

Economic Upliftment through Millet Value Additional Training for farmers and Rural Youth of Tiruvallur district Tamil Nadu

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ABSTRACT: In Tiruvallur district, millet including finger millet, pearl millet, sorghum and maize is cultivated in 947 hectares with the production of 2683 tonnes. The present study was conducted by Krishi Vigyan Kendra, Tiruvallur to assess the impact of vocational training programmes on value addition in millets on commercial scale and for self-employment. The data revealed that just after completion of training, a maximum of beneficiaries had gained a medium level of knowledge of about 60.46% and percentages of low level and high level of knowledge were 3.87% and 35.65% respectively. Adoption analysis after training indicated that 29.03% have started small scale production of value added products in millets and spice mixes. One notable challenge was the limited availability of resources and infrastructure for scaling up commercial millet production. Additionally, the socio-economic constraints of the farmers, such as access to finance and market linkages. Thus, it can be inferred that exposure to training had increased the knowledge of participants regarding value addition in millets and the technical support through KVK is being facilitated to the farmers and rural youth of Tiruvallur district.

Keywords: Millet, Value Additional, Entrepreneurship Development Program, Women Empowerment, Rural Youth and KVK Training.

INTRODUCTION

Millets “the forgotten grains of India” have been an integral part of Indian agriculture and food for centuries (Chera, 2017; Lalitha *et al.*, 2022). Nowadays millet gaining attention for a healthy lifestyle among peoples and is referred to as super foods (Shah *et al.*, 2021), nutriceals (Singh *et al.*, 2020) and immunity boosting foods. They are climate resilience crop that holds significant promise in enhancing food security, nutrition and the livelihoods of farmers in rural areas. Recent years have witnessed a large interest in promoting millets (Sujith *et al.*, 2023) as a sustainable crop due to their resilience to adverse weather conditions (Shalley *et al.*, 2022), less water requirements (Bhatt *et al.*, 2016), less chemical fertilizer usage (Kole *et al.*, 2015), rich nutritional content, gluten free(Thakur & Tiwari 2019 ; Amadou *et al.*, 2013) and huge demand in both domestic and Vijayashanthi *et al.*,

global market. The concept of value added agriculture is fundamentally market-driven and millets occupy a unique position among cereals as they are a rich source of vital nutrients such as calcium, dietary fibre, protein and polyphenols (Devi *et al.*, 2011). The dynamic nature of markets necessitates a well trained and skilled manpower to cope up with the demands of rapidly changing consumer preferences. Training programs are considered integral components of a strategy for organizational development and growth, particularly in the context of entrepreneurship development (Pawar *et al.*, 2020).

The demand and marketing opportunities for value added millets are high in Tiruvallur as it is in close to Chennai which shows promising marketing opportunities. According to the Tamil Nadu Agriculture Statistics Book 2020-2021, millets such as finger millet, pearl millet, sorghum and maize are cultivated in 947

hectares with the production of 2683 tonnes in Tiruvallur district. Recognizing the potential of this opportunity the Krishi Vigyan Kendra (KVK) Tiruvallur has taken the initiative to equip farmers and rural youth with the knowledge and skills required to capitalize on millet based value addition practices.

As part of this endeavor, KVK Tiruvallur has conducted five day vocational training courses covering topics such as millet cultivation technologies, newly released varieties of millets and value addition in millets. The Evaluation of the impact of such self-employment oriented programs is essential to understand their effectiveness in enhancing income levels and improving the standard of living among participants. This study aims to analyze the outcomes and effects of these training programs on farmers and rural youth in Tiruvallur District, with a focus on their capacity to capitalize on millet-based value addition opportunities. By conducting this assessment, we seek to gain valuable insights into the potential transformation of the alternate agricultural crop in the Tiruvallur district and its impact on the livelihoods and food security of its populations. Moreover, the findings will guide future strategies, initiatives and policies aimed at promoting millet cultivation, processing, value addition and contributing to sustainable agricultural development and improved nutrition in the region while empowering local communities.

METHODOLOGY

The study involved 387 farm women and rural youth who participated in skill training and three-day Entrepreneurship Development Program (EDP) sessions on value addition to millets and fruits conducted by Krishi Vigyan Kendra (KVK), Tiruvallur, from 2020 to 2022. The training programs focused on processing and value addition techniques for small millets, such as health mixes, multigrain mixes, millet balls, murukku, and various bakery items incorporating millets. Among the 387 participants, 62 beneficiaries were selected for detailed skill development in processing value-added products. These 62 beneficiaries underwent hands-on training during three EDP sessions conducted in 2022. The additional training included topics related to nutrition education, the importance of value addition in food products, FSSAI (Food Safety and Standards Authority of India) certification, packing, labeling and digital marketing strategies. The study adopted an exploratory research design and used a pretested interview schedule as the primary data collection tool. Data collection encompassed demographic information, pre training knowledge and skills assessment, post training knowledge and skills evaluation and an analysis of the adoption level, measuring the practical application of the acquired skills.

Data collected through the interview was quantitative and qualitative analysed. Descriptive statistics will summarize demographic data and changes in

knowledge and skills before and after training. The qualitative analysis will capture insights and observations from the participants regarding their training experiences and challenges. The study will present findings regarding the impact of the training programs on participants knowledge and skills and assess the extent to which they have applied their newly acquired skills. These findings will inform the effectiveness of the training programs and provide recommendations for further empowering rural women and youth in the field of value-added millet and fruit processing. Through this methodology, the study aims to evaluate the impact of the training programs on skill development and entrepreneurship in the context of food processing and value addition for rural women and youth in Tiruvallur district.

RESULTS AND DISCUSSION

Demographic profile of the participants. The study examined the demographic profile of the 387 participants who engaged in value addition training programs in millets and fruits. The results are summarized in Table 1, which highlights significant characteristics of the trainees and their corresponding percentages. It clearly shows that among the 387 participants who mostly attended the training were women (67.70%). Empowering women through training programs not only enhances their contribution to the agricultural sector and entrepreneurship but also aligns with gender equality goals. The age distribution revealed that 21.96% of participants were categorized as young age (below 30 years), 69.25% comes within the middle age group (30-50 years) and 9.30% were considered old age (above 50 years). This suggests that the training programs attracted participants from various age groups with a majority falling in the middle-age category. Engaging various age groups will help to transfer knowledge as an intergenerational approach. Moreover, involving older participants ensures the transfer of valuable indigenous wisdom. This approach promotes resilience and continuity in development practices. A noteworthy 46.51% of the participants had education up to the secondary school level, while 31.00% had middle school education, 16.02% had higher secondary education, and only 6.45% had completed primary school. This mixed range allowed individuals with different educational levels to benefit from the training and breaking down education barriers to participation. This demonstrates the diversity in educational backgrounds among the participants, indicating inclusivity in the training programs. The Majority of participants (54.11%) earning is Rs. 1 to 2 lakh as annual income. Focusing on those with relatively lower income will lead to economic upliftment. Simultaneously, offering an opportunity to participants with higher incomes promotes knowledge dissemination and encourages investment in value added millet products.

Table 1: Profile characteristics of the participants (n= 387).

Sr. No.	Profile characteristics	Numbers	Percent (%)
1.	Gender		
	Male	262	67.70
	Female	125	32.30
2.	Age		
	Young (<30 years)	85	21.96
	Middle (30-50 years)	268	69.25
	Old (>50 years)	36	9.30
3.	Education		
	Primary school	25	6.45
	Middle school	120	31.00
	Secondary school	180	46.51
	Higher secondary	62	16.02
4.	Annual Income		
	Low (< 1 lakh)	122	31.52
	Medium (1-2 lakh)	204	54.11
	High (>2 Lakhs)	61	15.76

Knowledge gain after acquiring training with respect to the schedule of programme. Knowledge gained from various lectures on a variety of value added products with millets was analyzed by conducting pre and post evaluation tests. The results on pre-training depicted that the respondents for very low level and low level of knowledge were about 28.42% and 52.97% respectively and respondents with a medium level of knowledge were 16.53% on value addition of small millets. When post-training assessment indicated that the respondents gained some knowledge on value addition of small millets and there was zero percentage of respondents for the very low level of knowledge. There was a significant reduction

in the percentage of participants with very low knowledge levels (from 28.42% to 0%) and an increase in the percentage of those with medium knowledge levels (from 16.53% to 60.46%) (Table 2). Pandey *et al.* (2017) reported that the majority (63.33%) of trainees have a high level of knowledge regarding value addition followed by 36.66% of respondents having a medium level of knowledge. The training program shows a positive impact and they effectively conveyed knowledge and improved participants understanding of value addition in millets. It also supports the value of investment in vocational training for rural populations will enhance the knowledge and adoption of trainees.

Table 2: Knowledge gainscore of participants.

Sr. No.	Knowledge level	No. of Respondents (n=387)	Pre evaluation (%)	No of Respondents (n=387)	Post evaluation (%)
1.	Very low level (<10%)	110	28.42	00	00
2.	Low level 10% to 30%)	205	52.97	15	3.87
3.	Medium level (30% to 60%)	64	16.53	234	60.46
4.	High level (>60%)	8	2.06	138	35.65

Among the participants (62 Nos.) of three day EDP, pre-exposure and post-exposure scores were computed for all the major components of millets value addition. In the pre-evaluation test, the knowledge range was very low 11.29%, 16.13% and 17.75% for Branding, Packing, FSSAI certification, Economics on value addition unit and nutritive value of millets respectively. Post evaluation training score of various practices ranged from 88.71% to 64.52%. Hence, the knowledge score gained by participants after training was more satisfactory in all the components. Sufficient gain in knowledge regarding the nutritive value of millets, extruded products, bakery products preparation with

millets, branding and economics was obtained. It was observed that 77.42% of the respondents were deviating in knowledge on branding, packing and certification procedures which are important for product quality, safety and marketability followed by economics, nutritive value, extruded products and bakery products (Fig.1). This knowledge empowerment holds promise for promoting sustainable agricultural practices, economic development and rural entrepreneurship and economic growth in rural communities. Therefore, it may be concluded that respondents succeeded in acquiring knowledge after exposure to training on millet value addition.

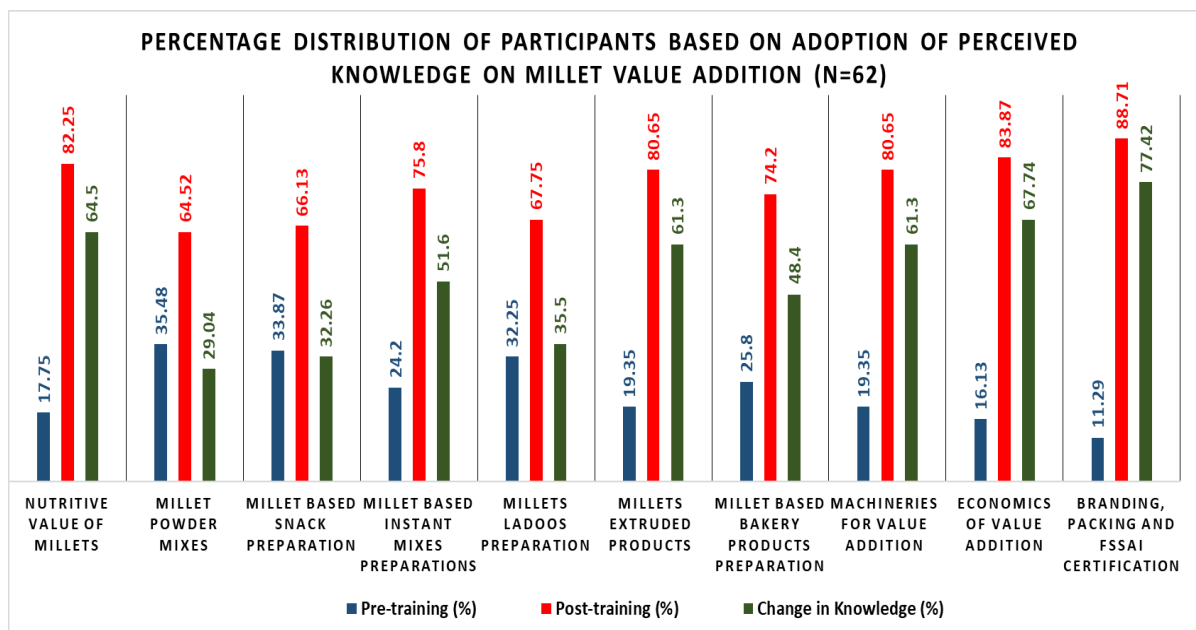


Fig. 1. Percentage Distribution of Participants Based on Adoption of Perceived Knowledge on Millet Value Addition (n-62).

Impact of training on the adoption of value addition in millets. The adoption of value addition in millets and small millets on a commercial scale by the participants was evaluated periodically. Among the 62 participants of the EDP programme, 18 participants (29.03%) have started small scale production of value added products in millet and spice mixes. By initiating small-scale unit participants potentially create job opportunities, support local economies, and contribute to food security by producing nutritious millet-based products. This is a significant finding as it shows that the training was not only increased participants theoretical knowledge but has also empowered them to apply that knowledge in real life situations. The results indicated that skill training on value addition was effective in enhancing the knowledge and adoption of trainees. Therefore, it could be employed that more and more such training programmes can have a wider societal impact by empowering more rural women and the farming community. Empowering women in agriculture can have significant positive effects on gender equality and food security.

CONCLUSIONS

There is a tremendous potential for value addition and marketing of value added products of millets and an increasing demand for quality value added products at a competitive rates both in the domestic and export markets. Hence commercial production of value added products in millets is being emphasized to the farmers through training conducted by Krishi Vigyan Kendra, Tiruvallur which shown better influence on the farmers and rural youth to practice commercial production and marketing of value added products as agriculture allied activity to increase their income which in turn improves their standard of life.

FUTURE SCOPE

The future holds exciting prospects for the value addition and marketing of millet-based products. With a growing demand for quality value-added items both in domestic and export markets, the potential for commercial production of these goods is substantial. By focusing on training initiatives, farmers are being equipped with the knowledge and skills needed to embrace commercial production and effective marketing strategies for millet-based value-added products. This shift towards value addition in millets is not only about enhance agricultural output but also about empowering farmers and rural youth.

REFERENCES

- Amadou, I., Gounga, M. E., & Le, G. W. (2013). Millets: Nutritional composition, some health benefits and processing-A review. *Emirates Journal of Food and Agriculture*, 501-508.
- Bhatt, R., Kukal, S. S., Busari, M. A., Arora, S., & Yadav, M. (2016). Sustainability issues on rice-wheat cropping system. *International Soil and Water Conservation Research*, 4(1), 64-74.
- Chera, M. (2017). Transforming millets: Strategies and struggles in changing taste in Madurai. *Food, Culture & Society*, 20(2), 303-324.
- Devi, P. B., Vijayabharathi, R., Sathyabama, S., Malleshi, N. G., & Priyadarisini, V. B. (2014). Health benefits of finger millet (*Eleusine coracana* L.) polyphenols and dietary fiber: a review. *Journal of food science and technology*, 51, 1021-1040.
- Kole, C., Muthamilarasan, M., Henry, R., Edwards, D., Sharma, R., Abberton, M., & Prasad, M. (2015). Application of genomics-assisted breeding for generation of climate resilient crops: progress and prospects. *Frontiers in plant science*, 6, 563.

Lalitha, A., Neela Rani, R., Geetha Reddy, R., Kamalaja, T., & Meena, A. (2022). Knowledge of farm Families on

- Millets in Selected Districts of Telangana State. *Biological Forum—An International Journal (Research Trend)*, 14(3), 1512-1517.
- Pandey, A., Gupta, N., Pandey, A., & Singh, S. (2017). Impact of vocational training on value addition in knowledge and adoption of rural women. *Indian Journal of Extension Education*, 53(3), 36-39.
- Pawar, J., Rajesh, A. M., Pushpa, P., Chikkanna, G. S., Tulasiram, K., & Ambika, D. S. (2020). Impact of value addition training programmes of KVK in Kolar District, Karnataka. *International Journal of Current Microbiology and Applied Sciences*, 9(12), 1475-1481.
- Shah, P., Dhir, A., Joshi, R., & Tripathy, N. (2021). Drivers and barriers in the consumption of alternative staples. A systematic literature review and future research agenda. *British Food Journal*, 123(11), 3726-3759.
- Singh, A., Kumar, M., & Shamim, M. (2020). Importance of minor millets (Nutri Cereals) for nutrition purpose in present scenario. *International Journal of Chemical Studies*, 8(1), 3109-3113.
- Shalley, Gaytri Hetta, Sidharth Baghla and Sakshi, (2022). Nutraceutically Important Millets. *Just Agriculture*, 2(12), 1-9.
- Sujith S., Soumyadish Sahoo, Cheeti Dheeraj, Magham Sathya Hemanth, Sudipa Saha, Atreyee Sarkar and Nupur Niharika (2023). Millet a Nutri-cereal: Nutritional Value, Health Benefits and Value Addition in Dairy Products. *Biological Forum – An International Journal (Research Trend)*, 15(5), 1008-1017.
- Thakur, M., & Tiwari, P. (2019). Millets: the untapped and underutilized nutritious functional foods. *Plant Archives*, 19(1), 875-883.

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