

Millets: Rediscovering Ancient Grains for Modern Health

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Imagine a small, tiny grain that fulfils all nutritional requirements of your body, promotes health and even contributes to sustainable agriculture. What if I told you that this grain exists in India. However, it has been neglected for an extended period. Get ready to discover the extraordinary potential of millets—an ancient grain making a comeback in the modern diet.

Millets possess an extensive historical background that traces its origins to ancient eras. The earliest evidence of people cultivating millets were discovered in the Indus Civilization around 3000 BC. Millets have 6000 varieties found across the world. Among them around 2600 BC, the cultivation of the little millet marked the beginning, followed by the cultivation of other varieties such as foxtail millet, sorghum, ragi, kodo millet and bajra. These grains are supposed to be among the first cereal crops used for domestic purposes.

As time passed, the cultivation and utilization of millets spread all over the world. Millets adaptability to various climates and their ability to survive in harsh conditions popularize among the people. Today, millets are cultivated in 131 countries, marking their global prevalence. Across Asia and Africa, millets have remained a traditional food source for around 590 million people.

So basically, millets are plants that belong to the Poaceae (Gramineae) family. Millets are the small seeded grasses that called as nutri-cereals due to their nutritional content. They also referred as the smart food because of their sustainability and environment-friendly nature.

Benefits of millets

Millets offer several extraordinary benefits, such as they offer rich protein, fiber and mineral content, including essential elements like calcium, phosphorus and iron. Millets require minimal water, making them suitable crop for dryland regions and a resilient choice during drought conditions. Additionally, millets serve as valuable fodder and feed for livestock. Millet

plants can be used in biofuel production, providing an easier-to-process alternative to ethanol. Various millet varieties are used in beer production, contributing to the brewing industry.

Furthermore, millets are an environmentally sustainable crop due to their shorter life cycle, typically ranging from 2 to 4 months depending on the millet variety. They can be cultivated with limited dependency on fertilizers and pesticides, making organic cultivation feasible. Additionally, millets have a relatively low water requirement, typically around 400 mm, further emphasizing their eco-friendly nature.

Health benefits of millets

Millets offer several health benefits, making them valuable additions to diet of an individual. Millets are tiny grains packed with essential nutrients, including vitamins (especially B-complex vitamins), minerals like iron, calcium and phosphorus of which contribute to overall health. Additionally, millets are rich in dietary fiber, which improves digestion and help in weight loss. Their low glycemic index helps prevent diabetes and blood sugar spikes. Millets have low cholesterol properties are good for heart and cardiovascular health and the antioxidants they contain reduce the risk of heart diseases. Moreover, millets are naturally designated as gluten-free, making them an excellent alternative for person who's with gluten sensitivity or celiac disease.

Types of millets

Millets are classified according to their cultivation area in the countries which mainly two types: major millets and minor millets. The millets which are widely grown in the world is called major millets and millets which have less acreage of area is called as minor millets.

Third category is called pseudo millets or pseudo cereals. The grain which have same nutritional property but does not belong to the Poaceae family is called pseudo millets.

Major millets

Major Millets play a crucial role in global agriculture, contributing significantly to food security and nutrition. Let's delve into the distinctive features of three prominent millets: Pearl Millet, Sorghum, and Finger Millet.

- 1. Pearl Millet (*Pennisetum glaucum*):** Pearl Millet stands as a staple in various regions, notably India, Western and Central Africa, Eastern and Southern Africa. Its cultivation serves dual purposes: as a vital food grain in Asia and Africa and as valuable fodder in the Americas. Beyond its versatility, Pearl Millet contain a high phosphorus content,



promoting bone health. Additionally, it contains iron and folic acid, crucial for preventing anemia, particularly in pregnant women. Notably, compared to traditional cereals like rice and wheat, Pearl Millet stands out with its high fiber content, beneficial for sugar and weight control.

2. **Sorghum (*Sorghum bicolor*):** Widely recognized by names such as Great Millet, Jowar, and various others, Sorghum thrives in diverse regions, including the USA, Nigeria, Sudan, Mexico, and India. Its cultivation serves the dual purpose of food grain production in Asia and Africa and fodder in the Americas. Sorghum's nutritional profile is impressive, featuring high magnesium levels facilitating efficient calcium absorption. Rich in phenolic compounds and antioxidants, Sorghum is celebrated for its health benefits. Notably, its low glycemic index makes it a valuable component in diabetes prevention.
3. **Finger Millet (*Eleusine coracana*):** Known by various names such as Ragi, Bird's Foot, and Wimbi, Finger Millet finds cultivation in countries like India, Ethiopia, and Uganda. Its applications extend to food grain and beer making in Asia and Africa. What sets Finger Millet apart is its exceptional richness in calcium, surpassing even milk and other cereals. With three times more calcium than milk, it becomes a crucial dietary source. Moreover, its high protein and carbohydrate content make it an ideal choice for weaning food, especially for infants. Finger Millet's reputation for porridge making further underscores its nutritional significance.

Minor millets, often overshadowed by their major counterparts, play a pivotal role in global agriculture, contributing not only to food security but also offering unique health benefits. Here's a closer look at five significant minor millets: Foxtail Millet, Proso Millet, Little Millet, Kodo Millet, and Barnyard Millet.

- **Foxtail Millet (*Setaria italica*):** Known by various names such as Italian, German, and Hungarian, Foxtail Millet finds cultivation in China, Myanmar, India, and Eastern Europe. This versatile millet serves both as a food grain and a feed crop. Notably, Foxtail Millet thrives in rainfed areas due to its impressive drought tolerance, making it a resilient and essential crop in challenging agricultural environments.
- **Proso Millet (*Panicum milliaceum*):** Widely recognized by names like common, hog, and broom millet, Proso Millet is cultivated across diverse regions, including Russia,



USA, Ukraine, and India. Primarily used for food grain and bird seed, Proso Millet holds a special place in organic farming systems. Its adaptability and versatility contribute to its popularity in various agricultural practices.

- **Little Millet (*Panicum sumatrense*):** Known as Blue Panic and Heen Meneri, Little Millet is predominantly grown in India, serving the purpose of food grain production. The standout feature of Little Millet lies in its drought-tolerant nature, making it a vital crop in rainfed areas. Its resilience to water scarcity adds to its significance in agricultural landscapes.
- **Kodo Millet (*Paspalum scrobiculatum*):** Cultivated mainly in India and known by names like Varagu and Indian Paspalum, Kodo Millet is valued for its food grain production. Despite being a minor millet, Kodo Millet contributes significantly to local agricultural practices, providing a source of nourishment and livelihood for many communities.
- **Barnyard Millet (*Echinochola crusgalli*):** Referred to as Japanese, Sanwa, and Korean Millet, Barnyard Millet finds cultivation in countries such as India, Japan, China, and Malaysia. Primarily used for food grain purposes, Barnyard Millet stands out with its recommendation for patients with cardiovascular diseases. This nutritional consideration adds a health-focused dimension to its cultivation and consumption.

In conclusion, these millets, often cultivated in diverse geographical regions, bring resilience, adaptability, and unique nutritional benefits to the agricultural landscape. Rich in vitamins, minerals, protein, fiber, and antioxidants, these millets contribute not only to food security but also to potential health benefits, making them an integral part of the global effort towards sustainable and nutritious agriculture.

Promoting Millets: National and International levels

In 2018, the Indian government took a notable stride in revitalizing millets by designating it as the "National Year of Millets." Millets are acknowledged for their significant potential in addressing global challenges such as climate change and food security. Recognizing their significance, Prime Minister Narendra Modi suggested observing 2023 as the International Year of Millets, aiming to establish India as the "global hub of millets." This forward-thinking proposal garnered support from 72 other countries, and it was formally endorsed by the United Nations General Assembly during its 75th session in March 2022.



The International Year of Millets serves as a global platform to highlight the significance of these grains in addressing serious disputes like food security, climate change resilience and sustainable agriculture. This initiative resonates with the ancient Indian philosophy of "Vasudhaiva Kutumbakam," which emphasizes the idea that the world is one family.

Culinary Versatility of Millets

Millets exhibit remarkable culinary adaptability, as they can undergo various processing methods to yield diverse forms, including whole grains and flour, through the application of different processing technologies. Notably, millet grains can be finely ground to produce flour, a versatile ingredient employed in the preparation of an extensive array of dishes such as flatbreads, pancakes, and noodles. Furthermore, millet flour serves as a key component in the formulation of gluten-free bakery items, including bread, muffins, and cookies. Its functional attributes extend to acting as a proficient thickening agent in soups, stews, and gravies, contributing not only to flavor enhancement but also ensuring optimal consistency.

Millets are renowned for their culinary adaptability, finding common use in the preparation of porridge and fermented items such as idli and dosa, which stand as popular breakfast choices across various cultures. The versatility of millets extends to beverage production, encompassing millet-based beer and traditional drinks. For instance, finger millet takes center stage in the production of the South Indian beverage known as "ragi malt," while pearl millet contributes to the crafting of "bantu beer." Additionally, innovative processing techniques like extrusion can be employed to create popped millet, akin to the popular snack popcorn.

In summary, the culinary potential of millets is vast, owing to their adaptability and rich nutritional profile. Their application spans a broad spectrum, from traditional dishes to innovative food products, showcasing the diverse ways in which millets can be integrated into culinary practices.

Challenges to incorporate millets in diets

Numerous regions are shifting from millet to staples like wheat and rice. This disconnect arises as contemporary diets favour mainstream options over millets.

A key barrier is the lack of awareness about millets' nutritional benefits. Labelling millets as the 'poor man's grain' inaccurately associates them with inferior quality, discouraging



their inclusion in diets. Dispelling misconceptions and enhancing awareness is crucial for renewed appreciation. Marketing influences millet purchases, often portraying them as inferior. Limited processing technology hampers product diversification, affecting demand, especially in urban areas. Taste preferences for familiar cereals like rice and wheat hinder millet acceptance. This preference is a major barrier to promoting millet products.

Commercial factors, with rice and wheat included in the Public Distribution System at lower prices, make them more affordable than millets. Affordability considerations influence grain consumption. Limited availability in specific regions poses a challenge for those wanting to incorporate millets into their diets. Frustration arises when millets are unavailable in local markets, dissuading potential buyers.

A lack of culinary knowledge and millet recipe awareness hampers the ongoing shift towards millet consumption. Sufficient awareness and guidance are crucial for overcoming this hesitancy.

Solution

There are few solutions to overcome the challenges in millets marketing.

Awareness creation

Awareness campaigns about millets can be conducted using a variety of methods to encourage their addition in individuals' diets. Social media plays a key role as a game-changer through diverse posts, tweets, and videos. Collaborating with social media influencers can extend the reach to a larger audience. Media coverage in newspapers, magazines, radio, and television allows us to reach the masses.

Organizing food fairs and festivals provides an opportunity to engage people by offering millet tastings, thereby challenging and altering their perceptions regarding the taste of millets. Additionally, the development of various websites and apps can engage a wider audience, providing easy access to information and resources about millets.

Educate about nutritional and health benefits

There is a need to educate people that millets are not just a 'poor man's food' but rather a smart food choice for the 21st century. This can be achieved by including millets in school programs, distributing information about millets through pamphlets, posters, and various news articles. Additionally, adding nutritional labels on product packaging and sharing success stories online can raise awareness among individual consumers about the benefits of millets.

Marketing and branding



Marketing can be initiated by establishing a strong brand identity. This involves various processes such as packaging, sorting, and grading. Implementing diverse promotional strategies, including influencer marketing, poster campaigns and distributing templates, can be effective. Sampling and testing should be conducted, followed by asking customer reviews to measure millet product marketing success. Adjust your strategies based on customer insights to boost results.

Product diversification

Product diversification should align with demand and supply trends, allowing for adjustments based on customer preferences. Recipe development is crucial for product diversification, especially for making various products like ready-to-eat and ready-to-cook items made from millets. This development process involves enhancing flavour, texture and appearance to make the products more appealing to consumers.

Government initiatives

There is a need for government intervention in the millet sector. The government should provide subsidies to millet cultivators and support processors. Infrastructure development is essential for processing and adding value to millets. Additionally, including millet grains into the Public Distribution System (PDS) can increase the affordability of millet products.

Retail availability

Increase the availability of millet products in both rural and urban markets by making them readily accessible in retail shops that provide to the specific preferences and needs of consumers, thereby encouraging greater millet consumption.

Recipe promotion and workshops

Recipe promotion and workshops, which focus on developing and promoting millet-based dishes, can help engage consumers in incorporating millets into their diets. These initiatives not only introduce consumers to the culinary versatility of millets but also empower them with the knowledge and skills to prepare delicious and nutritious millet meals at home, ultimately contributing to a healthier and more sustainable diet.

Conclusion

Millets were once labelled as 'poor man's food,' but in recent times, awareness has increased, and millets are emerging as the smart food of the 21st century. The reasons behind the popularity of millets are their nutritional benefits and their environmentally and farmer-



friendly nature. Government support is needed in various forms, including subsidies, schemes, and other incentives, to incorporate millets into the diet of individuals. Furthermore, awareness campaigns and educational programs play a crucial role. Millets are not just grains; they are seeds of healthier and more environmentally conscious behaviour.

References:

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