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Popular Article

Production and Processing of Millets in Mizoram, North East India

Rahul Sadhukhan, L. Devarishi Sharma and Lalmingsanga

*Multi-Technology Testing Centre & Vocational Training Centre and College of Horticulture,
Thenzawl, Mizoram-796186
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Millets are known as coarse grain cereal crops and having wider adaptability to various biotic and abiotic stresses. Millets, which are commonly known as nutri-cereals, have the adaptive capability to grow in adverse climatic condition where no other cereals like rice, wheat and maize can grow under harsh environmental condition. Millets can be used as food cum fodder crops for the livestock of tribal communities in Mizoram. Major millets (like Pearlmillet and Sorghum) and minor millets (like Finger millets, Kodo millets, Barnyard millets and Proso millets) are the principal source of energy, vitamin, protein and minerals for the 10 lakhs of the poorest people (including tribal communities) in North-East India. Developing technology that makes millet value added products available as convenient to make and easy access at reasonable prices will find a great demand and market particularly in urban places where there is growing conscious for nutritive intake of foods and interest for ready to cook and ready to eat foods in particular. All the products are nutritionally rich and proved to be benefiting for all the age groups. With this backdrop, the successful story on “**Production, Processing and Entrepreneurship development of Millet**” has been revealed to bring out millets production, processing and value addition as successful and profitable venture. There is an increased response on various aspects of millets and queries to commercialize millet value added products. The programme might be helpful for developing the various entrepreneurship development opportunities in the millet sectors in North-East India including Mizoram.



Introduction

Millets are often termed as nutri-cereal crops, capable of growing in low-rainfall areas and infertile soil. India shared the highest production of millets in the world contributing of about 41% of total global production (Annonymous, 2020). The annual production of millet in India is 12 million tonnes. For encouragement as well as promotion of millets, the government of India observed '2018' as year of millets. However, the United Nation (UN) and FAO endorsed the proposal of India and declared "2023" as International Year of Millets. India ranks fifth position in the exporter of millets in the world. The top three importers of millets from India are Nepal, UAE and Saudi Arabia (Annonymous, 2021-22). Among the North East India, In Assam, millets covered an area of 6.6 thousand hectares with a production of ~4.4 thousand tonnes and the productivity of around 674 kg ha⁻¹ (Annonymous, 2015-16). Based on the size of grains, millets are classified into two groups a) major millets (Sorghum and Pearl millets) and small millets (Finger millets, Kodo millets, Barnyard millets, Fox tail millets and Proso millets).



FINGER MILLET



LITTLE MILLET



PROSO MILLET



KODO MILLET



FOXTAIL MILLET



BARNYARD MILLET



SORGHUM



PEARL MILLET (BAJRA)



BROWNTOP MILLET



Millets capture enormous amount of nutrients to eliminate micro-nutrient deficiencies as it contributes 30-40% inorganic micro-nutrients which are very essential for human being. Millets contains 8-19% proteins, 1.2 g of dietary fibre/100 g of millets, antioxidants and fat (3-8%) with higher digestion properties. Millets also contain huge number of vitamins like riboflavin, niacin as well as thiamine and other mineral nutrients like K, P, Ca, Zn and Fe (2.3 g/100 g of millets). Millets have huge quantity of slowly digestible starch (SDS) and reactive species (RS) that consequently reduced the glycemic index (GI).

Millets are generally photo-thermo insensitive crops and have the capacity to withstand the both biotic and abiotic stress. It can grow easily to low fertile soil without any external inputs. As millets are C₄ crops, so, it does not require more water for cultivation. That's why, millets are known as climate resilient crops.

Millets are very short duration crops and it generally requires 12-14 weeks to complete their life cycles. That's why millets are more economical for farmers point of view and it might increase rotational intensity of the land for better utilization of cultivable area.



Fig: Finger millet cultivation in Aizawl, Mizoram

In the farming communities, for increasing proper marketable value of millets, proper value addition should be required through improved processing of millets. The post-harvest processing, value addition and capacity building of farmers through institutional training might bridge the



linkage for improving farmers profitability which ultimately lead to acceptance of millet cultivation by the farmers.

There are several advantages of millet processing. These include i) improved digestibility ii) greater food safety iii) improved organoleptic properties (like colour, texture and taste of millets) iv) maximize nutritional availability.



The college of Horticulture, Thenzawl, Mizoram also organized 2 days training for production and processing of millets with the objective of making awareness about the production,



processing and value addition of millets towards the tribal communities of Mizoram as sponsored by Indian Council of Agricultural Research-ATARI Zone VII.



This training provided about the valuable insights about the millet production as well as processing and reduce over-cost of cultivation of the farmers by reducing the application of excessive fertilizers.

Conclusion

Millets may be adopted in the North-East India for increasing awareness about the millets production, processing, value addition, supply chain and including it in the medicinal values by the local farming communities of Mizoram.

