

Existing housing management practices followed by rural dairy animal owners in Surat district of Gujarat

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ABSTRACT

The study was conducted purposively in Surat district to ascertain the existing housing management practices followed by rural dairy animal owners. A field survey was conducted during March 2013 to January 2014 and data were collected from randomly selected 300 dairy animal owners through personal interview using pre-tested structured schedule from five Talukas selected at random. The study revealed that majority of respondents provided close type (54.33%) and Kuchha type (56.33%) houses. Majority (88.33%) kept their animals inside the house during day as well as night; 88.67 per cent of animal sheds were near to the dwelling of the farmers and 72.67 per cent of the animal houses were oriented in east-west direction. Majority (87.67%) of respondents had single row system of animal housing and only 47 per cent had optimum sized animal houses. Adequate floor space was available in animal houses of around 49 per cent of respondents; 89 per cent respondents had provision of sufficient light in the animal houses; 50.33 per cent had provision of good ventilation to their animal sheds. Majority (66%) of dairy farmers had clean animal houses; 51.67 per cent had earthen floors in their animal houses; 64.33 per cent had slope in floors towards backside of the animal sheds; 49 per cent of respondents used cemented type poles and 31 per cent used bricks and cement to construct the walls of animal houses. Majority of respondents (94%) possessed single slope type of roof; 66 per cent farmers provided manger to their animals; 33.33 per cent had Pucca type of manger and 36.33 per cent of animal sheds had provision of Pucca drainage facility of urine. Majority (58.33%) of respondents adopted some kind of measures to protect the animals from extreme weather conditions and only 14 per cent provided bedding material on floor for the animals.

Keywords: Dairy animals; housing; management; practices

INTRODUCTION

Gujarat is an important state in milk production and marketing in India on co-operative dairy system. In the year of 2007 cattle and buffalo population of Surat district was 226873 and 246607 respectively. It contributed around 9.82 million tons

(7.65%) of milk to the total milk pool of India and per capita milk availability was 436 g/day during 2011-12 (Anon 2012). Production potential of livestock depends mostly on the management practices under which they are reared and these practices vary significantly across various agro-ecological regions due to many factors.

Understanding of livestock management practices followed by farmers in a region is necessary to identify the strengths and weaknesses of the rearing systems and to formulate suitable intervention policies (Gupta et al 2008). Each component of management practices interacts either independently or in combination to affect the productivity of the livestock. Almost all the farmers did not keep their animals at a single place throughout the year or even for a whole day and night. Provision of proper housing facilities to the animals not only reduces the energy wastage in maintaining thermo-neutral zone but also provides good hygienic conditions, reduces the incidence of diseases, protects them from predators and provides better working conditions to the farmers. Therefore it is imperative to ascertain the scientific housing management practices of dairy animals followed by dairy animal owners under village conditions so that need-based extension programme may be launched to make them aware to increase their knowledge and the adoption of scientific housing management practices for dairy animals.

METHODOLOGY

A field survey was conducted in Surat district of south Gujarat during March 2013 to January 2014. Surat district possesses nine Talukas out of which five were randomly selected. From each selected Taluka 5 villages having functional primary

milk producers' co-operative societies were selected at random. Twelve dairy animal owners from each village were randomly selected making a total of 300 respondents. While selecting respondents due care was taken to ensure that they were evenly distributed in the village and truly represented animal management practices prevailing in the area. The selected farmers were interviewed and the desired information was collected regarding housing management practices adopted by them for dairy animals with the help of pre-designed and pre-tested questionnaire. Data were tabulated and analyzed as per standard statistical tools.

RESULTS and DISCUSSION

The findings indicated that majority of the respondents (54.33%) provided close type houses and remaining 45.67 per cent provided open type of houses to their dairy animals. Among these 56.33 per cent respondents had Kucha type while only 43.67 respondents had Pucca type houses for their animals. Similar findings were also reported by Singh et al (2007) and Ahiwar et al (2009) in their study. These houses are mainly made up of locally available cheap materials like bamboo and forest wood plastered with mud and cow dung. It was observed that 88.33 per cent respondents kept their animals inside the houses during day as well as night while 11.67 per cent kept inside the houses only during night. Kharadi et al (2006) reported

in their survey in Charotar region of middle Gujarat on Surti buffalo that majority of the farmers (56.08%) kept their animals in the close house during day and in home tract at night. It shows that such practice was followed in a wide area of Gujarat state.

The results revealed that 88.67 per cent of animal sheds were near to the dwellings of the farmers whereas 10 and 1.33 per cent of the animal sheds were attached to farmer dwellings and at the fields of farmers respectively. Similar findings were also reported by Modi (2003), Chowdhry et al (2006), Gupta et al (2008) and Rangamma et al (2013). It might be due to the fact that for better management of the dairy animal, farmers preferred to have animal houses in the close vicinity of their houses. Contrary to present study Kumar and Mishra (2011) worked out the situation in rural areas and reported that nearly 60 per cent of animal sheds were part of owners' residences.

It was found that 72.67 per cent of the animal houses were oriented in east-west while 27.33 per cent were having north-south orientation. The present findings are in accordance with the results reported by Sinha et al (2009) and Kumar and Mishra (2011). It was found that majority of the respondents (87.67%) in the area of the study had single and remaining 12.33 per cent had double row system of animal housing out of which 7.33 and 5 per cent of the respondents had head to head and

tail to tail type of housing system respectively. These findings are in accordance with the findings of Ahirwar et al (2009).

The study indicated that only 47 per cent had optimum sized animal houses while in case of majority (53%) of the respondents size of the animal houses was not optimum. In contrast to the present study Sinha et al (2009) and Kumar and Mishra (2011) observed that the size of the animal houses was optimum in case of majority of the respondents. This might be due to the awareness of dairy farmers. Adequate floor space was available in animal houses of 49 per cent of the respondents whereas it was inadequate in case of 51 per cent respondents. Findings of this study are contradictory with the findings of Sinha et al (2009), Ahirwar et al (2009) and Kumar and Mishra (2011) who found that more than 61 to 93 per cent of respondents had adequate floor space in their animal houses.

The study also revealed that 89 per cent of the respondents had provision of sufficient light in the animal houses while it was not sufficient in the houses of 11 per cent respondents. A similar finding was reported by Ahirwar et al (2009). Contrary to the present study Meena et al (2008) and Rathore et al (2010) reported very low ie 18.33 per cent of respondents provided sufficient light in the animal houses of high altitude Kumaon Himalaya and Churu

district of Rajasthan. 50.33 per cent of respondents had provision of good ventilation to their animal sheds while it was fairly good and poor type in the animal houses of 46.67 and 3 per cent of the respondents respectively. Findings of this study are in agreement of the findings of Pawar et al (2006). Contrary to the present study Ahiwar et al (2009) reported that 70.33 per cent of respondents provided inadequate ventilation in animal houses of rural areas of Indore district of Madhya Pradesh. This might be due to the lack of awareness of dairy farmers.

It was observed that majority (66%) of the farmers had clean animal houses and remaining 34 per cent had dirty animal sheds. These results are supported by Meena et al (2008) who observed that more than 90 per cent of the animal houses were clean. Contrary to the present study Kumar and Mishra (2011) and Varaprasad et al (2013) found that more than 58 and 73 per cent of respondents had dirty animal sheds respectively. It was observed that majority of the respondents (51.67%) had earthen floors in the animal houses while 40.33, 3.67, 1.33 and 3 per cent had Pucca, stone paved, brick paved and muddy floor respectively. It is generally observed that Pucca floors are found to be better than earthen floors for animals to keep them free from worm problems and also from hygienic point of view. The respondents under this study showed unawareness about these problems and

they preferred earthen floors as these were cheaper and comfortable to animals. These findings are in close conformity with the earlier reports of Pawar et al (2006). However the results are contrary to the results recorded by Modi (2003) in Sabarkantha district of north Gujarat that most (82%) of the animal houses had Pucca floors. It was also observed that majority (64.33%) of the respondents had slope in floors towards backside of the animal sheds while 28.67 and 7 per cent had no floor slope and floor slope towards front in their animal sheds respectively. This might be due to awareness of keeping slope in floor to maintain hygienic conditions of animal sheds. The findings are supported by Sinha et al (2009) and Rathore et al (2010) who observed that 65.6 per cent of the respondents in the urban areas had floor slope towards back of their animal sheds and 51.5 per cent had floor slope towards back in their cattle sheds respectively. However Kumar and Mishra (2011) observed that most (80%) of the animal houses had no slope in floor in Tehri Garhwal district of Uttarakhand.

The study revealed that 49 per cent of the respondents used cemented type poles, 47.67 per cent used wooden poles and only 3.33 per cent used iron poles to support the roof. It might be due to the fact that cemented poles were more robust and durable than the wooden poles. Comparatively higher use of wooden poles may be due to low cost and easy availability

as compared to iron poles. The findings are in support with the findings of Divekar and Saiyed (2010). It was found that 38 per cent of the respondents had full while 16.33 and 45.67 per cent had half and no walls in their animal houses respectively. The possible reason might be that half or no walls had provided better provision of ventilation and were cost effective to construct the animal houses. These findings are contrary to the results of Sinha et al (2009) and Kumar and Mishra (2011) who observed that majority of the animal houses had full walls in their study area. The 31 per cent of the respondents used bricks and cement walls 22 and 1.33 per cent of the respondents used thatch and bricks in mud for the sheds respectively. The choice of materials for the construction might have been on economic condition of the farmer, level of intensification, locally available materials and strength of house required. Rathore et al (2010) reported that 51.75 per cent of the respondents used bricks and lime and 44.75 per cent used bricks in mud to construct the walls of the animal houses.

It was founded that 33.67, 31.33, 22.33 and 12.67 per cent of the respondents used asbestos sheets, thatched materials, galvanized iron sheets and tiles as roofing material in their animal sheds respectively. Prevailing climatic conditions and economic status of the farmers might have played a significant role in the selection of roofing materials. The Surat district comes under heavy rainfall agro-climatic

zone of Gujarat state. The present findings are in accordance with that reported by Singh et al (2007) and Varaprasad et al (2013) in their survey regions. The results are contrary to results of Divekar and Saiyed (2010) who observed that majority (94%) of Gir owners did not provide any roof to their animals and kept them in open or under the tree shade while 6 per cent owners used asbestos or galvanized sheets as roofing material for their animal sheds. It was observed that majority of the respondents (94%) possessed single slope type while 6 per cent possessed double slope type roof in their animal sheds. It might be due to the fact that most of the houses were lean type thus having single slope type of roof.

The outcome of the study was that 66 per cent of the respondents provided manger to their animals while 34 per cent did not provide any type of manger to their animals. Practically all of them fed unchaffed fodder but for concentrate feeding they used various types of metal bowls. Present findings are in accordance with the work of Modi (2003), Chowdhry et al (2006), Rathore et al (2010) and Rangamma et al (2013). It was further observed that 33.33 per cent of the respondents had Pucca type of manger while 25.33 and 7.33 per cent had wooden assisted manger and Kutcha type manger of varying size and shape. Present findings are in accordance with those of Rathore and Kachwaha (2009). However the results are contrary to the

Table 1. Distribution of the dairy animal owners according to housing practices followed

Particulars	Frequency	Percentage
Type of housing		
Open house	137	45.67
Close house	163	54.33
Kutchha	131	43.67
Pucca	169	56.33
Placement in housing		
During day	000	00.00
During night	035	11.67
During day and night	265	88.33
Location of shed		
Attached to human dwelling	030	10.00
Near to the dwelling	266	88.67
At the field of farmer	004	01.33
Direction of shed		
East-west	218	72.67
North-south	082	27.33
System of housing		
Single line	263	87.67
Head to head	022	07.33
Tail to tail	015	05.00
Size of house		
Optimum	141	47.00
Not optimum	159	53.00
Floor space availability		
Adequate	147	49.00
Inadequate	153	51.00
Light		
Adequate	267	89.00
Inadequate	033	11.00
Ventilation		
Poor	009	03.00
Fairly good	140	46.67
Good	151	50.33
Cleanliness of house		
Dirty	102	34.00
Clean	198	66.00
Type of floor		
Pucca (concrete)	121	40.33
Earthen floor	155	51.67
Muddy	009	03.00
Brick paved	004	01.33
Stone paved	011	03.67
Slope direction of the floor		
Towards front	021	07.00
Towards back	193	64.33

Housing management practices of dairy owners

No slope	086	28.67
Type of pillar/pole		
Wooden	143	47.67
Iron	010	03.33
Concrete/brick	147	49.00
Wall of house		
Full	114	38.00
Half	049	16.33
No wall	137	45.67
Materials used in walls		
Thatch	086	22.00
Brick and cement	093	31.00
Brick and mud	004	01.33
Type of roof		
Asbestos sheets roof	101	33.67
Galvanized iron sheets roof	067	22.33
Thatched roof	094	31.33
Tiles roof	038	12.67
Features of roof of shed		
Single slope	282	94.00
Double slope	018	06.00
Provision of manger		
Yes	198	66.00
No	102	34.00
Type of manger		
Kutchra	22	7.33
Pucca	100	33.33
Wooden assisted (temporary)	76	25.33
Provision of drainage system		
Pucca drain	109	36.33
Soaked at earthen floor	191	63.67
Provision & practice to protect animals from extreme weather		
Yes	175	58.33
No	125	41.67
Bedding material used on the floor in winter season		
Yes	042	14.00
No	258	86.00
Location of manure pit		
Adjacent	172	57.33
Distant	128	42.67

findings of Modi (2003), Chowdhry et al (2006) and Rathore et al (2010) who observed that majority of dairy animal owners provided Pucca type of manger in animal sheds in their study areas. This might be due to the more awareness of dairy farmers.

In the present investigations it could be seen that 36.33 per cent of animal sheds had provision of Pucca drainage facility of urine while remaining (63.67%) had no drainage facility and urine was soaked in earthen floor of animal sheds. This practice generally causes dampness and insanitary conditions. It was observed that some farmers practiced to change soil bedding or position of animals frequently. Present findings are encouraging than earlier reports of Chowdhry et al (2006) and Rathore et al (2010). However the results are contrary to the results of Modi (2003) who observed that 82 per cent of respondents provided Pucca drains.

Majority (58.33%) of the respondents had adopted some kind of measures to protect the animals from extreme weather conditions while 41.67 per cent did not follow this practice. It might be due to the awareness of the dairy farmers regarding ill effects of the extreme weather conditions on health and production of the animals. Rathore and Kachwaha (2009) observed that 9.25 per cent of the buffalo owners used electric fans/water coolers in buffalo sheds during hot period. It was seen

that only 14 per cent respondents provided bedding material on floor to their animals while 86 per cent did not do so during winter season. These findings are contrary to the results of Meena et al (2008), Rathore and Kachwaha (2009), Rathore et al (2010) and Kumar and Mishra (2011). Majority (57.33%) of the respondents kept manure pit adjacent to their animal sheds whereas 42.67 per cent kept manure pits at a distance from their animal sheds. These findings are in accordance with the results of Kumar and Mishra (2011).

CONCLUSION

It can be concluded that majority of respondents provided close type (54.33%) and Kutcha type (56.33%) houses; majority (88.33%) of respondents kept their animals inside the houses during day as well as night; 88.67 per cent of animal sheds were near to the dwellings of the farmers and 72.67 per cent of the animal houses were oriented in east-west direction. Majority (87.67%) of respondents in the area of the study had single row system of animal housing and only 47 per cent had optimum sized animal houses. Adequate floor space was available in animal houses of 49 per cent of respondents; 89 per cent of respondents had provision of sufficient light in the animal houses; 50.33 per cent had provision of good ventilation; majority (66%) of dairy farmers had clean animal houses; 51.67 per cent had earthen floors in their animal houses; 64.33 per cent had

slope in floors towards backside in the animal sheds. Of the total 49 per cent used cemented type poles and 31 per cent used bricks and cement to construct the walls of the animal houses. Majority of respondents (94%) possessed single slope type of roof; 66 per cent of respondents provided manger to their animals; 33.33 per cent had Pucca type of manger and 36.33 per cent of animal sheds had provision of Pucca drainage facility of urine. Majority (58.33%) of respondents of Surat district adopted some kind of measures to protect the animals from extreme weather conditions and only 14 per cent provided bedding material on floor to their animals.

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