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Housing Practices of Crossbred Cattle Adopted in Pathardi Tahsil of Ahmednagar District

M.G. Mote[1], H.B. Tambe[1] and U.S. Gaikwad[2]
[1]*Dept. of Animal Husbandry and Dairy Science, Mahatma Phule Krishi Vidyapeeth, Rahuri, Maharashtra*
[2]*Dept. of Animal Husbandry and Dairy Science, College of Agriculture, Muktainagar, Jalgaon, Maharashtra*
Corresponding Author Email : mahendramote18@gmail.com

Abstract

This investigation was undertaken to study housing practices of crossbred cattle adopted in Pathardi tahsil of Ahmednagar, Maharashtra (India). Total 150 crossbred cattle owners were chosen randomly as respondents from the ten randomly selected villages. The data was collected through pretested questionnaire. The owners were distributed in three groups on the basis of crossbred cattle possessed by them as group-I less than 5 crossbred cattle, Group-II 6 to 10 crossbred cattle and group-III more than 11 crossbred cattle. Majority (56.00 %) of cattle owners were between age of 31 to 50 years age. In education 40.66 per cent of the owners had completed primary education and 12.66 per cent were educated up to graduation level. Maximum (32.00 %) farmers were having medium land holdings i.e. 2.1 to 4 ha. Further, 40.00, 38.00 and 22.00 per cent respondents had small, medium and large herd size, respectively. About 68.65 per cent farmers were having low annual income i.e. below 1,00,000 per annum. Majority (89.33%) of cattle owners had provided shed facility and remaining 10.66 per cent farmers were not providing shelter to their animals. The 52.00 per cent farmers were providing pacca cattle shed and 48.00 per cent were providing kaccha cattle shed. Further, 46.66 per cent farmers provided thatched roofing, 48.66 per cent farmers provided G.I. sheets and very few farmers (4.66 %) were using asbestos for roofing. There was positive and significant association between number of crossbred cattle maintained by various groups of farmers and different housing practices viz., availability of cattle shed, type of shed, provision of optimum size of manger, direction of byre, slope of floor and type of wall. There was non-significant association between number of crossbred cattle maintained by various groups of farmers and housing practices viz., type of roof, type of manger and availability of whitewash for cattle shed.

Key words *: Housing, crossbred, cattle, farmer.*

Introduction

India is endowed with the largest livestock population in the world. The total livestock population consisting of cattle, buffalo, sheep, goat and pig etc. in the country is 535.78 million. Currently India has 192.49 million cattle population. The female cattle i.e. cows population is 145.12 million. Crossbreed cattle population in the country is 50.42 million (2). Animal husbandry plays a prominent role in the rural economy supplementing the income of rural household, particularly, the landless small and marginal farmers. It also provides subsidiary occupation in semi urban area and more so far people living in hilly and draught prone areas. An efficient management of cattle will be incomplete without a well planned and adequate housing of cattle. Improper planning in the arrangement of animal housing may results in additional labour charges and thus curtail the profit of the owner. Minimum investment should be put towards housing of animals by utilizing the locally available materials for construction of roof, floor and walls without comprising the comfort of animals. Housing along with feeding management plays a very significant role in exploiting real potential of dairy animals (2, 3, 4, 5). The comfort zone for cross-bred is between 65^0 to 75^0 F. These finding show that milk yield of crossbred cattle is likely to be affected during summer months. It has also been observed that exposure of crossbred to high environmental temperature in summer reduces the feed intake (6). Therefore they should be provided with proper housing during summer months. To supply the demand of milk, most of the dairy farmers from Pathardi tahasil of Ahmednagar district prefers to rear crossbred cattle. High milk producing animal require special attention, this factor is usually ignored even by the progressive dairy farmers. Therefore, it is, necessary to study housing practices followed by crossbred cattle owners. The present investigation was undertaken to study the socio-economic status of cattle owners and housing practices of crossbred cattle followed by dairy farmers in Pathardi tahsil.

Materials and Methods

Location and Climate : The present study was undertaken in Pathardi tahsil of Ahmednagar district of Maharashtra state. Pathardi is one of the prominent tahsil of Ahmednagar district comprising 138 villages out of which 10 villages were selected for the present study. Pathardi tahsil receives approximately 60 cm rainfall

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mainly from June to August months. In summer, it is usual that day temperature crosses 40^0 C. Average annual high temperature is 32.4^0 C and average low temperature is 17.9^0 C. This tahsil comes under drought prone area and most of the land in this region is medium fertile.

Source of data : All the villages in the Pathardi tahsil were arranged in descending order as per crossbred population and villages having highest, medium and lowest crossbred population were selected randomly. In all 150 crossbred cattle owners were chosen randomly as respondents from the selected villages. These farmers were grouped into different groups as per the number of crossbred cattle they possessed. Group of farmers were as small up to 5 crossbred cattle, medium having 6 to 10 buffaloes and large possessing 11 and above crossbred cattle.

Collection of data : The data for the present study was collected from the selected crossbred cattle owners with the help of pretested interview schedule (Questionnaire). This questionnaire covered information on various socio-economic conditions of farmer as well as housing practices of crossbred cattle followed by farmers. Socio personal information of crossbred cattle owners like age, education, land holding, herd size and annual income was collected. The information regarding different housing practices viz, availability of cattle shed, type of shed, types of roof, provision of optimum size of manger, types of manger, direction of byre, slope of floor, use of whitewash byre and types of wall was obtained from crossbred cattle owners.

Statistical analysis : To know the influence of groups of farmer on adoption of improved housing practices, chi-square test was applied by using formula given by (7).

$$x^2 \quad \frac{1}{n_1 n_2} \quad \frac{(an_2 \quad a_1 n_1)^2}{a \quad a_1}$$

Where,

x^2 = Chi-square test,

a = frequency of adopter,

a_1 = frequency of non-adopter,

n_1 = total adopters,

n_2 = total non-adopter.

Results and Discussion

Socio personal and economical characteristics of crossbred cattle owners : Highest proportion of dairy farmers i.e. 56.00 per cent belonged to middle age group of 31 to 50 years, 40.66 per cent of the farmers had primary education, large proportion of farmers i.e. 50.66 per cent were marginal and small farmers, 40.00 per cent respondents had small herd size and 34.66 per cent respondents had medium annual income ranging from Rs. 75,001 to 1,00,000.

Number of crossbred cattle maintained by farmers according to size of land holding and herd size : The mean number of crossbred cattle was 4.16, 5.64, 5.80, 7.39 and 13.64 in landless, marginal, small, medium and large farmers, respectively. The higher numbers of crossbred cattle were reared by the farmers having large size of land holding, which could be accounted for the better feeding and shed facilities for rearing the large number of animals. The landless farmers on the other hand were observed to be rearing lower average number of animals. They maintain hardly two or three crossbred cattle because they might be unable to supply the feeds for the large herd. For a smaller herd they can fulfill the need for feed and fodder by purchasing it or by wages they get in kind. These findings were in close agreement with (8) while working on dairy farmers in dairy cooperative societies.

Housing practices of crossbred cattle

Shed for crossbred cattle according to various groups of farmer : This indicates that most of crossbred cattle owners were providing cattle shed facility. However, in group I, 20.00 per cent of farmers were not providing shed may be due to small herd size availability of limited resources and lack of awareness regarding shed facility. There was a positive and significant ($P<0.05$) association between availability of cattle shed and number of crossbred cattle maintained by various groups of farmer. Significant results were supported by (9).

Type of shed available for crossbred cattle according to the various groups of farmers : It was observed that, 52.00 per cent farmers were providing pacca cattle shed and remaining 48.00 per cent were providing kaccha cattle shed. Majority of farmers in group III (75.75 %) provided pacca cattle shed, which indicates that, the farmers running livestock enterprises on commercial basis were adopting advanced housing practices. However, more than fifty per cent farmers in group-I (53.33 %) and II (56.14 %) were providing kaccha cattle shed, because pacca housing may not be economical for them or may due to less number of animals they possess. There was positive and significant ($P<0.05$) association between number of crossbred cattle maintained by various groups of farmer and type of cattle shed. It indicates that, as the number of animal increases farmers preferred to construct pacca housing to cattle. Present findings were in agreement with (10).

Availability of type of roof for cattle shed according to various groups of farmer : There was non-significant

Table-1 : Distribution of respondents according to age, education, land holding, herd size and annual income.

Sr. No.	Particulars	Frequency	Per cent
A.	**Age**		
1.	Young (Up to 30 Years)	46	30.66
2.	Middle (31 to 50 years)	84	56.00
3.	Old (51 years and above)	20	13.33
B.	**Education**		
1.	Illiterate (No education)	15	10.00
2.	Primary (up to 4th std.)	61	40.66
3.	Secondary (5th to 10th std.)	35	23.33
4.	Higher secondary (11th to 12th std.)	20	13.33
5.	Graduation	19	12.66
C.	**Land Holding**		
1.	No holding (Landless)	12	08.00
2.	Marginal (up to 1 ha.)	31	20.66
3.	Small (1.1 to 2 ha)	45	30.00
4.	Medium (2.1 to 4 ha)	48	32.00
5.	Large (Above 4 ha.)	14	9.33
A.	**Herd size**		
1.	Small size (Up to 5 crossbred cattle)	60	40.00
2.	Medium size (6 to 10 crossbred cattle)	57	38.00
3.	Large size (Above 11 crossbred cattle)	33	22.00
B.	**Annual income**		
1.	Low (Up to 50,000 /-)	17	11.33
2.	Marginal (50,001 /- to 75,000 /-)	34	22.66
3.	Medium (75,001 /- to 1,00,000 /-)	52	34.66
4.	High (Above 1,00,001 /-)	47	31.33

association between number of crossbred cattle maintained by various groups of farmers and availability of type roof for cattle shed. Present findings were similar to the (2).

Provision of optimum size of manger for crossbred cattle shed according to various groups of farmer : There was positive and significant (P<0.05) association between number of crossbred cattle maintained by various groups of farmers and provision of optimum size of manger for cattle. These results were in accordance with (11).

Type of manger for crossbred cattle shed according to various groups of farmer : There was non-significant association between number of crossbred cattle maintained by various group of farmers and availability of type manger in cattle shed. Present findings were similar to the findings of (12).

Direction of byre for crossbred cattle according to various groups of farmer : Majority of farmers i.e. 81.66, 61.40 and 48.48 per cent were providing byres in East-West direction in group I, II and III, respectively. There was positive and significant (P<0.05) association between number of crossbred cattle maintained by various group of farmers and direction of byre for cattle. These findings were in agreement with (13).

Slope of floor for crossbred cattle shed according to various groups of farmer : Most (56.66 %) of the farmers provided slope of floor towards back side of manger and 34% farmers had not provided slope of floor in cattle shed. In group I most of the farmers (48.33%) were not providing slope of floor for cattle shed. This might be due to lack of awareness of keeping slope of floor to maintain hygienic conditions. There was positive and significant (P<0.01) association between number of crossbred cattle maintained by various group of farmers and availability of appropriate slope of floor in cattle shed.

Use of white wash for crossbred cattle shed according to various groups of farmer : It was observed that, overall 51.33 per cent farmers used whitewash byre and 48.66 per cent farmers did not used white wash byre for their cattle shed. Majority of farmers (60.60 %) in group III provided white wash in byres, whereas 51.66 per cent farmers in group I were not using white wash byre in cattle shed. There was non-significant association between number of crossbred cattle

Table-2 : Different housing practices and its association with number of crossbred cattle maintained by various groups of farmer.

Practice	Response	Group I		Group II		Group III		Overall	
		N	%	N	%	N	%	N	%
Shed for crossbred cattle	Yes	48	80	53	92.98	33	100	134	89.33
	No	12	20	04	7.01	00	-	16	10.66
	Total	60	100	57	100	33	100	150	100
	Chi-square = 10.22*								
Types of Roof	a. Thatched	33	55.00	22	38.59	15	45.45	70	46.66
	b. GI sheet	26	43.33	33	57.89	14	42.42	73	48.66
	c. Asbestos	01	1.66	02	3.50	04	12.12	07	4.66
	Total	60	100	57	100	33	100	150	100
	Chi-square = 8.2								
Size of Manger	a. Optimum	33	55.00	42	73.68	28	84.84	103	68.66
	b. Not optimum	27	45.00	15	26.31	05	15.15	47	31.33
	Total	60	100	57	100	33	100	150	100
	Chi-square = 9.89*								
Type of Manger	a. Pacca	31	51.66	30	52.63	19	57.57	80	53.33
	b. Kaccha	29	48.33	27	47.36	14	42.42	70	46.66
	Total	60	100	57	100	33	100	150	100
	Chi-square = 0.31								
Direction of byre	a. N-S	11	18.33	22	38.59	17	51.51	50	33.33
	b. E-W	49	81.66	35	61.40	16	48.48	100	66.66
	Total	60	100	57	100	33	100	150	100
	Chi-square = 11.69*								
Types of wall	a. Full	12	20.00	36	63.15	24	72.72	72	48.00
	b. Half	41	68.33	17	29.82	07	21.21	65	43.33
	c. No wall	07	11.66	04	07.01	02	06.06	13	08.66
	Total	60	100	57	100	33	100	150	100
	Chi-square = 32.57**								

maintained by various groups of farmer and availability of whitewash for cattle shed.

Type of wall for crossbred cattle shed according to various groups of farmer : Majority of farmers in group-III (72.72 %) provided full type wall whereas, 68.33 per cent farmers in group-I provided half type of wall in their cattle shed and only 6.06 per cent farmers in group-III had not provided the wall. There was positive and highly significant (P<0.01) association between number of crossbred cattle maintained by various group of farmers and availability of type of wall for cattle shed.

Conclusions

The present study indicated that, adoption of scientific housing management practices were poor in Pathardi tahsil of Ahmednagar district, however housing practices were better for big herd size than small and medium herd size. The majority of farmers were having limited land holdings, small herd size and low income, whereas, most of the farmers were middle aged and less educated. Housing management practices adopted were unhygienic, unhealthy, not according to the scientific recommendation, so there is need to provide knowledge of scientific housing management practices to the farmers through extension education program. High cost of investment in construction, inadequate credit facilities and lack of knowledge about scientific housing practices were major constraints.

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