

## RESEARCH ARTICLE

# Study on Housing Practices Followed by Dairy Animal Owners in Anand District of Middle Gujarat Region

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### ABSTRACT

The present investigation was carried out to study dairy animal housing practices followed by dairy animal owners in the Anand district of middle Gujarat region. The data were collected from randomly selected 120 dairy animal owners interviewed personally with a well-prepared questionnaire. The study revealed that all the respondents provided housing shelter with the all-time placement of their animals in the house. Majority of respondents (74.17%) constructed animal sheds nearby their own house followed by 25.83% were at a distance from farmer's house. It was found that 64.17% of animal houses were oriented in east-west while 35.83% respondents had houses in a north-south orientation. The respondents provided pucca floor (63.33%) and galvanized iron sheets as a roofing material (49.17%) in their animal sheds, whereas 34.17% farmers had no provision of the wall in their animal sheds. The vast majority of respondents (85.00%) had the provision of good ventilation in their animal sheds and 72.50% of the respondents had the provision of artificial light in their animal houses. Majority of dairy animal owners (72.50%) kept distance between manure pits and their animal sheds and 66.67% respondents had provision and practice to protect animals from extreme weather. About 1/5<sup>th</sup> respondents used a curtain to reduce cold and very few owners (5.00%) provided bedding material to their animals. It was concluded that dairy animal owners of Anand district possess better knowledge regarding animal housing management and follow different practices of scientific animal husbandry.

**Keywords:** Dairy animals, Housing, Management, Practices

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### INTRODUCTION

Animal husbandry is making a significant contribution to the national economy and socioeconomic development in the country. The livestock is the main source of livelihood for the small, marginal and landless farmers (Hegde, 2006) and ensures socioeconomic security of farmers. Dairying is an integral component of the rural economy of Gujarat state. Dairy development has made a quantum jump in the state due to a wide network of the cooperative dairy system. Gujarat is an important state in milk production and marketing in India due to the cooperative dairy system. The most important environmental interventions done in recent days are those that have been done in housing and other attempts to ameliorate the thermal extremes. An environment in which stress is minimized would likely be favorable for efficient production of products derived from domestic farm animals and for helping ensure the well-being of those species. Housing is one of the major contributors to play an important role in the production and health of dairy animals by providing a comfortable and hygienic environment (Reddy and Chakravarthi, 2015). A livestock management practice followed by the farmers is crucial to identify the strengths and poor animal rearing system and to advise appropriate intervention policies. 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 program may be launched to make them aware to increase

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their knowledge and the adoption of scientific housing management practices for dairy animals.

### MATERIALS AND METHODS

The present study was conducted in the Anand district of middle Gujarat state which is a seat of dairy development and white revolution. Geographically, Anand district is located in Middle Gujarat at 72.15–73.18 East (Longitude) to 22.07–23.29 North (Latitude) at an elevation of 45 meters above the mean sea level with a sub-tropical climate. Two talukas (Anand and Petlad) of Anand district were selected purposively because of their good animal husbandry practices. Five villages were selected from each taluka which are geographically located

apart and truly represented the animal husbandry practices of the taluka. The random samples of 120 dairy animal owners were made. The selected respondents were interviewed and the desired information was collected in the questionnaire developed for the purpose. While selecting farmers due care was taken to ensure that selected farmers were evenly distributed in villages. After collection, all the data were compiled and tabulated and analyzed as per standard statistical tools like frequency and percentage to draw the meaningful inference.

## RESULTS AND DISCUSSION

The data regarding dairy animal housing practices followed by dairy animal owners have been presented in Table 1. It was observed that almost all the respondents (100%) provided shelter through a conventional type of housing to their animals with all-time placement in sheds. In the current study, 74.17% of animal sheds were a nearby house of farmers followed by 25.83% animal sheds away from farmer's house. The farmers can give proper attention to their animals which help in better management and that may be the reason farmers preferred their animal houses in the close vicinity of their houses. The animal houses nearby human dwelling provided good management and easy transport of milk (Rangamma *et al.*, 2013; Vranda *et al.*, 2017; Himani *et al.*, 2018).

It was found that 64.17% farmers had east-west orientation, whereas 35.83% respondents had a north-south orientation of their animal houses. In tropical country like India where temperature raises high, direction of house plays an important role in hot climate to reduce heat stress on animal during summer season, to maintain good sanitation and to increase the productivity of dairy animals (Kumar and Mishra, 2011; Sabapara, *et al.*, 2015; Sinha, *et al.*, 2009). Majority of respondents (63.33%) constructed the pucca floor, whereas 34.17 and 2.50% respondents had earthen and rubber mat floor in their animal sheds, respectively. The pucca floor was non-slippery, easy to clean and maintain better sanitary condition of the shed. The respondents under this study showed awareness about these problems and preferred pucca floor in their animal sheds. The respondents who provided the earthen floor believed that animal feels comfortable and ease during sitting and standing (Dhaliwal and Dhillon, 2017; Patbandha *et al.*, 2018). However, results are contradictory to the results found by Patel *et al.* (2018) and Pilaniya *et al.* (2018).

Data in Table 1 revealed that 49.17, 29.17 and 21.66% of the respondents used galvanized sheets, thatched materials, and renal cell carcinoma (RCC) (pucca) roofing as a roof for their animal sheds, respectively. Prevailing climatic condition and economic status of the farmers might have played a significant role in the selection of roofing materials (Himani *et al.*, 2018; Pilaniya *et al.*, 2018). The majority of respondents did not construct wall (34.17%) in their animal sheds, which

**Table 1:** Existing dairy animal housing practices followed by the dairy animal owners (n = 120)

No.	Particulars	Frequency	Percent
<i>Providing housing shelter</i>			
1	Yes	120	100.00
	No	0	0
<i>Type of housing</i>			
2	Loose	0	0
	Conventional	120	100.00
<i>Placement in housing</i>			
3	All-time	120	100.00
	During night	0	0
	Extreme weather	0	0
<i>Location of shed</i>			
4	Nearby house of the farmer	89	74.17
	At a distance from farmer's house	31	25.83
<i>Direction of shed</i>			
5	East-West	77	64.17
	North-South	43	35.83
<i>Type of floor</i>			
6	Pucca	76	63.33
	Earthen floor	41	34.17
	Rubber mate	3	2.50
<i>Type of roof provided</i>			
7	Galvanized iron sheet	59	49.17
	Thatched roof	35	29.17
	Pucca roof (cement)	26	21.66
<i>Wall of house</i>			
8	One side	19	15.83
	Double side	27	22.50
	Triple side	6	5.00
	All side	27	22.50
	No wall	41	34.17
<i>Provision of manger</i>			
9	Yes	120	100.00
	No	0	0
<i>Type of manger</i>			
10	Kutchha (wooden assisted)	37	30.83
	Pucca (cement)	83	69.17
<i>Drainage facility</i>			
11	Yes	77	64.17
	No	43	35.83
<i>Ventilation</i>			
12	Poor	10	8.33
	Fairly good	8	6.67
	Good	102	85.00
	No provision of ventilation	0	0

Contd...

Contd...

		Location of manure pit	
13	Adjacent	33	27.50
	Distant	87	72.50
	No	0	0
		Cleanliness of house	
14	Very dirty	16	13.33
	Moderate dirty	49	40.83
	Slight dirty	43	35.84
	Clean	12	10.00
		Summer management	
15	Splashing of water	15	12.50
	Fan	59	49.17
	No any measure	46	38.33
		Winter management	
16	Providing bedding material	06	5.00
	Closing shed with curtain	24	20.00
	No any measure	90	75.00

might be due to better provision of ventilation and cost-effective construction of the animal sheds (Singh *et al.*, 2016). However, 22.50, 22.50, 15.83 and 5.00% respondents had all side, double side, one side and triple sidewall in their animal houses, respectively. Data revealed that 69.17 and 30.83% farmers had pucca and wooden assisted temporary manger to feed their animals, respectively. This might be due to the awareness of dairy farmers regarding better utilization and to avoid wastage of feeds and fodder (Pilaniya *et al.*, 2018; Rathore *et al.*, 2010).

The farmers with the provision of the pucca floor had the facility of pucca drainage of urine (64.17%) in their animal shed while remaining respondents (35.83%) had no drainage, so urine soaked in the earthen floor lead to dampness and unsanitary condition of their animal houses. The proper drainage system helps to maintain cleanliness in animal houses and also improves the hygienic condition and thereby reduction in the occurrence of disease in animals (Rao *et al.*, 2015). However, the results are contrary to the results reported by some of the researchers (Sreedhar *et al.*, 2017; Vranda *et al.*, 2017). Majority of respondents (85.00%) had the provision of good ventilation, whereas only 8.33 and 6.67 % had a poor and fairly good type of ventilation in their animal sheds. The provision of good ventilation indicates farmers' awareness of the importance of ventilation to live animals. Proper ventilation is beneficial for the health and production of dairy animals (Sabapara *et al.*, 2015). About 72.50% of respondents constructed manure pit away from their animal sheds, while 27.50 % of the respondents kept manure pits adjacent to their animal sheds for disposal of solid waste. This might be due to the awareness of dairy farmers regarding disposal of livestock waste and to maintain hygienic condition around the animal as well as human dwellings (Patbandha *et al.*, 2018).

Regarding the cleanliness of the animal shed in our study, it was observed that 40.83% of the dairy farmers had moderate dirty animal houses followed by 35.84, 13.33 and 10.00% of the respondents had slight dirty, very dirty and clean animal houses, respectively. The study revealed that respondents used fans (49.17%) and splashing of water (12.50%) in summer season to protect their animals from heat stress. However, 38.33% of respondents adopted no measure to protect their animals from heat stress. Similarly, the majority of 75.00% respondents had no provision, whereas 20.00% of respondents used curtain and 5.00% respondents used bedding material to protect their animals in the winter season. It might be due to the awareness of the dairy farmers regarding ill effects of heat stress on the health and productivity of the dairy animals (Sabapara *et al.*, 2015). However, the severity of winter is less in the region may be the reason for lacking in the protection of dairy animals in the winter season.

## CONCLUSION

Based on the findings, it was revealed that dairy farmers of Anand district keep their dairy animals in a conventional type of house near to their dwelling, with pucca manger and floor, with different types of roof in their animal houses. Irrespective of taluka, different aspects of housing was observed. Impact of the cooperative system was observed in improved dairy housing system for welfare and production of animals.

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