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Capacitating rural women for milk processing

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Abstract

India's dairy business is crucial to maintaining the nation's food and nutritional security. As the population is growing demand for dairy products has increased giving the business a sizable consumer base. The foundation of the Indian dairy industry has been women. Dairy farming has been an increasingly profitable venture for rural women due to the rising demand for milk and milk products in recent times. Given the current scenario it becomes imperative to capacitate rural women in milk processing. Thus the present study was conducted in five villages of Ludhiana viz. Jandiali, Himanyupura, Boparai Kalan, Baini Baringan and Sudhar. Thirty women from each village were selected to make a sample of 150 respondents. A five day's training programme was conducted in each village. Pre and post intervention data was collected and present change in knowledge and skills was studied. Data was analysed using percentage and mean. The results showed that the interventions were helpful in improving the knowledge and skills of the respondents.

Keywords: Dairy, rural women, milk processing, intervention, knowledge, skills

Introduction

Dairy industry in India plays an important role in ensuring food and nutritional security of the country. It is the largest globally, accounting for 23% of global milk production. The industry contributes 5% to the national economy and directly supports more than 8 crore farmers. India's dairy industry has grown significantly over the past 10 years, supported by various initiatives taken by the government. The nation's milk production increased at a CAGR (Compound annual growth rate) of 6.2% from 146.31 million tonnes (MT) in 2014-15 to 209.96 MT in 2020-21 (IBEF, 2022). One of the primary factors propelling the Indian dairy industry is the increasing consumption due to population growth and rising income levels. With the continual expansion of the population, the demand for dairy products is surging, providing a substantial consumer base for the industry. Milk dominates the market as the primary product segment. This is attributed to its essential role in everyday consumption, nutritional importance as a staple food, and its universal cultural acceptance. There is a significant shift towards value-added dairy products like cheese, yogurt, flavored milk, and probiotic drinks. These products offer greater margins and cater to the evolving consumer preferences for health, convenience, and variety. The demand for these products is being driven by increasing health awareness, the rising middle class, and changing dietary habits (IMARC, 2023) [4].

Dairying sector has special significance in making women self-reliant as well as in bringing changes in their social and economic status as dairy has been a traditional family activity in India. Women have been the bedrock of Indian dairy sector in which nearly 70 per cent of the work in dairying is contributed by women. Dairy enterprise is more beneficial for women in rural areas as it enables them to add to the family income while taking care of their own home and livestock oriented task. Increasing demand for milk and milk products in recent years intensifies dairy farming as profitable enterprise for rural woman (IDF, 2022). Given the current situation there is a need to provide women with more opportunities in milk processing through education, training and skill development.

Materials and Methods

The study was conducted in five adopted villages of Punjab Agricultural University, Ludhiana viz. Jandiali, Himanyupura, Boparai Kalan, Baini Baringan and Sudhar. Thirty rural women from low income group with at least primary education and having 2-3 dairy animals were selected from each village as respondents, comprising a total sample of 150 respondents. A pre-intervention survey was done to assess the knowledge and skills of the women engaged in dairy activities. Based on the findings, training programmes were conducted in each of the adopted villages. Each training program was of five days duration which

included institutional visits and competitions, besides hands on trainings on all aspects of milk processing. After the training a post intervention survey was conducted in each village to study the impact of the trainings as well as the change in knowledge and skills of the respondents. Pre and

post knowledge test was conducted and present change in knowledge and skills was studied. Data was analysed using percentage and mean.

Results and Discussion

Table 1: Socio-economic profile

(n=150)

Profile	Category	Total	
		f	%
Age	22-38 yrs.	48	32.00
	39-55 yrs.	83	55.30
	56-72 yrs.	19	12.70
Education	Primary	18	20.67
	Middle	41	27.30
	High school	42	28.00
	Secondary	26	17.33
	Graduate	10	6.70
Caste	General	70	46.67
	SC	71	47.33
	BC	9	6.00
Family type	Nuclear	83	55.33
	Joint	67	44.67
Family size	Small (1-4)	71	47.33
	Medium (5-7)	64	42.67
	Large (>8)	15	10.00
Occupation	Labourer	5	3.33
	Service (G/P)	19	12.67
	Housewife	126	84.00
Land holdings	Landless	83	55.33
	Up to 2.5 acres	43	28.67
	2.5-5 acres	20	13.33
	5-10 acres	4	2.67
Annual family income (Rs.)	< 2 lakh	124	82.67
	≥2 lakh - 5 lakh	26	17.33
No. of animals	1-5	133	88.67
	6-10	12	8.00
	>10	5	3.33

The data in table 1 showcases the socio-economic profile of the women in dairy where more than fifty percent of the women were in 39-55 years of age group followed by 32 percent of the women in 22-38 years of age group while remaining (12.70%) in the age group of 56-72 years. Twenty eight percent of the respondents had education up to high school which was closely followed by 27.30 percent of the respondents who had education up to middle school. Approximately twenty one percent of the respondents had education up to primary level followed by 17.33 percent of the women having education up to secondary level. Only 6.70 percent were Graduate. Almost equal number of respondents belonged to SC (47.33%) and General category (46.67%) while only 6 percent were from BC category. Most of the respondents (55.33%) had nuclear families and 44.67 percent were from joint family. Forty seven percent of the respondents had small family size comprising of up to

four members followed by 42.67 percent of the respondents having medium families of 5-7 members while only ten percent were having large families comprising of more than eight members.

In terms of occupation most of the respondents (84%) were housewife while only 12.67 percent engaged in either government or private sector jobs followed by 3.33 percent of the women who were labourers. More than fifty percent of the respondents were landless while 28.67 percents were having up to 2.5 acres of land followed by 13.33 percent having land holding up to five acres and only 2.67 percent had 5-10 acres of land. Most of the respondents (82.67%) were having income less than two lakh and the remaining (17.33%) had annual income from 2-5 lakh. Majority of the respondents (88.67%) had up-to five animals while eight percent had 6-10 animals and only 3.33 percents had more than 10 animals.

Table 2: Pre and post intervention change in knowledge of respondents, (n=150)

Knowledge of	Pre intervention f (%)	Post intervention f (%)	Percentage change (%)	Mean percentage change (%)
Flavoured milk	7 (4.67)	143 (95.33)	90.6	68.6
Milk processing enterprise	46 (30.67)	150 (100.00)	69.3	
Nutritive value of milk	13 (8.67)	144 (96.00)	87.3	
Milk chilling	11(7.33)	142 (94.67)	87.3	
Khoa making	134 (89.33)	150 (100.00)	10.6	
SHG formation	75 (50.00)	150 (100.00)	50.0	
Role of starter	11 (7.33)	148 (98.67)	91.3	
Utilization of ghee residue	140 (93.33)	150 (100.00)	6.60	
Economics of milk product	15 (10.00)	132 (88.00)	78.0	
Marketing of milk products	8 (5.33)	127 (84.67)	79.3	
Financial schemes	-	122 (81.33)	81.3	
Checking quality of milk	9 (6.00)	136 (90.67)	84.6	
Mozzarella cheese	-	98 (65.33)	65.3	
Packaging of dairy products	-	110 (73.33)	73.3	
FSSAI	-	112 (74.67)	74.6	

To assess the change in knowledge of the respondents, pre and post intervention data was collected. Mean percentage change in the knowledge was found to be 68.6 percent which indicated that 68.6 percent of the respondents had change in their knowledge after getting intervention. Before intervention none of the respondents had knowledge of financial schemes, mozzarella cheese, packaging of dairy products and FSSAI, while a few had knowledge of marketing of milk products, checking quality of milk, role of starter, milk chilling, nutritive value of milk, economics of milk product and milk processing enterprise. However 50 percent of the respondents had knowledge regarding formation of SHGs. Most of the respondents had knowledge about utilization of ghee residue (93.33%) and Khoa making

(89.33%) as these are traditionally made at home. It was found that post intervention most of the respondents had increased knowledge regarding processing of milk products. In case of mozzarella cheese and packaging of dairy products, the increase in knowledge after intervention was not high due to the technicality and cost of the process. Thus training interventions can be helpful in changing the knowledge. One such study was also done in Gujarat by Dairy Vigyan Kendra (DVK) in which DVK provided trainings to rural dairy farmers to improve their socio-economic conditions. The results showed that with training intervention the farmers were able to significantly increase the milk production which resulted in improving their economic conditions (Misra *et al.*, 2023) ^[5].

Table 3: Pre and post intervention change in skills of respondents, (n=150)

Skills (Preparation of)	Pre intervention f (%)	Post intervention f (%)	Percentage change (%)	Mean percentage change (%)
Flavoured milk	5 (3.33)	138 (92.00)	88.7	58.5
Paneer	58 (38.67)	150 (100.00)	61.0	
Whey drink	-	124 (82.67)	82.6	
Utilization of ghee residue	120 (80.00)	150 (100.00)	20.0	
Khoa	76 (50.67)	137 (91.33)	40.6	

The mean percentage change in the skills of the respondents after intervention was 58.5 percent which signifies that 58.5 percent of the respondents had change in skills after getting intervention. Before intervention, majority of the respondents (80%) were skilled in utilization of ghee residue while 50 percent of the respondents were skilled in khoa making. Processing of milk to make Paneer was done by some of the respondents (38.67%), flavoured milk was prepared by very few respondents (3.33%) while none of the respondents prepared whey drink. However post intervention most of the respondents were skilled in preparation of all the products. A study conducted in Nadia district of West Bengal also shows similar results where significant changes were found in knowledge, attitude, and adoption of scientific dairy farming practices after extension interventions to the dairy farmers (Garai *et al.*, 2017) ^[1]. In the fields other than dairy also pre and post intervention programmes have proved beneficial for the trainees. One such intervention programme was conducted by Shaban *et al.*, (2023) ^[6] in which the effects of intervention on knowledge and practice of rural mothers towards their

children home injuries was studied. The findings revealed that these interventions had positive impact on rural mother’s understanding child home safety and their behaviors in it as more preventive measures for child home safety were used following the intervention.

Conclusion

Women’s entrepreneurship is both about women’s position in society and about the role of entrepreneurship in the same society. Increased participation of women in the training and skill development programmes is a prerequisite for improving the position of women in society. The rural women are having basic indigenous knowledge, skill, potential and resources to establish and manage enterprise. The need is to scientifically train them and polish their skills. By giving proper training which includes packaging and marketing aspects as well, women can be empowered to start micro-enterprises. Micro-enterprises not only enhance national productivity, generate employment but also help to develop economic independence, personal and social capabilities among rural women. Thus for women to

undergo a radical transformation from merely a homemaker to a dynamic multifaceted personality contributing to the socio-economic growth worldwide, it is imperative to provide them timely and necessary training and skills.

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References

1. Garai S, Maiti S, Meena BS, Ghosh MK, Bhakat C, Dutta TK, *et al.* Impact of extension interventions in improving livelihood of dairy farmers of Nadia district of West Bengal, India. *Tropical Animal Health and Production.* 2017;49:641-648. Available from: <https://doi.org/10.1007/s11250-017-1244-5>
2. India Brand Equity Foundation (IBEF). Digitalization of India's dairy farming; c2022 [cited 2024 Feb 7]. Available from: <https://www.ibef.org>
3. International Dairy Federation (IDF). Women and dairy; c2022 [cited 2024 Feb 7]. Available from: <https://fil-idf.org>
4. International Market Analysis Research and Consulting Group (IMARC). Dairy Industry in India 2024 Edition: Market Size, Growth, Prices, Segments, Cooperatives, Private Dairies, Procurement and Distribution; c2023 [cited 2024 Feb 7]. Available from: <https://www.imarcgroup.com>
5. Misra H, Parida Y, Yadav D, Prajapati JB, Sontakke A, Krishnan S, *et al.* Impacts of Training Rural Dairy Producers in India: Role of Dairy Vigyan Kendra. *International Journal of Rural Management*; c2023. Available from: <https://doi.org/10.1177/09730052231157138>
6. Shaban MM, Sharaa HM, Nashwan AJ. Effect of community-based intervention on knowledge and practice of rural mothers toward children home injuries. *International Journal of Africa Nursing Science.* 2023;19:100593. Available from: <https://doi.org/10.1016/j.ijans.2023.100593>