



Millets' Contribution to India's Nutrition Security and Health

Javed¹, Syed Kulsoom Fatima Jafri¹, Raja Bhaiya^{1*}, Mohd Yahya², Avneesh Kumar³

Abstract:-

India's food security has traditionally relied heavily on rice, followed by wheat. However, there is now a growing focus on nutritional security, leading to the increasing importance of millets as a vital source of nutrition. Millets are rich in macro and micronutrients, vitamins, minerals, and antioxidants. As a result, they have the potential to become popular in developing countries for treating various diseases, providing essential nutrients, and meeting food demands, particularly in India. Millets thrive in adverse climatic conditions and are primarily cultivated in rained regions, which constitute a significant portion of India's agricultural landscape.

Keywords: food demand, millets, nutritional security

Introduction:

Millet refers to a group of small-grained cereal grasses that encompass major varieties such as sorghum (cholan), pearl millet (cumbu), and finger millet (ragi), as well as minor types like barnyard millet (kudhiraivali), foxtail millet (thenai), kodo millet (varagu), proso millet (panivaragu), and little millet (samai). These grains are often termed "nutri-grains" due to their rich content of micronutrients, minerals, and B-complex vitamins. They are believed to have beneficial effects in managing diabetes, aging, cancer, celiac disease, and cardiovascular diseases,

owing to their abundant health-promoting phytochemicals. Millets are increasingly recognized as functional foods and can be cultivated alongside vegetables and pulses in mixed cropping systems.

Despite India being the largest producer and consumer of millets globally, accounting for over 40% of global consumption, millets have not received the attention they deserve in national food and agricultural policies. However, they hold great promise for ensuring not only food security but also nutritional security in India, particularly because they thrive in rainfed regions.

Javed¹, Syed Kulsoom Fatima Jafri¹, Raja Bhaiya^{1}, Mohd Yahya², Avneesh Kumar³*

¹Research Scholar, Dep. of Genetics and Plant Breeding, Acharya Narendra Deva University of Agriculture and Technology, Kumarganj, Ayodhya, U.P.

²Research Scholar, Dep. of Entomology, Acharya Narendra Deva University of Agriculture and Technology, Kumarganj, Ayodhya, U.P.

³Dep. of Seed Science & Technology, Acharya Narendra Deva University of Agriculture and Technology, Kumarganj, Ayodhya, U.P.

Approximately 60% of India's cultivated lands are rainfed, making millets a suitable crop due to their unique molecular, biochemical, and morpho-physiological traits that enable them to withstand harsh environmental conditions such as drought and poor soil quality.

Millets possess several advantages over common cereal crops, including their efficient use of water and nitrogen, their ability to withstand high light, high temperatures, and dry weather, and their C₄ photosynthetic potential. Despite these benefits, the area dedicated to millet cultivation in pure stands remains limited. Recognizing their potential, efforts are underway to revive millets in India, culminating in the declaration of 2023 as the International Year of Millets. This initiative aims to raise global awareness about the benefits of millets and promote their cultivation and consumption worldwide.

Millets: An approach for sustainable and healthy nutrition

Millets, which have long been a traditional staple crop for millions of farmers, especially in India, China, and Nigeria. Millets are equivalent or superior than other major cereal grains in terms of nutrients. The additional advantages of millets are their high fibre content, low glycaemic index and richness in bioactive chemicals, making them an ideal health food. The average protein

content of millets 10-11% except finger millet that contains in the range of 4.76 to 11.70 g/100 g. Millets are rich in β -carotene and B vitamins, notably riboflavin, niacin, and folic acid comparable to rice and wheat. It has antioxidant properties that enable them to provide a balanced diet and are very nutritious. Foxtail millet has the highest thiamine concentration with 0.60 mg/100 g. The riboflavin level of millets is several times higher than the staple cereals, with barnyard millet having highest content of riboflavin as 4.20 mg/100 g) followed by foxtail millet (1.65 mg/100 g) and pearl millet (1.48 mg/100 g) (Kumar et al., 2018). Finger millet protein is abundant in essential amino acids such as methionine, valine, and lysine, and 44.7% of the amino acids.

India is the world leading producer of minor millets, yet the awareness on its significance and nutritional value is less. Small millets can potentially play a significant role in promoting immunity, supplying fodder, enhancing biodiversity, and safeguarding farmers livelihoods in addition to addressing food and nutritional well-being. It has enormous therapeutic uses in addition to their nutritional value to treat the diseases like cancer, leprosy, pneumonia, dietary regulation. Minor millets are a great source of a variety of essential elements that improve health.

Conclusion

Extreme weather conditions such as drought are not a barrier to millets' growth; certain wild types may even thrive in flooded fields and marshy areas. The study indicated that millets exhibited considerable promise in bolstering food and nutritional security in India. Millet-based meals must be a part of international, national, and state-level feeding programs that help address the current nutritional shortage in developing nations in order to overcome nutrient deficiencies such as those in protein, calcium, and iron.

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