

## Millets: The Lost Revolution to Re-evolution in Meghalaya

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### Introduction

Millets are small-grained nutria-cereals. The most important species are pearl millet, foxtail millet, proso millet, finger millet, teff, and fonio. Their macro-and micronutrient levels are similar to those of the major cereals. Finger millet is notably rich in calcium. Millets are gluten-free and generally rich in phenolic phytochemicals. Millets are used to produce many traditional food and beverage products, with malting and lactic acid fermentation being common technologies. Processing can greatly affect the nutritional value of millet products. As per the growing of millet in the West Garo Hills district of Meghalaya is concerned it is locally called *Dilni* and one of the important crops grown in the West Garo Hills district of Meghalaya especially in hilly terrain. Millets are playing a central role both on the nutritional and cultural side for indigenous communities. The tribal also use the millet for beer making. The indigenous tribal use to cultivate millets in the hilly terrain traditionally known as *Jhum Cultivation*. However, in the lower (plain) part of the district which is nearby, the Brahmaputra and *Jinjiram* River have also witnessed the cultivation of millets due to the suitability of soil and other agricultural inputs. The area and production of millets are presented below in the table form-

Crop	Year	Area	Production (MT)
Finger millet	2012-13	186	115
	2017-18	200	140
Foxtail	2012-13	1013	609
	2017-18	1048	640
Pearl millet	2012-13	78	36

		2017-18	86	45
Total Small Millets		2012-13	1277	760
		2017-18	1108	721

Source: Government of Meghalaya (2019)

In the year 2012-13, the total area under millet cultivation (finger millet, foxtail millet, pearl millet, and other small millets) in the state of Meghalaya is 2845 hectares and production 2,520 million tonnes. However, according to the data of the Directorate of Economics and Statistics, the Government of Meghalaya, in the year of 2017-18, the area and production of major millets crop increased significantly but small millets crop decreased from 760 million tonnes to 721 million tonnes. It could be due to the drudgery, labour cost, lack of processing unit, and institutional support. Additionally, there is a lack of market for the millets which suppressed the indigenous farmer to grow for commercial purposes. By keeping the above viewpoint, by the grace of Dr. Sangappa, Scientist & Nodal Officer (Tribal Sub-Plan), we the KISAN Society collaborated with ICAR-Indian Institute of Millets Research, Hyderabad to 'Popularization of small millets in North-Eastern Hilly regions of Meghalaya'. The followings scientific package of practices (interventions) was undertaken under this project;

### 1. Growing of Foxtail Millets

- a. The land preparation:** Ploughing of land followed by harrowing with the tractor has been done. The soil bed is prepared properly, so, that during germination, seeds do not get any obstacle from the soil clods.



**Fig. 1: Land Preparation**

- b. Variety: Variety:** One cultivar has white in colour and another one is red in colour. The seed has been purchased from the local market and their germination percentage is found to be 99 percent.



**Fig.2: Millets cultivar**

- c. **Seed rate:** 2.0 kg of local cultivar of foxtail millet being used for 1 acre of land. For the sowing of seed, a broadcasting method was followed. However, during weeding 8-10 cm plant to plant spacing has been maintained.



**Fig. 3: Sowing of seeds**

- d. **Weeding operation**

Weeding is very much important in growing foxtail millets. Therefore, the manual weeding was done on 24<sup>th</sup> March 2021. The most common weeds were *Cyanodon dactylon*, *Cyperus rotundus*, *Ecchinochloa* etc. The thinning and gap-filling did so that the plant growth enhanced.

**Fig. 4: Weeding****e. Irrigation**

Irrigation during the critical stage is a must which keeps away stress conditions especially during plant growth. Therefore, the first irrigation has been given at 25 days after sowing (DAS) then immediately after weeding, irrigation at 40 DAS.

**f. Manures and fertilizers**

Cow-dung has been spread before the land preparation. 10 kg of Nitrogen applied as basal dose, then after first weeding 8 kg of Nitrogen broadcasted for better growth of the plant.

**g. Harvesting**

The red type matured in 90 days. However, the white one took 100 days. On average, the ear heads length of the red cultivar is 21 cm, whereas, the white one is 16 cm. The plant height was found to be 121 cm in the red cultivar and 112 cm in the white cultivar. The crop is harvested when the ear-heads are dry, by sickle. The total yield received from 1 acre of land from both the cultivar is 9.5 quintals.

**Fig. 5: Harvesting**



**Challenges:** The plain area of West Garo Hills is well known for growing rice and mustard. 90 percent of farmers are primarily dependent on these two crops and made up their self-sufficient for family consumption and forced sale. The introduction of non-traditional crops like millets is impossible due to various factors. However, the two major factors are market and social acceptance. Other challenges are

- a. Lack of improved planting materials
- b. Lack of agro-advisory services
- c. Fragmentation of land size
- d. Farm mechanization
- e. Flood prone area

### **Impact of the crop**

I have received 9.5 quintals of grain from 1 acre of land. The crop has significantly attracted the fellow farmer for cultivating and buyer for commercial purposes. The farmer is seeking seed material for next season. We have also received a request from the Department of Agriculture and Farmers Welfare, Government of Meghalaya to supply seed. Further, we have created awareness on the field and off the field regarding millets and their health benefits and 40 farmers identified for the crop. 4 SHG also formed to promote the same.

### **Acknowledgment**

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### **References**

1. NEH Annual Progress Report: AICRP Small Millets Kharif 2020-21
2. Handbook on Area, Production and Yield of Principal Crops in Meghalaya, 2019 (Including Land Use Statistics and Irrigation Statistics), Government of Meghalaya.
3. Information retrieved from <https://www.zizira.com/blogs/plants/millets-why-are-they-languishing>. Millets – Why Are They Languishing?