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Millets in the Northeastern Hilly Regions of India: Cultivation, Consumption, and Cultural Importance

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Abstract

Millets, comprising both major and minor varieties, represent a vital aspect of agricultural diversity and nutritional resilience among the tribal communities of the North-Eastern Hill (NEH) states in India. In the Northeast hill region, millets are cultivated alongside rice in shifting cultivation practices such as Jhum, play a crucial role in ensuring food security and preserving traditional farming systems. Despite challenges like declining cultivation and lack of market support, millets remain deeply ingrained in the culinary heritage and cultural practices of NEH tribes. Festivals, rituals, and communal gatherings are often positioned around millet-based dishes and beverages, reflecting a blend of nutritional awareness, cultural heritage, and sustainable agricultural practices. By understanding the intricate relationship between millets and NEH tribal communities, efforts can be made to promote their cultivation, consumption, and conservation, thereby ensuring food and nutritional security while preserving indigenous cultural traditions.

Introduction

Millets are a diverse group of small, seeded grasses that exhibit remarkable variability and global recognition as cereal crops. They belong to Poaceae family and are categorized into great millets encompassing Sorghum, Pearl millet, and Finger millet and small millets including Foxtail millet, little millet, Proso millet, Barnyard millet, Kodo millet, and Brown top millet. Millets are popularly known as "Nutri-cereals" because they are nutritionally akin to major cereals, boasting substantial micronutrients, protein, dietary fiber, phenolic compounds, and medicinal photochemical. With protein content ranging from 7 to 12 per cent, fat content between 2 and 5 per cent, carbohydrates from 65 to 75 per cent, and dietary fiber at 15 to 20 per cent(Amrutha *et al*., 2024). Millets offer various health benefits ranging from reducing blood pressure, preventing cardiovascular diseases and cancer, lowering cholesterol, and combating obesity and gastrointestinal disorders (Bhardwaj *et al.,* 2023). Millets were among the earliest crops to be cultivated by humanity in both Asia and Africa, subsequently disseminating worldwide as essential food staples crucial to the development of civilizations.In arid and semi-

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arid regions worldwide, millets serve as a staple food for both cultivation and consumption. Specifically cultivated for their dual purpose of providing grain and fodder, these millets play a vital role in ensuring food and fodder security in rainfed agriculture. Traditionally, millets were produced and consumed extensively in the country and had almost equal area coverage to rice and wheat. However, the post- green revolution period witnessed a drastic decline in the area under cultivation of nutri-cereals by 41.65 percent between 1950–51 and 2018–19, albeit with their diverse uses and benefits (Sukumaran Sreekala *et al.,* 2023). Millets have been substituted by fine cereals such as rice and wheat due to rise in income levels, availability through the Public Distribution System (PDS), penetration of diversified value-added products, ease of preparation, and short cooking time. Creating awareness about millets' nutritional and environmental benefits and developing products suiting consumers' demands, including ready-to-eat foods, will foster consumption (Sukumaran Sreekala *et al.,* 2023).

Millets Production Status in NEH states

In North-East region of India, millets are cultivated in various states including Nagaland, Meghalaya, Tripura and small areas in Manipur and Mizoram. For centuries, millets have primarily been cultivated alongside rice in shifting cultivation, also referred to as Jhum or Slash/burn farming.

Manipur: Traditionally, millets were sparsely grown as warm grain crops on jhums in marginal and inferior soils of settled farms where it was not possible to cultivate rice. Millets like foxtail, bajra, and finger millet have been cultivated as part of Manipur's traditional jhum agriculture.

Nagaland: Millets are one of the important cereal crops in Nagaland, long cultivated in the hilly terrain of eastern parts of the state. The districts of Phek, Tuensang, Kiphire, Mon and certain regions of Kohima are the main areas where they are grown. Commonly grown millets are foxtail millet and sorghum. In 2020-21, the area under millet cultivation was 10.17 thousand hectares, with production reaching 11.31 thousand tons and productivity at 1111.86 kg/ha (Promoting Millets in Diets Best Practices across States/UTs of India, n.d.). In settled farms, millets are typically not cultivated as monocrops; rather, they are commonly integrated with tubers, vegetables, and oilseeds as cluster crops in forest farms and jhum fields. This approach to millet-based food crop farming has significantly supported the survival requirements of subsistence farmers in Nagaland.

Mizoram: Millets held deep significance in the Mizo way of life long ago. Together with rice and maize, millets have been staple foods for the ancestors of the Mizo people throughout their nomadic migrations. These millets were integral to the traditional jhum mixed farming system, cultivated alongside rice, maize, and various other crops (Soni *et al.,* 2023).

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Meghalaya: In hilly regions, indigenous tribes historically cultivated a variety of millets, including finger millet, foxtail millet, bajra, and small millets, often within jhum cultivation systems. Raishan (Digitaria cruciata var. esculenta Bor) stands out as an endemic millet crop specific to the Khasi hills of Meghalaya, as reported by Singh and Arora in 1972.The total area under millet cultivation in Meghalaya was 2845 hectares in the year 2012-13, with a production of 2,520 million tonnes. However, by 2017-18, while the area and production of major millets crops increased significantly, the production of small millets decreased due to factors like drudgery, labor costs, lack of processing units, institutional support, and a lack of market for millets.

Tripura: The tribal communities of Tripura have been practicing mixed cropping with foxtail millet as a significant component since time immemorial. Millets, particularly foxtail millet, are grown across all eight districts of Tripura, with a significant emphasis on increasing production through various schemes and programs. The area under millet cultivation in Tripura has shown a positive trend, with an increase in both area and production over the years. For instance, in the Kharif season, the area under foxtail millet cultivation increased from 352 hectares in 2016-17 to 1,119 hectares in 2020-21, with a corresponding rise in production. Moreover, the state has been actively conducting awareness programs, publishing manuals on millet cultivation, and organizing meetings to sensitize farmers and stakeholders about the benefits and techniques of millet cultivation.

Table 1: Millets cultivated across the NEH states.

States	Millets
Manipur	Finger millet, Bajra and Foxtail millet
Meghalaya	Finger millet, Pearl millet, Foxtail millet, Raishan and Jobstear
Mizoram	Sorghum, Pearl millet and other small millets
Nagaland	Sorghum, Pearl millet, Finger millet and other small millets
Tripura	Sorghum and Foxtail millet

Source: (E-Catalogue for Export of Millets and Value-Added Products, n.d.; Soni *et al*., n.d.)

Millet consumption and cultural Significance in NEH tribes

In the Northeast Hill region of India, millets have been an integral part of the local diet, especially among tribal communities. States like Manipur, Meghalaya, and Nagaland have a strong tradition of consuming millets, making them a staple food in the region. The consumption of millets in the Northeast Hill region reflects a blend of cultural heritage, nutritional awareness, and sustainable agricultural practices.

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Manipur: The Paite tribals and Thadou-Kuki ethnic group practice millet cultivation through Jhum farming. During the Mim Kut festival, which marks the first harvest and is also known as the "job's tears" festival, each family honors their deceased relatives by offering the initial yield from their Jhum fields. These offerings typically consist of fruits, maize, millets, or job's tears, with millets often prepared as cakes specifically for this occasion.

Mizoram: Sato, also known as millet, constitutes a crucial component of the staple diet among the Mara tribe of Mizoram, who engage in shifting cultivation known as "jhum". Their jhum cultivation encompasses various millets including sorghum (faisa), pearl millet (bhutun), and small millets.

Nagaland: In Nagaland, millets have long been employed in the creation of diverse brews, frequently fermented beverages. These concoctions carry profound cultural and social importance, featuring prominently in rituals, ceremonies, and communal gatherings, fostering a collective sense of unity and identity among the communities. The Angami Naga tribe commemorates the "Tsiinyi" or millet festival in August, symbolizing the culmination of the millet harvest. Millet kichdi and millet apang stand as typical dishes among the millet-consuming tribes of Nagaland.

Meghalaya: In the Khasi lunar month of U Nai wieng (November), farmers gather to harvest paddy. They prepare raishan and rice cakes in large earthen pots, known as wieng, to share with the workers or helpers in their fields. Interestingly, the people of the Rynjah clan (Kur) abstain from consuming raishan grains, indirectly contributing to the conservation of the plant.

Conclusion:

The Northeast Hill region of India exhibits a rich tapestry of millet cultivation, consumption, and cultural significance among its diverse tribal communities. Despite facing challenges such as dwindling cultivation areas and changing dietary preferences, millets continue to hold sway in the culinary traditions of these regions. They are not merely staple foods but integral components of festivals, rituals, and social gatherings, symbolizing unity, identity, and ancestral heritage. From offerings made during harvest festivals to the preparation of traditional dishes and fermented beverages, millets play a multifaceted role in the cultural fabric of Northeast Hill tribes. Moreover, efforts to revive millet cultivation and consumption are underway, evidenced by government initiatives, awareness programs, and financial support for farmers. Recognizing the nutritional and environmental benefits of millets, there is a growing momentum to reintegrate them into the mainstream food system, thereby ensuring food and nutritional security while preserving indigenous agricultural practices and cultural heritage.

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