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Study on Housing Management Practices Followed by Dairy Farmers in Northern Telangana State of India

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ABSTRACT

Background: Adequate housing is essential for wellbeing and welfare of any kind of livestock, which keeps them comfort and healthy thereby increases production and reproduction performance by exploiting their fullest genetic potential. As scanty information available on farmers practices on animal housing, the present study was undertaken to assess housing management practices followed by dairy farmers in Northern Telangana state of India.

Methods: Data were collected from randomly selected 240 dairy farmers from 24 villages of 8 mandals from 4 districts. A pretested semi-structured questionnaire in precise language was employed for collecting data through interview and face to face discussion with the dairy farmers duly avoiding ambiguous, dichotomous and non-variant items for proper interpretation.

Result: Majority (59.58%) respondents kept animals in kutcha houses and 74.58% sheds located to nearby their dwellings. Majority (50.42%) of the sheds were in east-west direction and 82.08% of the respondents followed single line system of housing. Majority 91.25, 95.42, 84.16, 67.92 and 69.58% of the respondents protected animals against extreme weather conditions, maintained cleanliness, had earthen floor, backward slope in the floor and wooden pillars, respectively. Majority of animal houses had thatched roof (50.42%) and without walls (82.08%) and majority of them (89.58%) provided mangers but only 11.25% had *pucca* type mangers. Only a few respondents (14.58%) provided pucca drainage system and most of the farmers (58.75%) had manure pit adjacent to their animal houses. The study concludes that, the dairy farmers of the study area are well aware of advantages of keeping animals in hygienic animal houses under adverse tropical climatic conditions of the study area and providing them periodical trainings and visits to modern organised dairy farms helps them to optimize productivity from dairy animals.

Key words: Dairy farmers, Districts, Housing, Management practices.

INTRODUCTION

Animal husbandry practices play a vital role in the improvement of animal productivity and livestock production. Dairy farming plays an important role in social and economic livelihood of the farmers of Telangana state. Provision of health sustaining comfortable environment is a principal function of farm animal housing (Thomas and Sastry, 2009). Adequate housing management is essential for wellbeing and welfare of any kind of livestock, which keeps them comfort and healthy thereby increases production and reproduction performance by exploiting their fullest genetic potential. Provision of proper housing facilities to dairy animals not only reduces the energy wastage in maintain thermo neutral zone but also provides good hygienic condition, reduces incidence of diseases, protects them from predators and provides better working condition to the farmers (Prajapati *et al*., 2015).

As very scanty information available on farmers practices on animal housing in the tropical climate conditions prevailing, the present study was undertaken to assess existing housing management practices adopted by dairy farmers in Northern Telangana state of India.

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MATERIALS AND METHODS

A simple random sampling technique was employed to select the districts, mandals/towns, villages and respondents for the present study. Out of the 33 districts in Telangana state the present study was conducted in Karimnagar, Kamareddy, Jagtial and Peddapalli districts of Northern region. These four districts have been purposively selected because, they are considered as potential districts for milk production due

to assured veterinary and milk marketing facilities in the state of Telangana and animal husbandry is the most important economic occupation in these districts. Two mandals/towns from each district and three villages from each mandal were selected making up a total of 24 villages with 10 dairy farmers randomly selected from each village, thus making 240 respondents as followed (Rajashekar *et al.*, 2018).

The present study was undertaken in the selected districts of North Telangana state during the year 2018-19 for a period of 5 months with prior approval from P.V.N.R. Telangana Veterinary University, Hyderabad. A pretested semi-structured questionnaire in precise language was employed for collecting data through interview and face to face discussion with the dairy farmers duly avoiding ambiguous, dichotomous and non-variant items for proper interpretation. The geographic profile of the above four districts is presented in Table 1.

The researcher visited the villages of the respondents and they were interviewed one at a time by the researcher himself. The geographic profile of selected districts is presented in Table 1. Before collecting the data, the objectives of the study were lucidly explained and careful attempt was made to develop rapport with them. The questions in the schedule were presented to them in precise language to ensure that they perceived the questions correctly, so as to avoid any interpretational variation of the questions among the respondents and answers obtained were recorded instantly along with personal observations.

Data were collected on various housing management practices followed by them like type of shed, location of shed, type of flooring, type of roof, direction of shed, ventilation, cleanliness of shed, slope in floor, manger, floor space availed/ given, manure disposal, *etc*. A total of 19 questions were asked to farmers on shelter management practices. The respondents were given full weightage if he/ she gave correct answer to the question. If he/she gave wrong answer no score was assigned. The total score obtained by the individual respondent for all the statements was recorded and tabulated as per the objectives concerned and simple tabular analysis with percentage was followed for analyzing the data.

RESULTS AND DISCUSSION

Housing management practices followed by the dairy farmers in selected districts presented in Table 2, revealed that most of the farmers (59.58%) provided a kutcha type of houses in the study area. These findings are similar to the findings of Varaprasad *et al.* (2013) and Patil *et al.* (2015). In contrast to this Rajasekhar *et al.* (2018) found that majority of dairy farmers provided a pucca type of housing to their dairy animals followed by kutcha type in the study area. Majority (74.58%) of the farmers in the entire study area housed their animals nearby their dwellings, whereas few farmers (13.75%) kept their animals attached to their home. These findings are similar to the findings of Vij and Tantia (2005) and Dhaliwal and Dhillon (2017). Availability of land for shed, convenience and hygiene could be the reasons for deciding the location of the shed. In the case of direction of shed, most of the sheds (50.42%) are east-west in direction. Because of hot climatic conditions in north Telangana region farmers preferred east-west direction. These findings are corroborating with the findings of Sinha *et al*. (2009) and Kumar *et al*. (2011). In the entire study area 82.08 per cent of dairy farmers provided single line housing system to their dairy animals. The probable reason might be due to the fact that single line housing is cost-effective. Prevailing climatic conditions and economic status of the farmers might have played a significant role in the selection of housing. The results are in consonance with the findings of Ahiwar *et al.* (2009); Sinha *et al.* (2009) and Vranda *et al*. (2017). Regarding the size of the animal house, 80.42 per cent respondents provided optimum house. These findings are similar to the findings of Sinha *et al.* (2009) and Kumar and Mishra (2011).

A majority number of farmers provided adequate floor space, lighting and ventilation to the animals. The findings indicated the awareness of farmers towards the provision of floor space, lighting and ventilation. The present findings are in accordance with those reported by Sreedhar *et al.* (2017). It was noticed that proper housing to protect animals from adverse weather conditions and cleaning of shed regularly was followed by more than 90 per cent of dairy farmers in the study area. These findings are similar to the findings of Janaka (2017).

Earthen flooring was found to be the dominant (84.16%) type of flooring practiced by the farmers in the study area, followed by cement concrete (12.92%), mud flooring (1.67%) and stone paved (1.25%). These results are similar to the findings of Sabapara *et al.* (2010) and Kishore *et al.* (2013).

Table 1: Geographic profile of selected four districts in North Telangana State.

Parameters	Karimnagar district	Kamareddy district	Jagtial district	Peddapalli district
Area (km^2)	2.128 km^2	3.652 km^2	2.419 km^2	4.614 km^2
Latitude and Longitude	18.43694°N, 79.124167°E	18.3240°N, 78.3343°E	18.7909°N, 78.9119°E	18.6162°N, 79.3832°E
Average rainfall (mm)	907 mm	994 mm	901 mm	614 mm
Average temperature	27.7°C	26.3°C	27.6°C	24.3°C
Soil type	Sandy loamand red chelkasinterspersed with Black cotton Soils.	Red loamy soils, medium black soils and deep black soil	Sandy loam and red chelkas interspersed with black cotton soils	Sandy loam and red chelkas

Table 2: Housing management practices followed by respondents.

Housing management practices		Karimnagar N=60 (%)	Kamareddy N=60 (%)	Jagtial N=60 (%)	Peddapalli N=60 (%)	Overall N=240 (%)
Type of housing	No shelter	13(21.67)	18(30.00)	12(20.00)	16(26.66)	59(24.58)
	Kutcha	29(48.33)	35(58.33)	39(65.00)	40(66.67)	143(59.58)
	Pucca	18(30.00)	7(11.67)	9(15.00)	4(6.67)	38(15.84)
Location shed	Attached to human dwelling	11(18.33)	0(0)	19(31.67)	3(5.00)	33(13.75)
	Nearby their dwelling	45(75.00)	50(83.33)	37(61.67)	47(78.33)	179(74.58)
	At the field of farmer	4(6.67)	10(16.67)	4(6.66)	10(16.67)	28(11.67)
Direction of shed	East-West	31(51.67)	27(45.00)	33(55.00)	30(50.00)	121(50.42)
	North-South	20(33.33)	21(35.00)	18(30.00)	17(28.33)	76(31.67)
	No direction	9(15.00)	12(20.00)	9(15.00)	13(21.67)	43(17.91)
System of housing	Single line	54(90.00)	41(68.33)	47(78.33)	55(91.66)	197(82.08)
	Head to head	5(8.33)	19(31.67)	12(20.00)	4(6.67)	40(16.67)
	Tail to tail	1(1.67)	0(0)	1(1.67)	1(1.67)	3(1.25)
Size of house	Optimum	48(80.00)	47(78.33)	49(81.67)	49(81.66)	193(80.42)
	Not optimum	12(20.00)	13(21.67)	11(18.33)	11(18.67)	47(19.58)
Floor Space available	Adequate	59(98.33)	59(98.33)	58(96.67)	58(96.66)	234(97.50)
	In adequate	1(1.67)	1(1.67)	2(3.33)	2(3.33)	6(2.50)
Light	Adequate	59(98.33)	59(98.33)	60(100.00)	54(90.00)	232(96.67)
	In adequate	1(1.67)	1(1.67)	0(0)	6(10.00)	8(3.33)
Ventilation	Poor	1(1.67)	1(1.67)	1(1.67)	2(3.33)	5(2.08)
	Fairly good	2(3.33)	0(0)	10(16.67)	2(3.33)	14(5.83)
	Good	56(93.33)	59(98.33)	49(81.66)	54(90.00)	218(90.83)
	No ventilation	1(1.67)	0(0)	0(0)	2(3.33)	3(1.26)
Provision and practice to protect animal from extreme weather	Yes	58(96.67)	51(85.00)	57(95.00)	53(88.33)	219(91.250)
	No	2(3.33)	9(15.00)	3(5.00)	7(11.67)	21(8.75)
Cleanliness of Shed	Dirty	1(1.67)	0(0)	5(8.33)	5(8.33)	11(4.58)
	Clean	59(98.33)	60(100)	55(91.67)	55(91.67)	229(95.42)
Type of floor	Pucca (Cement concrete)	9(15)	6(10.00)	10(16.67)	6(10)	31(12.92)
	Earthen floor	48(80)	53(88.33)	49(81.66)	52(86.67)	202(84.16)
	Muddy	2(3.33)	0(0)	0(0)	2(3.33)	4(1.67)
	Stone paved	1(1.67)	1(1.67)	1(1.67)	0(0)	3(1.25)
Slope in floor	Towards front	0(0)	0(0)	0(0)	0(0)	0(0)
	Towards back	46(76.67)	40(66.67)	36(60.00)	41(68.33)	163(67.92)
	No slope	14(23.33)	20(33.33)	24(40.00)	19(31.67)	77(32.08)
Type of pillar/pole	Wooden	42(70.00)	46(76.67)	36(60.00)	43(71.67)	167(69.58)
	Iron	13(21.67)	5(8.33)	8(13.33)	8(13.33)	34(14.16)
	Cemented	5(8.33)	2(3.33)	4(6.67)	1(1.66)	12(5.00)
	Brick	0(0)	0(0)	0(0)	0(0)	0(0)
	No pillars	0(0)	7(11.67)	12(20.00)	8(13.33)	27(11.26)
Wall of house	Full	0(0)	0(0)	1(1.67)	0(0)	1(0.42)
	Half	13(21.67)	12(20.00)	7(11.66)	10(16.67)	42(17.50)
	No wall	47(78.33)	48(80.00)	52(86.67)	50(83.33)	197(82.08)
Type of roof	No roof	12(20)	17(28.33)	13(21.66)	19(31.67)	61(25.42)
	Asbestos sheets roof	12(20)	0(0)	3(5.00)	6(10.00)	21(8.75)
	Galvanized iron sheets roof	10(16.67)	7(11.67)	10(16.67)	9(15.00)	36(15.00)
	Thatched roof	26(43.33)	35(58.33)	34(56.67)	26(43.33)	121(50.42)
	Tiles roof	0(0)	1(1.67)	0(0)	0(0)	1(0.42)
Provision of manger	Yes	58(96.67)	54(90.00)	54(90.00)	49(81.67)	215(89.58)
	No	2(3.33)	6(10.00)	6(10.00)	11(18.33)	25(10.42)

Table 2: Continue...

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Type of manger	Kutcha	6(10.00)	5(8.33)	16(26.7)	8(13.33)	35(12.50)
	Pucca	8(13.33)	8(13.33)	9(15.00)	5(8.33)	30(11.25)
	Wooden assisted temporary	46(76.67)	47(78.33)	35(58.3)	40(66.67)	168(70.83)
	No manger	0(0)	0(0)	0(0)	7(11.67)	7(5.41)
Provision of drainage system	Pucca drain	9(15)	8(13.33)	9(15.00)	9(15.00)	35(14.58)
	Soaked at earthen floor	51(85)	52(86.67)	51(85.00)	51(85.00)	205(85.42)
Location of manure pit	Adjacent	36(60.00)	30(50.00)	33(55.00)	42(70.00)	141(58.75)
	Distant	23(38.33)	23(38.33)	27(45.00)	16(26.67)	89(37.08)
	No	1(1.67)	7(11.67)	0(0)	2(3.33)	10(4.17)

Figures in parenthesis in the table indicates percentages.

It was observed that, the flooring pattern followed by farmers was in accordance to their economic status. Majority (67.92%) of the dairy shed floors in the study area were towards the back followed by without any slope (32.08%). These results are in agreement with the findings of Rathore and Kachwaha (2009); Sinha *et al.* (2009); Rathore *et al.* (2010) and Kumar and Mishra (2011).

Majority of the dairy farmers preferred wooden type of pillars rather than iron pillars. This owed to the low cost and easy availability of wooden poles. The findings are in support of the findings of Sabapara *et al.* (2010).

The data depicted in Table 2, revealed that about 82.08 per cent of the respondents had no walls, while 17.50% of the respondents had half wall in their animal houses. It might be due to the fact that no walls or half walls had provided better ventilation and cost-effectiveness. These findings are contrary to the results of Sinha *et al.* (2009) and Kumar *et al.* (2011) who observed that majority of the animal houses had a full wall in their study area. Regional differences in the climatic conditions might be the reason for the construction of the walls with different heights in the animal houses.

Majority of the dairy farmers in the study area provided thatched roof to their animal houses. This might be due to the reason that the thatched roof was cost-effective and easily available to the farmers. Sinha *et al.* (2010) and Hussain *et al.* (2019) also reported similar findings in their studies. In case of provision of manger, 70.83 per cent of the respondents provided wooden assisted manger of varying size and shapes. The results obtained are similar to the findings of Sabapara *et al.* (2010).

Regarding drainage facility, it was observed that only (14.58%) of respondents provided pucca drainage system for urine, while the majority (85.42%) had no drainage facility and left the animals urine on the earthen floor for natural soaking as it remained cheaper but the earthen floor is highly prone to insect and worm problems. These findings are in agreement with the observations of Sabapara *et al.* (2010) and Vranda *et al.* (2017). Majority (58.75%) of the respondents kept manure pit adjacent to their animal sheds, while 37.08 per cent of the respondents kept manure pits at distance to their animal sheds. These findings are in accordance with the results of Tiwari *et al.* (2009) and Kumar *et al.* (2011).

CONCLUSION

The study concludes that, the majority of dairy farmers of the study area are well aware of advantages of keeping animals in hygienic sheds under adverse tropical climatic conditions of the study area. Majority of farmers using temporary mangers, for whom enlightenment on importance of providing pucca mangers is required and only 9% of farmers in study area having pucca drainage system and hence, it is recommended that, providing them periodical trainings and visits to modern organised dairy farms as suggested by Harikrishna (2014) and Hussain *et al.* (2019) may help them to optimize productivity from dairy animals.

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Conflict of interest

All authors declared that there is no conflict of interest.

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