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Small Grain, Significant Benefits: Exploring the Advantages of Little Millet

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Priya Pandey[1], R.N. Kewat[2], Sheetanu Singh[3], Grima Dixit[4]

[1,3,4]Research Scholar, Department of Biochemistry, Acharya Narendra Deva University of Agriculture and Technology, Kumarganj, Ayodhya

[2]Professor, Department of Food and Nutrition, Acharya Narendra Deva University of Agriculture and Technology, Kumarganj, Ayodhya

Little millet (*Panicum sumatrense*) is a highly nutritious and resilient grain that has gained prominence in India due to its health benefits and adaptability to diverse growing conditions. Cultivated primarily in Tamil Nadu, Karnataka, Andhra Pradesh, Madhya Pradesh, and Odisha, this minor cereal plays a crucial role in traditional Indian cuisine and offers numerous health advantages. Rich in fiber, protein, essential minerals, and antioxidants, little millet supports weight management, digestive health, heart health, bone strength, and diabetes management. Its low glycemic index and bioactive nutraceuticals make it particularly beneficial for individuals with diabetes and those seeking a balanced diet.

In addition to its nutritional value, little millet presents economic opportunities for farmers. Its drought resistance, low input costs, and potential for value-added products make it a profitable crop, especially in dryland farming systems. The growing consumer demand for nutritious grains further enhances market prospects. Government initiatives promoting millet cultivation contribute to its economic viability, encouraging sustainable agricultural practices.

Culinary versatility is another advantage, as little millet can be used in porridge, flour, snacks, and as a rice substitute. Despite its potential, the absence of ready-to-use products limits its widespread adoption. Recent efforts focus on improving accessibility and consumer-friendly processing methods. This review highlights little millet9s nutritional benefits, economic significance, and culinary applications, emphasizing its role in

sustainable agriculture, food security, and public health.

Little millet (*Panicum sumatrense*) is an exceptionally nutritious grain that has gained recognition in India for its health benefits and adaptability to diverse growing conditions. This ancient grain flourishes in arid and semi-arid climates, making it a resilient choice amid climate challenges. Major cultivation regions in India include Tamil Nadu, Karnataka, Andhra Pradesh, Madhya Pradesh, and Odisha. Little Millet-samai, one of several various millets, is an important part of the Indian cuisine. It is a great source of micronutrients and nutraceutical cereal, little millet (Panicum sumatrense) is known for a number of health advantages since it contains bioactive nutraceuticals such phenolic compounds, tocopherols, and carotenoids, as well as being low in glycaemic index, which is particularly advantageous for diabetes people. It contains fiber, which lowers body fat levels, and it is a rich supply of phosphorus. The samai's low calorie and antioxidant content aids in maintaining a healthy weight and diet, which can aid in weight loss. (Indirani *et. al. 2021)*

Health Benefits of Little Millet

Little millets, known as "Nutri-cereals," are highly nutritious and rich in dietary energy, vitamins, minerals4particularly micronutrients like iron (9.3 mg/100 g), calcium, and zinc4insoluble dietary fiber, and phytochemicals with antioxidant properties. Their consumption offers protection against chronic illnesses such as Type II diabetes, obesity, cancer, cardiovascular disease, and ischemic strokes. The complex carbohydrates in little millet digest slowly, making them particularly beneficial for diabetic patients. (RN *et al.*2022) Its high fiber content promotes fullness, helping to control appetite and support weight loss. Additionally, fiber plays a crucial role in maintaining digestive health by preventing constipation and encouraging regular bowel movements. Regular consumption of little millet may also improve heart health by lowering cholesterol levels and reducing the risk of heart disease. The abundance of calcium and magnesium in little millet supports bone density and strength, contributing to overall skeletal health. Furthermore, its low glycemic index makes it particularly beneficial for individuals managing diabetes, as it helps regulate blood sugar levels effectively.

Additionally, they help strengthen the body and raise healthy cholesterol levels, making them ideal for growing children and individuals with low body mass. With high phosphorus content (220 mg/100 g), little millets support overall health and development. Given their nutrient density, versatility, and health benefits, little millets are a valuable dietary addition. In rural India, small millet-based value-added products could enhance nutrition, empower farmers, and boost income. The increasing prevalence of malnutrition, exacerbated by modern dietary habits and fast-food consumption, necessitates the development of nutrient-dense, palatable food products that effectively support growth and well-being.

Culinary Uses Of Small Millets: Small millets are delicious, have a nut-like, slightly sweet taste, and are packed with healthy elements. 9314% protein, 703 80% carbs, and a high dietary fiber content are all

present in little millet. despite the fact that little millets' nutritional benefits have been well documented. Because there aren't any consumer-friendly, ready-to-use or ready-to-eat items like rice and wheat, their use drawn attention recently, mostly due to their recognition as meals high in fiber and ongoing initiatives to make them more easily accessible to consumers. (Saini *et al.*,2018)

Little millet is versatile and can be used in various dishes:

- **Porridge:** Cooked as porridge, it makes a nutritious breakfast.
- **Substitutes:** It can replace rice or other grains in salads, pilafs, and stir-fries.
- **Flour:** Ground into flour, it serves as a gluten-free option for baking.
- **Snacks:** Roasted little millet can be enjoyed as a healthy snack or added to trail mixes.

Nutritional Composition of Little Millet:

Little millet is a nutrient-dense grain that offers numerous health benefits. Rich in dietary fiber, it aids digestion and supports healthy cholesterol levels. It is also packed with essential minerals like iron, calcium, phosphorus, and magnesium, which contribute to bone health and overall bodily functions. With a higher protein content than many other grains, it serves as an excellent option for vegetarians and those looking to increase protein intake. Its low glycemic index helps regulate blood sugar levels, making it beneficial for diabetics. Additionally, the presence of antioxidants helps combat oxidative stress, potentially reducing the risk of chronic diseases.

Nutritional Content per 100g:

Nutrient	Amount
Protein	7.7 g
Carbohydrates	67.0 g
Dietary Fiber	7.6 g
Fat	4.7 g
Iron	9.3 mg
Calcium	17 mg
Phosphorus	220 mg

Economic Opportunities for Farmers:

Samai (little millet), one of the several millets, is a significant dryland crop that is farmed on a small scale as a grain for the poor that can endure both drought and waterlogging (Kamatar et al., 2013). The crop is sown when the area experiences early rainfall and is extremely drought tolerant; it is not appropriate for growing other dry land crops like ragi, sorghum, or groundnuts.

Due to their many uses, little millets are frequently referred to as "miracle crops." There are many advantages to using small millets in cropping systems, such as the use of grain for food and value-added food products, straw for forage, agro-diversity enrichment, erosion control in arid areas, increased carbon sequestration, and smallholders' assurance of food and nutritional security. (Mitra *et al.,2019)* Little millet presents significant economic opportunities for farmers, particularly in regions where it is traditionally cultivated. The increasing health consciousness among consumers has boosted the demand for nutritious grains, creating new market opportunities in the health food sector. Its natural drought resistance makes it a reliable crop in areas with unpredictable rainfall, ensuring stable yields. Additionally, little millet

requires fewer fertilizers and pesticides, leading to lower input costs and higher profit margins for farmers. The potential for value-added products, such as flour and snacks, further enhances its profitability. Moreover, integrating little millet into mixed cropping systems offers agroecological benefits by promoting biodiversity and improving soil health. Government initiatives supporting millet cultivation further strengthen its economic viability, making it an attractive crop for sustainable agricultural practices.

Conclusion

Little millet (*Panicum sumatrense*) is a highly nutritious and resilient grain with significant health, economic, and agricultural benefits. Its rich nutritional profile, including high fiber, protein, essential minerals, and antioxidants, makes it a valuable dietary addition, particularly for managing diabetes, heart health, and weight control. The growing awareness of health and nutrition has increased its demand, encouraging the development of value-added products and expanding market opportunities.

From an agricultural perspective, little millet thrives in arid and semi-arid regions, requiring minimal inputs, making it a cost-effective and sustainable crop for farmers. Its adaptability to diverse climatic conditions and drought resistance ensure stable yields, even in challenging environments. Additionally, its integration into mixed cropping systems supports soil health and biodiversity.

Despite its nutritional advantages, the limited availability of consumer-friendly, ready-to-eat products has restricted its widespread adoption. However, recent initiatives to improve processing techniques and promote millet-based foods are addressing these challenges. Government support and policy interventions further strengthen the economic viability of little millet cultivation.

In conclusion, little millet holds great potential in addressing malnutrition, supporting sustainable agriculture, and providing economic benefits to farmers. Promoting its production, processing, and consumption can contribute to food security, public health, and environmental sustainability, making. it an essential component of future food systems.

References

1. Dhawale, R. N., Padhiyar, S. M., Kheni, J., & Tomar, R. S. (2022). Metabolomic profiling of drought-tolerant little millet (Panicum sumatrense L.) genotype in response to drought stress. *The Pharma Innovation Journal, 11*(4), 1754-1762.
2. Indirani, K., & Devasena, M. (2021). Review on nutritional profiles and health benefits of little millets 3 India. *International Journal of Research in Engineering and Science (IJRES), 9*(11), 7-11.
3. Maitra, S., & Shankar, T. (2019). Agronomic management in little millet (Panicum sumatrense L.) for enhancement of productivity and sustainability. *International Journal of Bioresource Science, 6*(2), 91-96.
4. Saini, R., & Yadav, K. C. (2018). Development and quality evaluation of little millet (Panicum sumatrense) based extruded product. *Journal of Pharmacognosy and Phytochemistry, 7*(3), 3457- 3463.

5. Tomar, A., Mishra, A. K., Singh, S. P., Khan, H. H., Patel, P., & Singh, R. P. (2023). Nutritional benefit of small millets: Food security & sustainability in India. *The Pharma Innovation Journal, 12*(2), 3028-3033.