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Awareness and Adoption of Dairy Promoting Schemes among Dairy Farmers in Punjab

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ABSTRACT

The study was conducted during 2024 (February-March) among dairy farmers of Ludhiana and Kapurthala district of the Punjab, India to analyse the level of awareness and adoption of dairy promoting schemes and factors influencing adoption of dairy promoting schemes. Two districts Ludhiana and Kapurthala were selected conveniently. Total 120 respondents were selected using snowball sampling method. Results of the study revealed that majority of the respondents were male farmers. The majority of dairy farmers had (44.20%) less the five year of dairy experience followed by (35.80%) had ten year of dairy farming experience. The majority of farmers (45.80%) had less than 20 dairy animals followed by (38.30%) had 20–50 animals. Only (30.8%) farmers were aware and familiar with DD8 dairy scheme. Scheme help in improve welfare and health of dairy animals (3.44) followed by dairy farmers understand they have resources to adopt and utilize benefits of schemes (3.40) and they understand scheme help in increasing farm size in terms of animals and productivity (3.36) were important benefits of the schemes. There was lack of awareness about scheme (3.75) followed by, complexity in documentation process (3.73), inadequate extension services and training programs (3.66) and the rates of subsidy were low which affect adoption of scheme (3.34) were reported important factors which affect adoption of dairy schemes among farmers.

KEYWORDS: Dairy promoting scheme, awareness, dairy farmers, knowledge, adoption

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Data Availability Statement: Legal restrictions are imposed on the public sharing of raw data. However, authors have full right to transfer or share the data in raw form upon request subject to either meeting the conditions of the original consents and the original research study. Further, access of data needs to meet whether the user complies with the ethical and legal obligations as data controllers to allow for secondary use of the data outside of the original study.

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1. INTRODUCTION

Dairy cattle plays important role to upsurge farmers household income and nutritional security. Dairy farming plays an important role in sustaining livelihoods in rural India (Anonymous, 2024). The various scheme of government with aims to support and providing dairy farmers with the opportunities of getting a fair return to their investment. The advance equipment such as feed bunk, groomer, shredder, water bowl system, heat detector in animals should be available in the Indian market at an affordable price with the help of government supports (Gayathri et al., 2023). Dairy farmers face several challenges, like limited access to markets, and disease outbreaks, the level of education is a positive signal for the future of the dairy industry (Rehman and Mumtaz, 2023). However, understanding and acknowledging the emergence of modern dairy farms is important to understand the development of value chains in the dairy sector (Burkitbayeva et al., 2021).

Sankhala et al. (2000) revealed the overall extent of knowledge of the farmers about various facets of scientific dairy practices found to be only (40.80%) highest being (56.58%) in feeding practices, and lowest being (29.09%) in fodder production practice. Felix et al. (2020) concluded construction of dairy shed at a higher height was fully adopted by only (12.50%) and filtering of milk with a sieve or muslin cloth after milking was fully adopted (76.67%) by dairy farmers. Ashwar et al. (2017) revealed inadequate irrigation facilities for growing green fodder for animals followed by a lack of better fields for breeding in villages (97.5%) and inadequate improved artificial insemination (AI) were reported important constraints. Islam et al. (2016) concluded the overall average scores and improved marketing practice adoption index of dairy farmers found to be (1.30 and 65.35%) respectively. Padilla et al. (2021) revealed there is no awareness about milk vermicomposting technology in the Cagayan Valley region, so it has not been implemented. Biswas et al. (2025) concluded that the adoption level of Self Help members was quite better than Non-SHG members due to better education standard. With increasing accessibility to information and communication technology in the villages, is expected to play an important role in disseminating information to farmers in near future (Singh et al., 2015).

Khode et al. (2009) concluded education and socioeconomic status were highly important. Kumar and Prakash (2017) revealed the quality of milk is affected by aspects related to milk composition and hygiene practices. Amruta et al. (2022) concluded precision dairy farming is considered two important pillars of country's economy such as industry and agriculture. Sood et al. (2020) revealed farmers were in the low and medium adoption groups of scientific management practices a large gap was recorded in health care (47.4%), nutrition (42.9%) and calf care management (31%). Development of suitable technologies, extension activities should be commenced to achieve the desired improves in milk production and processing at the grassroots level (Panicker et al., 2020). High level of technical knowledge and adoption of improved animal husbandry practices was observed by farmers of integrated dairy development project (2005). Elkarim et al. (2007) concluded qualified extension workers to train extension agents at village level to increase level of awareness about best management practices. Vaish and Tripathi, (2019) revealed there is a need to bridge the gap between the technology producers and the users to empower women dairy farmers. Sahu (2017) revealed while adoption level of dairy farmers should be increase through providing technical knowledge about improved dairy management practices. Sukanta et al. (2012) concluded to improve the adoption level of the farmers, strengthening of education level is crucial.

In same way organizational and institutional innovations in dairy production, including selling of milk in group, access to nutrition and credit, can improve the dairy supply chain in the dairy sector (Wairimu et al., 2022). Training programmes should be planned on basis of actual needs and socio-economic status of potential dairy trainees (Sharma et al., 2014). In this context this study aimed to analyse the level of awareness and adoption of dairy promoting schemes and to analyse the factors influencing adoption of dairy promoting schemes.

2. MATERIALS AND METHODS

The study was conducted during 2024 (February-March) among dairy farmers of Ludhiana and Kapurthala district of the Punjab. Two districts Ludhiana and Kapurthala were selected conveniently. Primary data was collected through a pre-tested and pre structured questionnaire. Dairy farmers were having different herd size were selected. From both Ludhiana and Kapurthala districts, (60 from each district with distinct hard size) dairy farmers were selected through snowball sampling. Hence a total of 120 dairy farmers were selected and surveyed. Questionnaire contained questions pertaining to farmers' awareness and adoption of dairy promoting schemes in Punjab. Questions were specifically designed to get in depth information about the demographic profile of the respondents, awareness about dairy schemes, and factors affecting adoption of schemes.

Respondents were asked scale based questions. Respondents were asked to provide response on five-point Likert scale ranging from 1 to 5 where (1 represents strongly disagree and 5 represents strongly agree). Collected data converted into master table which facilitated tabulation of the data

in the desired form. The collected data were then grouped into tables and frequency, per cent, mean, standard deviation was calculated. One sample t-test was used for the analysis of collected data.

2.1. Limitations of the study

The study based on survey methodology suffered from basic limitation of possibility of differences between what was recorded and what was truth, no matter how carefully the questionnaire has been designed and data has been collected. As survey method was employed to carry out the study, so it suffered all the limitations of the survey method. The information and fact provided by respondents might be biased. Limited sample size was selected due to shortage of time and resources.

3. RESULTS AND DISCUSSION

Table 1 revealed demographic profile of the respondents accordingly Table 1 the majority of the respondents (90.80%) were male farmers followed by (9.20%) were female. The majority of farmers (55%) were between 30–40 years age groups followed by (35.80%) were 20–30 years old and (8.30%) were 40–50 year old. The majority of farmers had education up to high school (51.70%) followed by (29.20%) had primary school education. The majority of the farmers had 0–5 year of experience in dairy (44.20%) followed by (35.80%) had 5–10 year experience in dairy. The majority of farmers (45.80%) were having less than 20 animals herd size, followed by (38.30%) were having 20–50 animals. The majority of the farmers (52.50%) had 4–6 family members in their family followed by (20.80%) were having 6–8 family members. The majority of the farmers' lands holding (37.50%) were 4–10 ha followed by 2–4 ha.

Table 2 revealed extent of awareness of dairy farmers about various scheme. According to Table 2 the majority of farmers (45%) aware and adopted the dairy training scheme followed by (28.30%) aware about DD8 scheme followed by (20%) aware about KCC limit. The majority of the farmers were not aware about dairy entrepreneurship, silage bailer subsidy, cattle shed subsidy scheme.

Table 3 revealed that farmers were aware about training scheme as highest mean score was corresponded (3.75) to statement "you know about dairy training scheme" followed by You familiar about DD8 scheme (3.25) milking machine subsidy scheme (3.22) was beneficial in dairy. Table 3 revealed there was least mean score was observed to the statement "You know about Rashtriya Gokul Mission for dairy (1.22) followed by "I am have knowledge of dairy entrepreneurship development scheme help in dairy enrichment" (1.50) and "You know about fodder harvester scheme" (1.87). Mupunga and Dube (2016) revealed government policy encouraged to look into the likelihood of persuading small-scale and communal farmers to participate in the dairy sector. Quddus et al. (2012) revealed level of technology adoption by smallholder dairy farmers was found inadequate and was highly dependent on farmers' education, farming experiences their financial status and extension

Table 1: Demographic profile of the respondents (n=120)

Sl. No.	Particular	Frequency	Percent
1. Gender			
	Male	109	90.8
	Female	11	9.2
2. Age			
	20–30 years	43	35.8
	30–40 years	66	55.0
	40–50 years	10	8.3
	Above 50 years	1	0.8
3. Education of respondents			
	Illiterate	16	13.3
	Primary School	35	29.2
	High School	62	51.7
	Graduate and above	7	5.8
4. Experience in dairy			
	Less than 5 years	53	44.2
	5–10 years	43	35.8
	10–15 years	15	12.5
	15–20 years	8	6.7
	More than 20 years	1	0.8
5. Herd size			
	Less than 20	55	45.8
	20–50	46	38.3
	50–100	11	9.2
	More than 100	8	6.7
6. Family member			
	2–4	20	16.7
	4–6	63	52.5
	6–8	25	20.8
	8–10	12	10.0
7. Land holding			
	Less than 2	11	9.2
	2–4	33	27.5
	4–10	45	37.5
	More than 10	31	25.8
	Total	120	100.00

Source: Primary data

Table 2: Extent of awareness of various dairy development schemes by farmers (n=120)

Scheme	Extent of awareness				
	Not aware	Just aware	Aware	Aware and familiar	Aware and adopted
Cattle shed subsidy	42 (35)	40 (33.3)	19 (15.8)	11 (9.2)	8 (6.7)
Silage bailer subsidy	63 (52.5)	19 (15.8)	23 (19.2)	9 (7.5)	6 (5.0)
DD8 scheme	34 (28.3)	6 (5.0)	9 (7.5)	37 (30.8)	34 (28.3)
Milking machine subsidy	23 (19.2)	18 (15)	18 (15)	31 (25.8)	30 (25.0)
KCC limit	19 (15.8)	17 (14.2)	38 (31.7)	22 (38.3)	24 (20.0)
Training schemes	11 (9.2)	15 (12.5)	11 (9.2)	29 (24.2)	54 (45.0)
PMFME schemes	43 (35.8)	48 (40)	26 (21.7)	2 (1.7)	1 (0.8)
Fodder harvester scheme	56 (46.7)	35 (29.2)	21 (17.5)	4 (3.3)	4 (3.3)
Dairy entrepreneurship	78 (65)	24 (20)	17 (14)	1 (0.8)	0 (0)

Source: Primary data; Figure in parenthesis are in %

Table 3: Awareness and knowledge of various dairy development schemes by farmers (n=120)

Particular	Mean	Std. Dev.	*t*-value	*p*-value
You know about dairy training scheme	3.83	1.36	6.70	<.001
You know about DD8 scheme and its benefits	3.25	1.60	1.76	.081
Milking machine subsidy scheme is beneficial in dairy	3.22	1.46	1.68	.095
There is KCC limit to support dairy	3.12	1.32	1.03	.304
Cattle shed subsidy scheme improve dairy infrastructure	2.19	1.20	-7.35	<.001
You know about silage bailer subsidy scheme	1.96	1.21	-9.31	<.001
You know PMFME scheme also for dairy and value addition	1.91	0.84	-14.02	<.001
You know about fodder harvester scheme	1.87	1.03	-11.92	<.001
I have knowledge of dairy entrepreneurship development scheme help in dairy enrichment	1.50	0.76	-21.30	<.001
You know about Rashtriya Gokul Mission for dairy	1.22	0.55	-34.90	<.001

*Significant *p*=0.05 level of significance

services. The adoption level of improved management practices was observed in beneficiaries (Aziz et al., 2005).

The table 4 showed the opinion of respondents regarding the benefits of schemes after adoption. The highest mean score corresponded to statement "I understand schemes help in improve welfare and health of dairy animals" (3.44) followed by "I have resources to adopt and utilize benefits of schemes" (3.40) followed by the statement "I understand

Table 4: Benefits of dairy schemes after adoption (n=92)

Statements	Mean	Std. Dev.	*t*-value	*p*-value
I understand schemes help in improve welfare and health of dairy animals	3.44	0.89	4.77	<.001
I have resources to adopt and utilize benefits of schemes	3.40	0.93	4.21	<.001
I understand scheme help in increasing farm size in terms of animals and productivity	3.36	0.89	3.94	<.001
I am confident that it will take benefits for future	3.26	1.14	2.26	.026
These schemes are beneficial for me in dairy management	3.19	0.86	2.16	.033
I understand dairy schemes help to increase my income	3.13	0.85	1.57	.118
I have knowledge and skills to get benefits from the schemes after adoption	3.03	0.94	0.32	.744

*Significant *p*=0.05 level of significance

scheme help in increasing farm size in terms of animals and productivity" (3.36) followed by "I am confident that it will take benefits for future" (3.26).

Table 5 revealed factors affecting adoption of dairy schemes there was lack of awareness about scheme (3.75) followed there was complexity in documentation process (3.73), there was inadequate extension services and training programs (3.66) and the rates of subsidy were low which affected adoption of scheme (3.34) were reported important factor which affected adoption of dairy scheme. Lack of poor credit access and social and cultural factors were reported as least factors affecting adoption of dairy schemes. Lack of technical with low grant support and training opportunities were reported important constraints (Ghimire et al., 2023). Animal husbandry was based on traditional techniques resulting low productivity than potential due to various factors. There was lack of knowledge among technical knowledge and they lack in resources also. More importantly, role of livestock extension field personnel was reported negligible (Ashraf et al., 2013).

Table 5: Factors affecting adoption of schemes (n=120)

Statements	Mean	Std. Dev.	*t*-value	*p*-value
There is lack of awareness about scheme	3.75	0.88	9.34	<.001
There is complexity in documentation process	3.73	1.22	6.54	<.001
There is inadequate extension services and training programs	3.66	1.07	6.81	<.001
The rates of subsidy are low which affect adoption of scheme	3.34	1.08	3.46	<.001
I have poor knowledge about the schemes	3.12	1.24	1.10	0.27
There is poor economic viability and benefits	3.01	1.12	0.16	0.87
I have no interest to get benefits of the schemes	2.87	1.19	-1.14	0.25
There is lack of credit access	2.80	0.97	-2.15	.033
There is social and cultural factors	2.59	1.39	-3.19	.002

4. CONCLUSION

The majority of the dairy farmers were male and farmers were not aware about various dairy promoting schemes. Only (45%) farmers know about training scheme and they have benefited with this scheme followed by farmers (28.30%) were aware about DD8 scheme of dairy. Scheme help in improve welfare and health of dairy animals. Lack of awareness about schemes and complexity in the documentation followed by inadequate extension services and training programme were reported as important factors which affect adoption of the scheme.

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