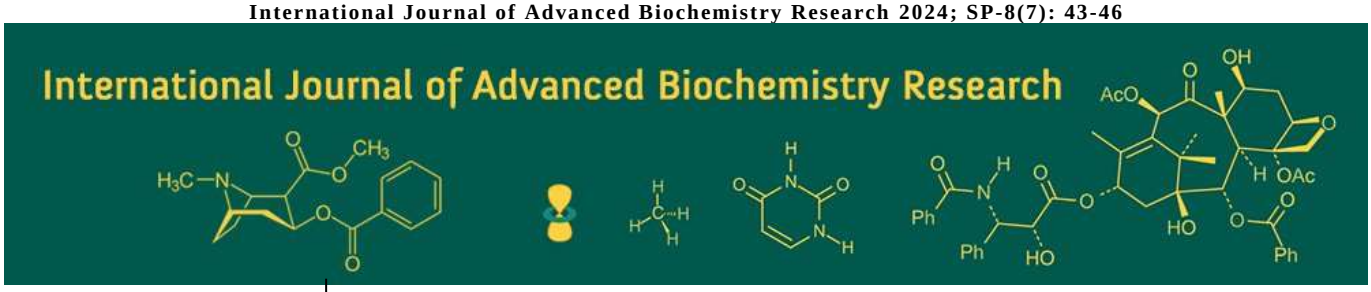

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Empowering dairy farmers: Impact of scientific training on health care and marketing practices

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Abstract
Dairy farming in Haryana stands as a cornerstone of the state's agricultural economy, rooted deeply in its cultural heritage and economic fabric. A study was conducted in three Hisar districts of Haryana with sample size of 120 respondents (60 Participants and 60 Non participants) with an objective to measure the impact of scientific dairy farming trainings on knowledge level of dairy farmers in terms of health care and marketing practices. Data were collected through personal interview with the help of pretested structured interview schedule. It was concluded that 55 and 47.50 per cent of the respondents were having medium level of knowledge regarding health care practices and marketing practices respectively. Paricipants were having slightly higher knowledge than non paeticipants. Respondents were having highest, lowest knowledge about 'knowledge of signs of illness' and advantage of vaccination (50.67%) among health care practices. In case of marketing practices dairy farmers ranked first to the item 'knowledge of selling of dung cake or manure' (100%), least rank to the knowledge about 'membership of SHG or cooperative' (33%).Further studies to explore other correlated factors are suggested.

Keywords: Dairy farmers, knowledge, health care, management practices

Introduction
India is primarily an agrarian society, with livestock forming the backbone of the national economy (Gautam *et al.*, 2015) [2]. Dairy farming holds immense significance in India, playing a crucial role in its agricultural economy, food security, and rural livelihoods. Over the last decade, India's milk production has grown by about 6 percent annually, reaching an impressive 231 million metric tonnes (MMT) in 2022-23 (Singh, 2024) [11] and is further expected to increase approximately 300 (MMT) by 2030 (Niti Aayog) in order to meet increasing demands. So the production and productivity of dairy animals must be significantly improved to bridge the gap between supply and demand. This gap may be attributed to due to nonadoption of scientific farming practices, lack of knowledge which can be reduced substantially by motivating the farmers to adopt improved dairy farming practices so as to facilitate higher animal productivity (Gautam *et al.*, 2015) [2]. It may be achieved by conducting trainings for dairy farmers to impart knowledge on the latest dairy farming technologies (Harikrishna *et al.*, 2012) [3]. There is an urgent need to sensitize the farmers about the modern technologies and scientific interventions in dairy production in order to enhance milk yield from farm animals.

Training is usually an integral part of human resource development, which helps in enhancing the knowledge level and changing the attitude of the trainees (Kumar *et al.*, 2008) [5]. But due to lack of scientific knowledge and favourable environment towards the recommended practices, they cannot use available resources in proper and scientific manner (Harikrishna *et al.*, 2012) [3]. In order to take full advantage of dairy farming technologies and to ensure their correct application in actual field conditions, dairy farmers need to be constantly trained so that they may develop a desired level of knowledge and skills in Scientific Dairy Farming. (Murai and Singh, 2011) [8]

With fast emerging sophisticated innovations and technology in every field, training is increasingly becoming a potent instrument that can help people bring about improvement in their prevailing condition and ways of making a living.

The Directorate of Extension Education LUVAS regularly organizes trainings for dairy farmers regarding adoption of knowledge of Scientific Dairy Farming. Singh *et al.*, (2011) [8] concluded that overall 79.07 per cent increase in knowledge level of dairy farmers was observed as a result of dairy farming training. Yadav and Pareek (2014) [13] reported that majority of the on-campus trainee's use of animal husbandry practices had high level of knowledge. Therefore a systematic study was planned with the objectives of assessing the impact of trainings on scientific dairy practices in terms of health care and marketing practices.

Materials and Methods

This investigation was carried out in the Hisar district of Haryana, which was selected purposely because most of the participants in on-campus trainings come from the surrounding villages. The Directorate of Extension Education, LUVAS, Hisar provided a list of attendees for the scientific dairy farming program. The majority of participants came from the surrounding villages. The list of participants from the village of Gorchi included over 80 individuals so chosen. Its neighboring village was selected as Panihar. A list of farmers from Gorchi village who had taken part in dairy farming training was gathered, and sixty respondents were chosen at random. Similarly, sixty farmers from Panihar village who had not taken part in the training were chosen. The sample size therefore comprises of 120 dairy farmers.

A structured interview schedule was prepared on the basis of improved package of practices and expert opinions of the scientists. Knowledge in the present study was operationalized as the amount of understood information possessed by the dairy farmers regarding scientific dairy farming practices. The knowledge was measured by developing a knowledge test comprising of inventory of 4,5questions for health care, marketing respectively. The responses of dairy farmers were obtained on three point continuums i.e. correct, partially correct and wrong answer and score of 3, 2 and 1 was allotted, respectively. Then knowledge mean score and knowledge mean percent score were calculated.

Results and Discussion

The data incorporated in Table 1 reveal that 61.67 per cent of the respondents from participant category had medium (7-8) level of knowledge about health care practices followed by high (9 & above) and low (0-6) level of knowledge among 31.67 and 6.66 per cent farmers, respectively. In case of respondents from non-participants category, 48.33 per cent of them possessed medium (5-6) level of knowledge whereas, 38.34 per cent of the respondents had high (7& above) followed by 13.33 per cent who fall in the category of low (0-4) level of knowledge(Fig 1). Overall, 55 per cent of the respondents were having medium level of knowledge regarding health care practices whereas 35 and 10 per cent of the total respondents possessed high and low level of knowledge, respectively. Maintenance of herd in an ideal state of health and avoid loss through diseases, it is essential to have an adequate knowledge of important disease conditions and predisposing factors influencing the occurrence of diseases, their prevention, precautions etc. However, Singh *et al.* (2004) [12] and Kannadhasan and Sudeepkumar (2005) [4] reported low knowledge in the area of disease management in their study which may be due to regional variation.

Table 1: Knowledge level of dairy farmers regarding health care and marketing practices

Aspects	Category	Participants		Non-participants		Total		'Z' Value
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	
Health care	Low	4	6.66	8	13.33	12	10.00	4.39**
	Medium	37	61.67	29	48.33	66	55.00	
	High	19	31.67	23	38.34	42	35.00	
	Mean SD	7.031.21		5.97 1.44		6.50 1.43		
Marketing	Low	8	13.33	10	16.67	18	15.00	1.91
	Medium	25	41.67	32	53.33	57	47.50	
	High	27	45.00	18	30.00	45	37.50	
	Mean SD	11.90 1.57		11.28 1.96		11.59 1.80		

*p<0.05;**p<0.01

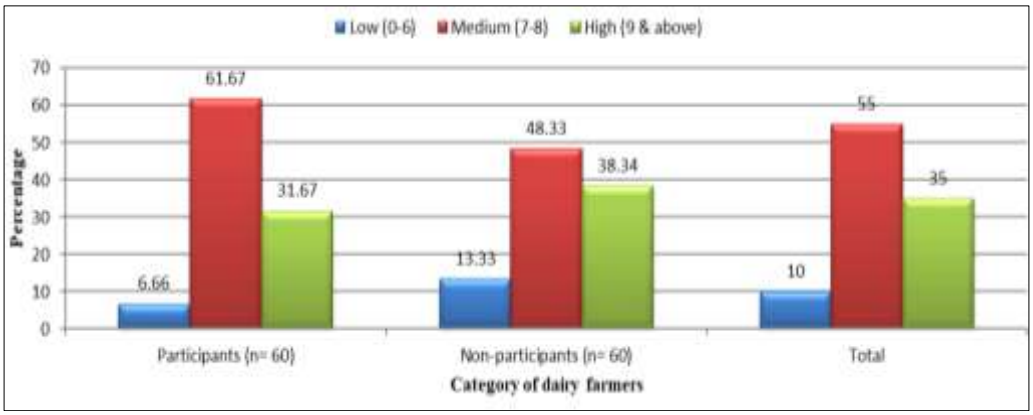

Fig 1: Knowledge level of dairy farmers about health care practices

The 'Z' value (4.39) found significant indicates participant had more knowledge of health care practices than non-participants. This may be due to the facilities created by the Govt. at their door step and the person with scientific orientation and education avail these more. Almost similar results were also reported Meena and Chauhan (1999) [6], Sharma (2005) [10], Aulakh *et al.* (2011) [1] and Sabapara *et al.* (2013) [9].

The data given in Table 2 depicts that participant category of farmers ranked first for 'knowledge of signs of illness' (89.33%). It was followed by steps taken when animals are ill (65.67%), precautions in disposal of diseased dead animals (59.33%) and advantage of vaccination (50.67%) and ranked second, third and fourth respectively. Similar results were found among the non-participant dairy farmers.

It is obvious from the data (Table 1) that 41.67 per cent of the respondents from participant category farmers had medium (11-12) level of knowledge about marketing practices followed by 45 and 13.33 per cent who had high (13 & above) and low (0-10) level of knowledge, respectively. Contrary to the participant farmers, as much as 53.33 per cent of the non-participant farmers had medium (10-12) level of knowledge regarding marketing while 30 per cent of them had high (13 & above) and 16.67 per cent had low (0-9) level of knowledge about marketing (Fig 2).

Overall out of 120 respondents, 47.50 per cent of the respondents had medium level of knowledge regarding marketing practices whereas 37.50 per cent of respondents were having high and 15 per cent had low level of knowledge about marketing practices.

Data in Table 3 indicate that participant category of farmers ranked first to the item 'knowledge of selling of dung cake or manure' (100%). It was followed by 'selling of unproductive animals' (99%) and 'stage of purchasing animals' (93.33%) and ranked second and third. Knowledge about 'membership of SHG or cooperative' (33%) was found lowest. Results among the non-participant dairy farmers were same as of participants.

It is seen that majority of participant farmers possessed high level of knowledge about marketing practices while in non-participants and overall respondents had medium level of knowledge. This variation may be attributed to their herd size, medium level of income, medium educational qualification, economic motivation, extension contact, mass media exposure and their attitude. Almost similar results were reported by Sabapara *et al.* (2013) [9] whereas Meena *et al.* (2012) [7] reported that knowledge about marketing in study area was quite low and unsatisfactory for development in dairy sector.

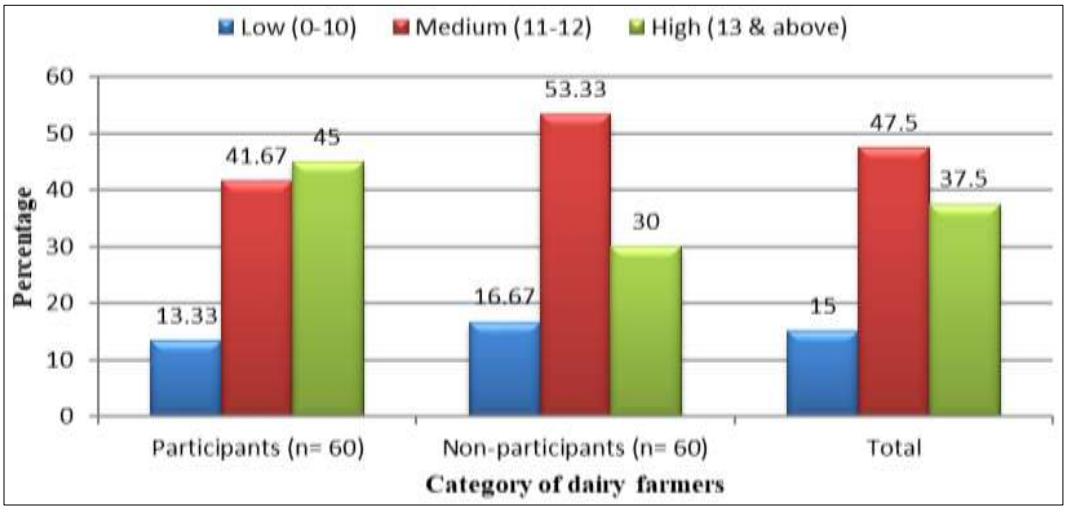

Fig 2: Knowledge level of dairy farmers about marketing practices

Table 2: Item-wise knowledge level of dairy farmers about health care practices

S. No.	Item	Participants			Non-participants			Total		
		MS	MPS	Rank	MS	MPS	Rank	MS	MPS	Rank
1	Advantage of vaccination	1.52	50.67	IV	1.13	37.67	IV	1.32	44.00	IV
2	Steps taken when animals are ill	1.97	65.67	II	1.73	57.67	III	1.85	61.67	II
3	Signs of animal illness	2.68	89.33	I	2.45	81.67	I	2.57	85.67	I
4	Precautions in disposal of diseased dead animals	1.78	59.33	III	1.75	58.33	II	1.77	59.00	III

Table 3: Item-wise knowledge level of dairy farmers about marketing practices

S. No.	Item	Participants			Non-participants			Total		
		MS	MPS	Rank	MS	MPS	Rank	MS	MPS	Rank
1	Sell milk or milk product	2.47	82.33	V	2.67	89.00	IV	2.57	85.67	IV
2	Product preparation	2.53	84.33	IV	2.35	78.33	V	2.44	81.33	V
3	Place for sell of milk	1.98	66.00	VII	2.02	67.33	VI	2.00	66.67	VI
4	Market linkage	1.93	64.33	VIII	1.97	65.67	VII	1.95	65.00	VII
5	Membership of SHG or cooperative	1.00	33.00	IX	1.07	35.67	IX	1.03	34.33	IX
6	Selling of dung cake or manure	3.00	100.00	I	3.00	100.00	I	3.00	100.00	I
7	Stage of purchasing animals	2.80	93.33	III	2.75	91.67	III	2.77	92.33	III
8	Selling of unproductive animals	2.97	99.00	II	2.97	99.00	II	2.97	99.00	II
9	Market places for dairy animals	2.08	69.33	VI	1.65	55.00	VIII	1.87	62.33	VIII

Conclusion

Majority of the participant category of farmers possessed medium to high level of knowledge regarding health care (93.34%), marketing practices (93.34%). Among the non-participant dairy farmers, majority of the respondents were found to have medium to high level of knowledge in case of health care, marketing practices and overall knowledge to the extent of 86.67, 83.33 and respectively. It is suggested to adopt target specific approach. The extension agencies should identify the knowledge deficient area of dairy farmers and trainings should be organized to fill the gap.

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