂ in the atmosphere.
- Millets have a shallow root system and require minimal fertilizers, making them an environmentally friendly crop. They also act as a natural barrier against soil erosion, and their short growth cycle allows for crop rotation, which helps in maintaining soil health helping in Ecological Benefits.

Importance of millets in the Economics

- 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.
- To promote the cultivation of millets in India, the government has launched several initiatives such as the Millets Mission, which aims to increase the production and consumption of millets.
- Additionally, good farming systems for millets include inter-cropping with legumes, crop rotation, and the use of organic farming practices. These systems help in maintaining

soil health, increasing yield, and reducing pest and disease infestations.

What are challenges in marketing and scaling up millet production

While there is growing interest in millets in India, there are still several challenges in marketing and scaling up millet production. Here are some of the main challenges:

- **Limited awareness and demand:** While there is a growing awareness of the health benefits of millet's, many consumers are still not familiar with millet's and do not know how to cook or consume them. This limits the demand for millet-based products and makes it difficult for farmers to sell their produce.
- **Lack of processing and storage infrastructure:** There is a lack of processing and storage infrastructure for millets, which makes it difficult for farmers to process and package their produce. This limits their ability to add value to their produce and sell it at higher prices.
- **Limited market access:** Millet farmers often face limited market access, particularly in remote and rural areas. This can lead to low prices and limited demand for their produce.
- **Low productivity:** Millet productivity in India is often low due to a lack of access to quality seeds, fertilizers, and other inputs. This can limit the ability of farmers to scale up production and meet market demand.
- **Climate change:** Climate change is affecting millet production in India, particularly in areas that are already prone to drought and other weather extremes. This can lead to lower yields and quality, making it more difficult to market and sell millets.
- To address these challenges, there is a need for greater investment in millet processing and storage infrastructure, as well as efforts to raise awareness of the health benefits of millets among consumers.
- Additionally, there is a need for better access to quality seeds, fertilizers, and other inputs to improve millet productivity and scale up production. Finally, there is a need to develop new market linkages and value chains to help

millet farmers access markets and sell their produce at higher prices.

Conclusion

Millet has played an important role in Indian agriculture and society for thousands of years. It is

environmentally sustainable and can help to protect soil health, reduce water usage, and improve biodiversity. Millet is a low-input crop that requires minimal fertilizers and pesticides, making it a more environmentally friendly alternative to other crops.

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