Popular Article

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The cultivation of little millet and its numerous benefits

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India's ancient forgotten food grain (millet) is quickly evolving into a nutrient dense, naturally gluten-free, low glycaemic index superfood of the future in this international year of millets (2023). Millets, the nutri-cereals, are packed with energy protein, minerals and can fight diabetes, heart disease and malnutrition. India celebrated 2018 as the year of millets to exhibit the importance of millet. Based on the size of a grain, millets are classified into two classes called major and minor millets by the food safety and standards authority of India (FSSAI). According to the FSSAI, Major millets are Sorghum (cholam/jowar), Pearl Millet (cumbu/bajra), Finger Millet (ariyam/ragi), Minor Millets i.e. Foxtail Millet (thinai/kakun), Proso Millet (panivaragu/cheena), Kodo Millet (varagu), Barnyard Millet (kuthiraivali/ Jhangora), Little Millet (samai/kutki) and two Pseudo Millets (Buck-wheat (mara gothumai/kuttu) and Ameranthus (mulai keerai/chaulai). Millets are annual crops that can withstand drought and water logging conditions belonging to the Poaceae family. They are rainfed crops with hardy and small edible grain.

Little Millet (*Panicum sumatrense*) is one of the important crops for both food and feed. Even though it is smaller than other grains, it has high iron, antioxidants, and about 38% of dietary fibre. From the tribal people in the Eastern Ghats of India, it spread to Sri Lanka, Nepal, and Myanmar. It is suited for all age groups of people and helps to prevent constipation and stomach related problems. The cholesterol in this little millet helps strengthen the kids' body. It is very helpful for diabetic patients since it has complex carbohydrates which digest slowly. Its high fibre helps to reduce fat deposits in the body. Along with other nutrients, little millet is vital in providing nutraceutical elements such as phenols, tannins, and phytates.

Nutrient	Quantity
Calories	329kcal
Protein	9.7 gram
Carbohydrate	60.9 gram
Fat	5.2 gram
Mineral	1.7 gram
Iron	9.3 mg
Fibre	7.6 grams
Calcium	17mg
Thiamine	0.30 mg
Riboflavin	0.09 mg
Niacin	3.2 mg

The nutrient value of little millet per 100 gram grain

Botanical Description:

Botanical name: *Panicum sumatrense* (2n = 36)

Kingdom: Plantae

Clade: Tracheophytes, Angiosperms, Monocots, Commelinids

Order: Poales, **Family:** Poaceae, **Subfamily:** Panicoideae

Genus: Panicum, **Species:** P. sumatrense

1. Description

It is an annual herbaceous plant native to India. It can reach a height of 30 centimetres (12 inches) to 1 metre (39 inches) and grow straight or with folded blades. The membranous, occasionally hairy laminae and ligules are seen on the linear leaves. The panicles have an awn that measures 2 to 3.5 mm (0.079 to 0.138 in) long and range in length from 4 to 15 cm (1.6 to 5.9 in). Round and smooth, the grain is 1.8 to 1.9 mm (0.071 to 0.075 in) in length.

2.1 Subspecies

- *Panicum sumatrense* subsp. *psilopodium*.
- *Panicum sumatrense* subsp. *Sumatrense*

2.2 Cultivation

India's central region has the biggest cultivation. Little millet can be grown in various soil types, even flooded ones. Deep, loamy, fertile soils rich in organic matter are preferred for successful growth. It can, to some extent, survive salinity and alkalinity. Typically, a seed drill is used to plant it. 25–30 cm between rows, 8–10 cm between plants. 2 to 3 centimetres of soil should be used to plant the seed. For line sowing, use a seed rate of 8–10 kg/ha; for disseminating, use 12-15 kg/ha. It can grow during both the rabi and kharif seasons. A month before sowing, apply compost or farmyard manure at a rate of 5 to 10 tonnes per hectare for manuring and fertilization. A sufficient crop can usually be obtained by applying 40 kg of nitrogen, 20 kg of phosphate, and 20 kg of potassium per hectare of land. Phosphate is applied in its whole, along with half of the nitrogen, at the time of

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planting and the remaining half during the first irrigation. It is advised to apply fertilizers based on soil testing. A portion of the green plant can also be fed to livestock. Sesamum, soybean, and pigeon pea intercropping is also possible (2:1 row ratio). The straw can be used in construction with cement or clay. It will yield a total of 230 to 900 kg of seed per hectare.

2.3 Little millet varieties of India

State	Varieties
Orissa	OLM 203, OLM 208 and OLM 217
Madhya Pradesh	JK 4, JK 8 and JK 36
Andhra Pradesh	OLM 203 and JK 8
Tamilnadu	Paiyur 2, TNAU 63, CO-3, CO-4, K1, OLM 203, OLM 20
Chhattisgarh	JK 8, BL 6, BL-4, JK 36
Karnataka	OLM 203, JK 8
Gujarat	GV 2, GV 1, OLM 203, JK 8
Maharashtra	Phule Ekadashi, JK 8, OLM 203

2.4 Benefits of Little millet

1. Little millet has been proven to contain the greatest amount of fibre among all grains.
2. Little millet has a lot of phenolic chemicals, which have antioxidant properties.
3. This millet is a top-notch iron source. One serving (30 g) can meet 16% of an adult man's daily iron requirements.
4. Little millet, like other millets, is gluten-free. It compensates for whole-grain fibre deficiencies in Celiac (gluten-free) diets.
5. Little millet is diabetic-friendly due to its low to medium glycaemic index.
6. Histidine, methionine, and phenylalanine, three important amino acids, are abundant in it.

3. Industrial uses

In order to prepare millets for human consumption, the grains must first be cleaned, graded, and dehusked. The removal of the outer husk is a necessary step in the millet grain preparation process. In order to eliminate labor-intensive tasks and increase output quality and quantity, the contemporary millet processing technology uses a variety of tools and machines to process huge amounts. Improved millet dehusking equipment has been created, including rubber roll shellers and single- and double-stage centrifugal dehuskers with a range of capacities. Since the beginning of time, millets have been used in food, medicine, and cattle care. The different value-added products

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were created to make use of the nutritional benefits of these significant healthy foods. For the use of this significant health food, goods such as flaked millet, puffed millet, extruded and roller-dried millet products, fermented, malted and composite millet flours, and weaning foods have been produced. Millets have been employed in a number of food processing sectors, including beverages, weaning meals, biscuits and confectionery, and fermented foods like beer (Mathad et al., 2022).

4. **Food products prepared from little millet**

Little millet is prepared similarly to how we prepare ordinary rice. As a result, changing the flavour, texture, and appearance is quite simple. The recipes for small millet payasam, curd rice, mushroom biryani, pudina rice, tomato rice, apple jam, tea, Chinese fried rice, kaju namkin, upma, idly, lemon rice, kheer, dosai, etc. may all be produced with this millet because it is so adaptable. This works well in place of rice without sacrificing flavour.

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