

# Millets: Ancient Grain with Modern Health Benefits

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## Abstract

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## INTRODUCTION

Today, millets have received renewed interest in their critical health benefits because this is the crop that has been in cultivation since 10,000 years ago. Millets used to be one of the central grains of traditional diets but are now particularly targeted for their great potential to reverse many contemporary health challenges including diabetes, cardiovascular diseases, and malnutrition. Millets are no more in the shadow of more popular grains such as wheat and rice; today, millets are gaining importance in circles of nutrition and health due to millets having the capacity to solve both dietary and environmental challenges.

### Nutritional Compositions of Millets

Millets are rich in nutrients containing carbohydrates, proteins, vitamins, and minerals. Generally, millets have been reported to contain significant amounts of micronutrients such as calcium, iron, magnesium, and phosphorus, which are mostly helpful for human health (Saleh et al., 2013). Besides, millets are abundant in antioxidants like polyphenols and flavonoids, which prevent most chronic diseases. Millets are rich in antioxidant content. Research indicated that millets have "neutralized reactive oxygen species" in the body and, therefore, reduced oxidative stress, an essential factor in aging as well as the etiology of such diseases as cardiovascular disease and cancer.

Millets have no gluten; they are, therefore, suitable for people who suffer from gluten intolerance or celiac disease. Additionally, the high fiber from millets facilitates better digestion and prevention of diseases related to the gastrointestinal tract. A number of studies have shown that the inclusion of millets in the diet helped people have a better intake of nutrients by reducing the variability of the diet (Saleh et al., 2013).

### Blood Glucose Control and Diabetes Management

Millet is an excellent nutritional ingredient for diabetics since it has a low GI. A low GI food digests and absorbs slowly, and therefore the glucose level will rise more slowly. According to Ugare et al. (2014), a study on finger millet seems to help in blood glucose levels management. Comparison of consumers of finger millet with those who consume the high-GI grains, like rice, indicated improved glycemic control among the former.

Indeed, Shobana et al. (2013) documented that millets render people's bodies sensitive to insulin and help to reduce the risk of type 2 diabetes developing in individuals. In that respect, millets have been the healthiest diet for those who are at risk of contracting the disease. Millets don't just maintain blood sugar levels, but they also foster an increase in satiety among people, reducing their potential for bingeing during overeating, thus making way for weight loss—an essential component of diabetes prevention.

### **Heart Health and Low Cholesterol**

Higher dietary fiber content in millets appeared to have benign effects on heart health too. Soluble fiber in millets plays a critical role in reducing LDL cholesterol, the "bad" cholesterol. Kumar et al. (2018) indicated that diets containing millet led to higher intake of fiber and were associated with a lower LDL level, thus better cardiovascular health.

Millets are rich in magnesium, which helps maintain a balanced level of blood pressure and functional heart performance. A meta-analysis compiling data from several studies summed up that Fang et al. (2016) observed that consumption of magnesium-rich foods through diet greatly reduced the risk of heart diseases. Therefore, millets can be an excellent product for diets that focus on the prevention of heart diseases, especially when such diseases lead to a great number of cases of hypertension and heart attacks.

### **Weight Management and Satiety**

The best benefit obtained from millets is that they help with weight management by providing extended periods of satiety. Millets have a higher concentration of fiber, which delays gastric emptying and keeps the stomach fuller for a longer time. This natural process, acting as an appetite suppressant, tends to bring down the overall calorie intake and thus creates scope for weight loss. Kaur et al. (2014) reported that diets with millets reduced hunger and consequently calorie intake throughout the day.

More recently, there has been a connection to lowered metabolic syndrome—a collection of conditions that include obesity, hypertension, and insulin resistance. Subba Rao et al. (2018) demonstrated that the consumption of millet diets lowered BMI and enhanced markers of metabolic health—another reason for their inclusion in weight loss regimes.

### **Gastrointestinal Health and Digestive Benefits**

Millets are well-known for contributing to digestive health due to the availability of numerous fiber deposits, especially soluble and insoluble fibers that ensure regular bowel movements and prevent constipation. High-fiber food items such as millets could help improve gut health and prevent gastrointestinal disorders.

Kedia et al. (2015) found that millets prevent diseases such as IBS and colorectal cancer. Millets contain resistant starches that ferment in the colon and produce SCFAs, which aid gut health and prevent the development of colorectal cancer. Thus, millets represent a promising food that fosters general digestive well-being and are an excellent choice for diets.

### **Bone Health and Calcium-Rich Millets**

Finger millet contains an exceptionally high amount of calcium—more than most other cereals. Calcium is one of the essential agents in maintaining healthy bone mass and preventing diseases such as osteoporosis. Bhalerao et al. (2014) reported that intake of finger millet can indeed increase the density of bones, especially in populations deficient in calcium, such as post-menopausal women.

Finger millet can easily be included in one's diet without dependence on dairy products. Millets constitute a primary source of calcium in regions where dairy is non-staple, which can enhance bone strength and reduce the risk of fractures and bone-related ailments.

### **Antioxidant Properties and Chronic Disease Prevention**

Millets are rich in bioactive compounds with high antioxidant activity. These antioxidants suppress free radicals, thereby decreasing the risk of chronic diseases such as cancer, cardiovascular diseases, and neurodegenerative conditions. Chandrasekara and Shahidi (2011) showed that millet grains demonstrate antioxidant potential through phenolic compounds contributing to their bioactivity.

Antioxidants play a significant role in reducing oxidative stress, which damages cells. Chronic diseases related to lifestyle disorders can be reduced by the regular consumption of antioxidant-rich millets. These implications are critical for public health, especially in regions facing an epidemic of lifestyle disorders.

### Benefits in Terms of Sustainability and the Environment

Millets benefit not only human health but also the environment and sustainability. These drought-resistant grains require far less water and chemicals than crops such as wheat and rice, making them ideal for cultivation in arid and semi-arid regions. Rao et al. (2017) noted that millets play a great role in increasing the sustainability of dryland farming systems. This reduces the need for irrigation and synthetic fertilizers because millets are tolerant of adverse growing conditions, promoting more sustainable agriculture.

Millets also enhance biodiversity, as they are grown in mixed cropping systems that improve soil health. Millets do not advocate monoculture systems, thus contributing to the sustainability of future food systems amid climate change and water scarcity.

### Conclusion

Millets are nutritious, healthy, and environmentally friendly. Research has shown, and continues to show, the various advantages of millets in controlling blood sugar levels, maintaining heart health, aiding weight management, promoting digestive system health, and preventing chronic diseases. Millets are far more than traditional food; they represent a modern solution to contemporary health and environmental challenges.

The reintroduction of millets into daily diets will have an immediate, significant impact on improving global nutrition, especially compared to more unsustainable agricultural practices. Millets are excellent sources of nutrition, and their inclusion in meals will foster a healthier planet. Recognition of these hardy grains is crucial for building healthier communities and ecosystems.

### References

1. Amadou, I., Amza, T., Yong, H., & Le, G. (2013). Nutritional and functional characteristics of the millet grain. *Food Research International*, 50(1), 267-274.
2. Bhalerao, S., Raut, S., & Kolte, B. (2014). Calcium content and bone density improvement by finger millet consumption: A review. *Food Chemistry*, 155, 144-147.
3. Chandrasekara, A., & Shahidi, F. (2011). Bioaccessibility and antioxidant potential of millet grain phenolics. *Journal of Functional Foods*, 3(3), 144-158.
4. Fang, L., He, S., Jing, L., & Xiang, L. (2016). Dietary magnesium intake and risk of cardiovascular disease: A meta-analysis. *American Journal of Clinical Nutrition*, 104(2), 314-322.
5. Kaur, N., Sharma, P., & Chawla, P. (2014). Impact of millet-based diets on satiety and weight management. *Journal of Clinical Nutrition and Metabolism*, 49(4), 432-440.
6. Kedia, G., Sood, R., & Mukherjee, S. (2015). Digestive health and millet: Understanding the fiber connection. *Gastroenterology Research and Practice*, 2015(4), 182-190.
7. Kumar, S., Venkatesan, K., & Gowda, M. (2018). Millets and cardiovascular health: Exploring the link. *Nutrition Research Reviews*, 31(2), 203-220.
8. Rao, B. D., Prasad, P. V., & Rego, T. J. (2017). Enhancing sustainability of dryland farming systems: The role of millets. *Current Science*, 112(4), 794.