

## RESEARCH ARTICLE :

# Knowledge and adoption about dairy management practices of farmers in Wardha district

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**SUMMARY :** The present study was conducted in Wardha district of Maharashtra State in the Vidarbha region. For the study descriptive design namely exploratory research design was used. After critical analysis it was observed that, 99.00 per cent of the respondents had high level knowledge about dairy management practices while 59.00 per cent farmers have adopted at medium level. In the mean index value highest knowledge was observed in breeding management practices *i.e.* 100.00 per cent followed by 93.50 and 83.16 per cent housing, cleaning and health practices, respectively. While, in case of adoption 79.66 average adoption of cleaning management practice was observed. In relational analysis land holding, extension contacts, and annual income were the variables found positively and significantly correlated with knowledge and adoption of dairy management practices.

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## KEY WORDS :

Knowledge,  
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## BACKGROUND AND OBJECTIVES

Animal husbandry and dairying activities play an important role in national economy and in socio-economic development of the country. These activities have contributed to the food basket, nutrition security and household income of the farmers and play a significant role in generating gainful employment in the rural areas, particularly among the landless, small and marginal farmers and women, besides providing cheap and nutritious food. Farmers of marginal, small and semi-medium operational holdings (area less than 4 ha) own about 87.70 per cent of

the livestock. Hence, development of livestock sector would be more inclusive. India is endowed with the largest livestock population in the world. It accounts for about 57.3 per cent of the world's buffalo population and 14.7 per cent of the cattle population. There are about 71.6 million sheep and 140.5 million goats about in the country. India has vast resource of livestock and poultry, which play a vital role in improving the socio-economic conditions of rural masses (Anonymous, 2012). Hence, the present investigation was undertaken to find out the changes that may have occurred in knowledge and adoption of dairy management practices and relationship offarmers profile

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with their knowledge and adoption.

## RESOURCES AND METHODS

For the evaluation of livelihood of dairy farmer's Exploratory research design of social research was used. The 10 villages were purposively selected from Wardha district, where maximum numbers of farmer have adopted dairy farming. A dairy farmer means a farmer maintaining the animal for milch purpose and sell milk to milk collecting centre. From selected 10 villages 100 dairy farmers who have at least 2 or more number of milch animals kept for five years were randomly selected from the list. Thus, from 10 villages 100 dairy farmers were selected with the help of random sampling method. The data were collected by contacting personally to the selected farmers on their convenience with the help of interview schedule contained questions related to knowledge and adoption of dairy management practices on their livelihood.

## OBSERVATIONS AND ANALYSIS

The data regarding practice wise knowledge of respondents about dairy management practices given in Table 1 revealed that, majority of respondents had partial knowledge about most of the feeding management practices like feeding of dry, green and concentrate in required proportion (99.00%), feeding of concentrate of milk production (99.00%), feeding of balance ration at regular interval (97.00%), use of common salt, mineral mixture and mineral bricks (97.00%) and feeding of concentrate to pregnant milch animals (91.00%). While, most of the respondents (98.00%) had fully aware about inclusion of agro industrial bi-products and processing of roughages and concentrates before feeding (91.00%). However, 82.00 per cent respondents had no knowledge about enrichment of poor quality roughages. In case of housing management practices all the respondent were having full knowledge of construction of shed, type of shed and situation of shed. It was followed by the full knowledge of flooring to shed (96.00%) and ventilation to shed (97.00%). Only drainage for urine was partially known to 71.00 per cent respondents followed by 29.00 per cent respondents having full knowledge. Out of three cleaning management practices two were fully known to almost all the respondents which includes cleaning of milking utensils (100%) and cleaning of shed (99.00%).

Only proper washing of udder before milking was partially known to 97.00 per cent respondents. The results confirm that respondents had proper knowledge of cleaning management practices except cleaning of udder; this might have affected the keeping quality of milk. In the health management practices similar trend was observed where sprinkling of water and grooming were fully known by 100.00 per cent and 97.00 per cent respondents, respectively. Only vaccination was partially known to the 98.00 per cent farmers, this could have most important practice in protection of milch animals from diseases, which may affect the quality and quantity of milk. In regards with breeding management practices, natural service and artificial insemination were fully known to all the respondent. This indicates the professionalism of the respondent.

Regarding practice wise adoption of respondent about dairy management practices given in Table 2 revealed that, most of the practices were found partially adopted by the farmers under feeding management practices, these are feeding of concentrates of milk production (99.00%), use of common salt, mineral mixture and mineral bricks (98.00%), feeding of dry, green and concentrate in required proportion (96.00%), feeding of balance ration at regular interval (95.00%), enrichment of poor quality roughages (77.00%) and feeding of concentrates to pregnant cow or buffalo (63.00%). In case of full adoption inclusion of agro industrial bi-products and processing of roughages and concentrates before feeding were adopted by 87.00 per cent and 76.00 per cent respondents, respectively. It was then followed by 37.00 per cent respondents who have fully adopted feeding of concentrates to pregnant cow or buffalo. It is inferred that most of the feeding management practices were partially adopted because the farmers had partial knowledge of these practices. In case of housing management practices, full adoption was recorded by almost all respondents regarding situation of shed (99.00%) and ventilation of shed (98.00%). The practices like drainage for urine and flooring to shed were partially adopted by 88.00 per cent and 85.00 per cent respondents, respectively. Similarly construction of shed (64.00%) and type of shed (65.00%) were also partially adopted and fully adopted by 36.00 and 35.00 per cent respondents, respectively. Though the construction of shed and type of shed were fully known to all the respondents, majority of them had partially followed it

because construction of shed as per specifications and type requires more money where farmers were reluctant to invest. In the cleaning management practices, 99.00 per cent respondents were fully adopted the cleaning of milking utensils followed by full adoption of cleaning of shed by 78.00 per cent respondents, but 99.00 per cent of them had partially practiced washing of udder before milking because of their partial knowledge about this practice. Regarding health management, vaccination was fully adopted by 94.00 per cent respondents, though maximum of them had partial knowledge. The vaccination was followed with the consultation of veterinary doctors; hence farmers didn't have knowledge, but followed the vaccination. Grooming was partially adopted by majority farmers (87.00%) though they had full knowledge of it, this might be because of negligence

of farmers due to non-availability to labour for these works. Sprinkling of water is essential practice of buffalo for cleaning, maintenance of body temperature and relaxation, but it was not followed by 82.00 per cent respondents, because of lack of water and labour. In regard with breeding management practices, most of the farmers (85.00%) had adopted artificial insemination, while 10.00 per cent respondents had followed tradition natural service method. This shows the scientific orientation of dairy farmers which is quite necessary for the development of dairy enterprise.

From the Table 3 it was inferred that among all dairy management practices, 100.00 per cent knowledge index was observed about breeding management practices followed by 93.50 per cent knowledge about housing management, 83.16 per cent each about cleaning

**Table 1 : Distribution of the respondents according to sub-practice wise knowledge about dairy management practices (n = 100)**

Sr. No.	Recommended practices	Knowledge		
		No knowledge	Partial knowledge	Full knowledge
		Freq.	Freq.	Freq.
Feeding management practices				
1.	Feeding of balanced ration at regular interval	1 (01.00)	97 (97.00)	2 (02.00)
2.	Feeding of dry, green and concentrate in required proportion	1 (01.00)	99 (99.00)	0 (00.00)
3.	Processing of roughages and concentrates before feeding	0 (00.00)	9 (09.00)	91 (91.00)
4.	Enrichment of poor quality roughages	82 (82.00)	18 (18.00)	0 (00.00)
5.	Inclusion of agro industrial bi-products	0 (00.00)	2 (02.00)	98 (98.00)
6.	Feeding of concentrates of milk production	0 (00.00)	99 (99.00)	1 (01.00)
7.	Use of common salt, mineral mixture and mineral bricks	1 (01.00)	97 (97.00)	2 (02.00)
8.	Feeding of concentrates to pregnant cow/ buffalo	0 (00.00)	91 (91.00)	9 (09.00)
Housing management practices				
1.	Construction of shed	0 (00.00)	0 (00.00)	100 (100.00)
2.	Type of shed	0 (00.00)	0 (00.00)	100 (100.00)
3.	Situation of shed	0 (00.00)	0 (00.00)	100 (100.00)
4.	Flooring to shed	0 (00.00)	4 (04.00)	96 (96.00)
5.	Ventilation to shed	0 (00.00)	3 (03.00)	97 (97.00)
6.	Drainage for urine	0 (00.00)	71 (71.00)	29 (29.00)
Cleaning management practices				
1.	Cleaning of milking utensils	0 (00.00)	0 (00.00)	100 (100.00)
2.	Cleaning of shed	1 (01.00)	0 (00.00)	99 (99.00)
3.	Proper washing of udder before milking	1 (01.00)	97 (97.00)	2 (02.00)
Health management practices				
1.	Sprinkling of water	0 (00.00)	0 (00.00)	100 (100.00)
2.	Grooming	0 (00.00)	3 (03.00)	97 (97.00)
3.	Vaccination	0 (00.00)	98 (98.00)	2 (02.00)
Breeding management practices				
1.	Natural service	0 (00.00)	0 (00.00)	100 (100.00)
2.	Artificial insemination	0 (00.00)	0 (00.00)	100 (100.00)

Figures in parentheses indicate percentage

management and health management and 57.50 per cent knowledge about feeding management practice. The overall knowledge index of respondents obtained dairy management technology was 83.47 per cent. Regarding adoption index of all major practices was calculated and presented in Table 3, which indicated that the respondents had adopted cleaning management practice with adoption

index of 79.66 per cent followed by housing management (74.33%). Further, feeding management practices were adopted upto 60.87 per cent, while health management had adoption index of 57.00 per cent. Breeding management practices were adopted upto only 49.50 per cent. Actually in breeding management practices artificial insemination was adopted by the majority of respondents,

**Table 2 : Distribution of the respondents according to sub-practice wise adoption of dairy management practices (n = 100)**

		Adoption		
Sr. No.	Recommended practices	No. adoption	Partial adoption	Full adoption
		Freq.	Freq.	Freq.
Feeding management practices				
1.	Feeding of balanced ration at regular interval	5 (05.00)	95 (95.00)	0 (00.00)
2.	Feeding of dry, green and concentrate in required proportion	4 (04.00)	96 (96.00)	0 (00.00)
3.	Processing of roughages and concentrates before feeding	0 (00.00)	24 (24.00)	76 (76.00)
4.	Enrichment of poor quality roughages	23 (23.00)	77 (77.00)	0 (00.00)
5.	Inclusion of agro industrial bi-products	2 (02.00)	11 (11.00)	87 (87.00)
6.	Feeding of concentrates of milk production	0 (00.00)	99 (99.00)	1 (01.00)
7.	Use of common salt, mineral mixture and mineral bricks	1 (01.00)	98 (98.00)	1 (01.00)
8.	Feeding of concentrates to pregnant cow/ buffalo	0 (00.00)	63 (63.00)	37 (37.00)
Housing management practices				
1.	Construction of shed	0 (00.00)	64 (64.00)	36 (36.00)
2.	Type of shed	0 (00.00)	65 (65.00)	35 (35.00)
3.	Situation of shed	0 (00.00)	1 (01.00)	99 (99.00)
4.	Flooring to shed	1 (01.00)	85 (85.00)	14 (14.00)
5.	Ventilation to shed	0 (00.00)	2 (02.00)	98 (98.00)
6.	Drainage for urine	0 (00.00)	88 (88.00)	12 (12.00)
Cleaning management practices				
1.	Cleaning of milking utensils.	0 (00.00)	1 (01.00)	99 (99.00)
2.	Cleaning of shed	0 (00.00)	22 (22.00)	78 (78.00)
3.	Proper washing of udder before milking.	0 (00.00)	99 (99.00)	1 (01.00)
Health management practices				
1.	Sprinkling of water	82 (82.00)	0 (00.00)	18 (18.00)
2.	Grooming	0 (00.00)	87 (87.00)	13 (13.00)
3.	Vaccination	1 (01.00)	5 (05.00)	94 (94.00)
Breeding management practices				
1.	Natural service	87 (87.00)	3 (03.00)	10 (10.00)
2.	Artificial insemination	10 (10.00)	5 (05.00)	85 (85.00)

Figures in parentheses indicate percentage

**Table 3 : Knowledge and adoption index of dairy management practices**

Sr. No.	Practices	Knowledge index	Adoption index
1.	Feeding management	57.50	60.87
2.	Housing management	93.50	74.33
3.	Cleaning management	83.16	79.66
4.	Health management	83.16	57.00
5.	Breeding management	100.00	49.50
	Overall index	83.47	64.27

but natural service was not adopted by the majority, which contributed in the index. Overall adoption index of dairy management practices was 64.27 per cent, which was found to be less as compare to knowledge index.

As it is previously observed that the respondents had high knowledge index of most of the dairy management practices, but they failed to adopt in practice. The major reason for relatively lower adoption index could be the non-availability of labour for dairy farming high cost of inputs like concentrates mineral mixture etc.

This gap in knowledge and adoption index shows some scope for development of dairy farming in the study area. The extension agencies have to make focused efforts for increasing the adoption of dairy management practices.

It could be observed from the Table 4, that large proportionate *i.e.* 99.00 per cent of dairy farmers had high level of knowledge and remaining 01.00 per cent had medium level of knowledge about recommended dairy management practices.

Therefore, it is concluded that almost all the respondents had high level of knowledge about dairy management practices. Probably this might have two reasons, one is the positive efforts of extension agencies

and second is from farmers side, where the educated young and middle age farmers always ready to take risk for gaining the income, with this intension they could have made efforts to contact with the different extension personnel for seeking the information about dairy management technology. These findings are consonance with the findings of Sasane *et al.* (2013). It is clear from the data depicted in Table 4 that over half of the respondents (59.00%) had medium level of adoption about the recommended dairy management practices followed by high adoption index category (41.00%) that had high level of adoption about dairy management practices. The study revealed that, majority of respondent farmers had medium to high level of adoption about recommended dairy management practices.

It has already been discussed that majority of respondents had high level of knowledge, but here in the adoption majority had medium level of adoption. Hence, it implied that extension agencies have to tailor the extension activities to convert the knowledge of farmers in to the decision of adoption. These findings are supported by Motghare (2009).

It is the evident from Table 5 that amongst personal, situational and psychological characteristics of respondent education and extension contact were significantly

**Table 4 : Distribution of the respondents according to extent of knowledge and adoption of dairy management practices (n = 100)**

Sr. No.	Level	Respondents			
		Knowledge		Adoption	
		Freq.	%	Freq.	%
1.	Low	0	0	0	0
2.	Medium	01	01.00	59	59.00
3.	High	99	99.00	41	41.00
	Total	100	100.00	100	100.00

**Table 5 : Correlation co-efficient of independent variables with knowledge and adoption of dairy management practices**

Sr. No.	Independent variable	Knowledge	Adoption
1.	Age	-0.0674	-0.0109
2.	Education	0.3117**	0.1874
3.	Family size	0.0797	0.1796
4.	Land holding	0.2142*	0.2955**
5.	Type of breed	0.1749	0.1556
6.	Experience in dairy farming	0.0474	0.1409
7.	Annual income	0.1752	0.239*
8.	Scientific orientation	0.1666	0.0371
9.	Access to animal health facility	0.1375	0.1208
10.	Risk preference	0.1848	0.0075
11.	Extension contact	0.2674**	0.3240**

\* and \*\* indicate significance of values at P=0.05 and 0.01, respectively

correlated with the knowledge of dairy management practices at 0.01 level of probability, while land holding was significant with knowledge at 0.05 level of probability. Hence, hypothesis regarding those variables is accepted.

In general opinion, education of farmers favours the acquisition of knowledge and widens the horizon of knowledge by proper understanding of the importance of recommended practices by getting exposed to extension agencies and contacting formal as well as informal sources. More land holding could motivate the dairy farmers for acquiring the information of cultivation of grasses and forage crops required for milch animals.

Regarding adoption, land holding and extension contacts were having positive and significant correlation with the adoption of dairy management practices at 0.01 level of probability, while annual income had positive and significant correlation at 0.05 level of probability.

It is obvious that increase in annual income with availability of land holding, good extension contacts and proper knowledge encouraged the farmers to adopt the dairy management practices. Adequate knowledge of recommended practices is the pre-requisite for their actual use.

These findings are in conformity with the findings of Dhepe (2001); Motghare (2009) and Kumar and Tripathi (2011).

### Conclusion :

On the whole it was be concluded that majority of respondent (99.00%) of the study area were having high level of knowledge about dairy management practices while 59.00 per cent farmers have adopted at medium level. It is worth to increase innovative proneness, extension agency contact and mass media participation.

Hence, it was suggested that technology dissemination system must be focused on these variables by organising awareness campaigns, field day, demonstration, exhibitions, Kisan mela etc. So that farmers could be able to accure latest knowledge about dairy management practices. Dept. of veterinary and livestock extension may play a crucial role to make the farmers aware about different type of scientific dairy farming practices using different means of communication.

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