

Millet recipe contest: A community engagement model

for exploring the millet diversity in Jharkhand

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Jharkhand boasts of diverse agro-climatic zones, spanning from hilly terrain to plains. Millets, characterized by their adaptability to various ecological conditions, thrive in different parts of the state. These small-seeded grasses, cultivated for millennia worldwide, are hardy crops resilient to harsh conditions like drought and poor soil fertility. Despite their suitability for diverse climates, millet cultivation has dwindled among Jharkhand's indigenous communities over the past few decades. This decline, coupled with persistent issues of food security and malnutrition, particularly in tribal areas, presents an ongoing challenge. Addressing the dual crisis of biodiversity loss and nutritional security requires tapping into the traditional wisdom of local communities and promoting indigenous crops. The inclusion of millets in the food system becomes crucial for a holistic nutritional approach amid the challenges posed by climate change. In line with the International Year of Millets, aiming to generate domestic and global demand while reintegrating millets into the common diet, the Krishi Vigyan Kendra Ranchi, under the auspices of ICAT-ATARI Patna, has organized a series of recipe contests among rural and farm women in Ranchi district. Participating in millet-based recipe contests, for the village women, presents a unique opportunity to celebrate their rich agricultural heritage and incorporate locally grown millets into their daily lives. These contests not only showcase the diverse culinary traditions of the region but also empower villagers to embrace sustainable and nutritious food choices. By participating in these contests, farm women can share their traditional knowledge of millets, fostering a sense of community and cultural pride. This initiative aims to explore the rich biodiversity of millets and enhance practices related to growing and consuming millets among the local population. In a state where agriculture plays a crucial role in the livelihoods of many, promoting millet cultivation and consumption through millet-based contests can contribute to the economic well-being of local farmers.

Keywords: Biodiversity, Jharkhand, Krishi Vigyan Kendra, Millet, Recipe

NUTRITIONAL security and food security are interconnected concepts that are vital for the well-being of individuals, communities, and nations. India food security is mainly dependent on current staple foods rice and wheat, which are not sufficient to overcome the challenges. The recent publication by the Lancet Commissions recognize the importance of identifying healthy and environmentally sustainable diet like millet which are known for their resilience to climate change and their rich nutritional content. Interestingly, the paper highlights that out of the 14,000

edible plants available; only three crops viz. rice, maize, and wheat contribute to 60% of our calorie intake. On the other hand, the SDGs 2030 aim to eliminate all forms of malnutrition by 2030. To achieve this ambitious goal, it is crucial to intervene and replace a significant portion of our current diet, which heavily relies on rice, wheat, and maize, with highly nutritious grains like millets.

Millets have a significant connection to Jharkhand, both historically and in the present context. It has been a traditional food crop in Jharkhand for generations. Millets are known for their adaptability to different

ecological conditions, making them suitable for cultivation in various parts of the state. But millet cultivation has been steadily declining since India's Green Revolution in the 1960s, and has come close to near abandonment over the course of the last few decades among Jharkhand's Indigenous communities. According to the National Family Health Survey (NFHS-5), as of 2019-21, 56.8% of pregnant women and 67.5% children in Jharkhand under five years are anaemic. This dual crisis of biodiversity loss and nutritional security can be addressed through the traditional wisdom of local communities and indigenous crops. It is crucial to promote the inclusion of millets in the food system to ensure a more holistic approach to nutrition in the face of climate change.

In order to enhance the practices of growing and consuming millet crops, under the guidance of ICAR-ATARI Patna, Zone IV, KVK Ranchi has organized 3 recipe contest among rural and farm women of Ranchi district with the following objectives– (a) to explore and document the millet diversity in various food preparations, (b) to assess the awareness and knowledge of the nutritional benefits of millets among the local population, (c) to study the traditional uses, and their significance in local culture and (d) to promote their consumption for better health and sustainable agriculture.

Implementation of the programme

The Millet Recipe contest program was conducted in three purposively selected villages namely Gutru (Burmu block), Soso and Khaksitoli (Angara block). Village selection was done on the basis of quantum of millet cultivation and diversified millet diets by the population. The program was done in two phases as mentioned below:

- **Pilot survey:** As part of the programme, a comprehensive survey covering a representative sample of households was conducted by using approved questionnaire provided by Indian council of Agricultural Research (ICAR), New Delhi to assess the cultivation practices and consumption patterns of millets. The survey was done 15 days prior to competition in the selected villages. Rural and farm women were gathered at a common place as they were priorly informed about the meeting from KVK. Information was recorded by one-to-one interaction. In this program, they were made aware about health benefits of millet such as it regulates blood sugar, supports digestive health, and provides essential nutrient for overall well-being, and they were suggested to create a millet-based value-added food so that they could learn about the different food processing techniques on millet crops.

Community engagement through recipe competition

- **Planning and preparation:** On mutual consensus, a suitable date and venue for the contest was decided in the village premises at community centre to

accommodate participants and spectators. A written formal consent was also taken prior to organization of the event from the concerned authority.



A view of millet recipe competition at Gutru village

- **Establishment of collaboration and linkage:** The KVK scientists remained in touch with the with rural institutions (NGOs, Panchayat, Schools, Anganwadi) to gain support and resources.
- **Promotion of the contest:** The awareness was created by various social media platforms like posters on community bulletin boards, partnership with local markets, and educational institutions as well as advisement through local newspapers, radio stations channels for coverage.
- **Event execution:** The event coordinated by the Head of the KVK along with participatory team of scientists with other stakeholders like Gaon Burhas, Anganwadi Head, School headmaster, Panchayat members to execute the contest. Rural women were mobilized in a participatory manner to demonstrate their culinary creativities in making traditional foods using the best possible options from indigenous biodiversity of millet. A simple on the spot registration was done for all the participants including details like name, contact information, and the type of millet dish they brought.
- **Judging and evaluation:** A local committee involving five prominent experts, like VDO, Gram pradhan,

scientist from KVK Ranchi, experts from IFFCO, and local leaders evaluated the dishes. The participants' recipes were evaluated on 9 points for seven different parameters such as appearance, taste, texture, flavour, creativity, ease of preparation, and overall acceptability. The scores for each quality were total and averaged. The top five winners from each contest were declared based on the judges' scores. Throughout the competition, every detail regarding their dish, including the components used, the preparation process, the mode of consumption, etc were recorded and the recipe contest scorecard was also assessed.

- **Awards and recognition:** At the end of event, prizes were distributed on the basis of the scores awarded for different parameters along with knowledge variability on cooking and processing. The top five winners from each contest were declared based on the overall scores. The chief guest of the program presented the prizes and a certificate of achievement to the winners.



Judging and prize distribution during the contest

- **Documentation:** The various recipes were compiled under different categories into traditional millet recipes, innovative millet dishes, and desserts. Winner's stories were also documented behind each recipe, highlighting the cultural significance and personal connections to millets. The media coverage during and after the event was also done and pictures, videos, and participant interviews were also shared on social media and local news outlets.

- **Follow-up:** The feedback from participants and attendees were also collected to improve future events. The winners were further studied in greater details and taken as biodiversity ambassadors for the promotion of millets as wonder crops in village level planning on biodiversity conservation led adaptation programmes.

Outcomes of the programme

The millet recipe contest was conducted in the Gutru, Soso and Khaksitoli villages on 23rd August, 3rd October, and 28th October, 2023 respectively. The event saw the enthusiastic participation of more than 100 rural farm women. In each village, participants prepared and showcased up to 45-50 types of (conventional and contemporary processed) food using millets as a major ingredient such as *roti*, *ladoo*, *sev*, *dhuska*, *idli*, *pakodas*, and many more. The major findings of the study are discussed below.

Total land under millet cultivation

In terms of cultivable land for millets, it was observed that in Gutru village, almost 50% of farmers are growing millets in 40 to 80 dismil (Table 1). Similarly, in Soso village, maximum farmers (43.9%) are growing millets in 40 to 80 dismil. Whereas in Khaksitoli village, more than 60% of farmers are growing millets in > 80 dismil area. This leads us to the fact that more than half of the farmers cultivating millets are medium or semi-medium category and the rest half fall into the category of marginal or small farmers.

Table 1. Land (Dismil) under millet cultivation

Land for millets	Gutru	Soso	Khaksitoli
<40 dismil	26.7%	33.2%	12.0%
40-80 dismil	49.6%	43.9%	27.2%
>81 dismil	23.7%	22.9%	60.8%

Millet based traditional food knowledge

Each region has its own traditional food habits. Traditional foods are those which are locally accessible by indigenous communities and can be prepared by utilizing their traditional knowledge in the natural environment. This survey results demonstrated that 100% of rural and farm women from selected villages have knowledge about their millet based traditional foods. Specifically, *Madua Chilka* and *Dhuska* routinely prepared by 80% women, 10% making *ladoo*, *gatha* and 10% making *halwa*, *sev* etc.

Diversity in use of millet

In millet crop, *ragi* (Finger millet) is one of the major crops also known as '*Madua*' in local language holding significant importance as a traditional millet crop in rainfed farming system of Jharkhand state. In order to rejuvenate the consumption of finger millet in the daily diet of tribal individuals in the state, a wider range of recipes that cater to their preferences adding diversity and value to the specific dietary needs of the population is required.

Table 2. Diversity in use of millet

Range	Gutru	Soso	Khaksitoli
2-4 varieties	24%	23%	59%
4-6 varieties	64%	68%	34%
>6 varieties	12%	9%	7%

This data represents the distribution of responses across different ranges of varieties of use of *Madua* for three selected villages: Gutru, Soso, and Khaksitoli. Each row corresponds to a specific range, and the percentages indicate the proportion of each category within that range.

All three selected villages show millets are predominantly consumed as a staple food, diverse millet-based recipes are popular within households. In Gutru and Soso village, maximum population i.e 64% and 68% respectively, use *Madua* in 4-6 variety of dishes whereas in Khaksitoli, maximum 59% population use *Madua* for making 2-4 variety of dishes.



Varieties of millet-based recipes presented during the contest

Cultural significance of millet

Millets are culturally embedded within Jharkhand's indigenous communities which play a significant role in various cultural rituals associated with birth to death and honouring ancestors. This survey study resulted in 100% of women using *Madua* grain on some specific occasion. Maximum (90%) population use millet specifically *Madua* in *Karma* and *Jitiya* festivals whiles other (10%) use it in *Sarhul puja*.

Status of habitat conservation of millets

The conservation of millets involves seed collection, multiplication, seed distribution and farmer-to-farmer exchange mediated through the traditional seed storage system. In this study, it was found that in all three villages, majority of population (60%) produce millet in their field and conserve them through traditional approach for future production.

Source of knowledge about learning

This study revealed that rural and farm women perceived information about millet cultivation and processing from both formal and informal sources like SHG members, family member, neighbours, local leaders, KVK training, TV, Radio, social media etc. In all three selected villages, maximum (80%) villagers get millet related information from Krishi Vigyan Kendra (KVK) through training program, kisan mela, exhibitions etc. Nearly 10% villagers perceived information from TV, mobile and social networking sites and 10% from other sources like family or neighbouring members, SHG group.

Traditional food knowledge from native place

As per the data collected, 80% of the women learnt *Madua* roti from their native place, 10% of them learnt Chilka and Gatha and 10% learnt laddoo/barfi/halwa/sev from their houses.

Membership of indigenous institutions

As per our survey, 85% of women were part of one or the other indigenous institutions such as JSLPS, *Maa Santoshi Mahila Samiti*, *Nari Vikash Yojana*, *Kisan Vikash Mahila Samiti* and many more.

Habitat/Conservation of millets

In Gutru, Soso and Khaksitoli village, about 60% of farmers produce millet in their field and 40% of them buy from markets.

SUMMARY

Millets, well-suited to Jharkhand's climate, can become a staple crop, providing resilience against environmental challenges and ensuring food security for communities. The emphasis on millet-based recipes aligns with the need for sustainable agriculture in Jharkhand becomes a platform not just for cooking skills but also for preserving and passing down culinary wisdom from one generation to the next. Encouraging the cultivation and consumption of millets can have positive implications for the environment and the overall well-being of Jharkhand's villagers. In conclusion, millet-based recipe contests in Jharkhand go beyond the kitchen; they represent a celebration of cultural heritage, a boost to local economies, and a step towards sustainable living. Embracing millets in everyday cooking can foster a stronger connection to the land, promote health, and contribute to the resilience of rural communities in Jharkhand.

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