

Original Research Article

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Existing Housing and Feeding Management Practices of Buffaloes in Firozabad District of Uttar Pradesh, India

Raj Kumar^{1*}, P.K. Singh¹, R.K. Goyal¹, Hitesh Singh² and B.L. Kumhar³

¹Department of Animal Husbandry and Dairying, R.B.S. College, Bichpuri, Agra-283105, India

²Department of A.H, SVPUAT, Meerut, India

³GKMS Project, Agricultural Research Station, Ummedganj, Kota, India

*Corresponding author

ABSTRACT

Study was carried out in Firozabad district of Uttar Pradesh involving 120 buffalo owners scattered in eight villages of two Tehsil. The farmers were further categorized into three groups viz., small (< 2 adult buffaloes), medium (> 2 and < 5 adult buffaloes) and large (> 5 adult buffaloes) householders. Data pertaining to various aspects of housing and feeding practices were collected through a pre- tested questionnaire. The results indicate that only 60 per cent of buffalo owners provide proper housing shelter to their buffaloes, 68.33 per cent respondent's possessed animal house with Kachcha floor with very poor ventilation facilities. Only 54.17 per cent houses have slope for proper drainage of urine and faeces and 64.17 percent respondent's made additional arrangement to protect buffaloes against extreme weather. More than three fourth respondents provide green fodder to buffaloes throughout the year and of them nearly half of them fed it after chaffing. Wheat straw was the sole dry rough age being used by most of the buffalo keepers. 82.50 per cent farmers used homemade concentrate. Only 7.50 per cent respondents offer mineral mixture to their buffaloes. 89.17 per cent buffalo owners fed weighed quantity of concentrate mixture and almost all of them provide it after soaking in water. More than two third respondents fed concentrate mixture before milking. In general results suggest that housing and feeding practices in the study area were not satisfactory and need to be corrected through motivation and providing extension services among the farmers.

Keywords

Buffaloes, Housing, feeding, management practices, households.

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Introduction

The domestication and rearing of buffaloes have an old age practice in India since the era of mediaeval and have been recognized as milch animals along with cows and goats. Currently India has highest buffalo population in the world 96.9 million during 2011 (Kumar *et al.*, 2011). Buffalo is more productive than cattle due to better feed conversion efficiency and more resistant to disease because of

above specification buffaloes are now more preferred by the farmers over the cattle.

In Uttar Pradesh the buffalo's population are increasing and outnumber the cattle population simply because of their easy adaptability in harsh environment and producing milk of higher fat content. It is mainstay in production of butter and ghee in

the country amongst various management practices (feeding, breeding, housing and health care *etc.*). It is feeding and housing which play a pivotal role in exploiting the genetic potential of animal. Feeding alone contributes about 60-70 percent of total cost of milk production and offers the greatest scope to bring the input-output relationship to an economical level. Besides, providing proper housing to dairy animal is also equally important in order to achieve maximum return from the animals. Better housing arrangements not only provide shelter but also keep the animals in comfortable zone especially during severe environmental conditions *i.e.* either extreme cold or hot when animals are most vulnerable to get afflicted with stress conditions. Keeping above views in mind the present study was designed to gather information pertaining to housing and feeding aspects of management practices prevailed among various categories of buffalo owners in Firozabad district of western Uttar Pradesh.

Materials and Methods

A multistage stratified random sampling was adopted to select the respondents. Purportedly Firozabad district famous for glass industry in western Uttar Pradesh during 2011- 2012, out of four two Tehsil *viz.*, Jasarana and Shikohabad of the district were selected. Further, these two Tehsils were divided in to blocks which they constituted. Two blocks one from each tehsil *viz.*, Jasarana and Hath want were taken. Then four villages from each block which in total eight villages were selected. Finally fifteen farmers having varying livestock holdings from each village were taken. Thus in total 120 households were selected randomly for the study. A well structured and pre-tested questionnaire was used to gather information on various aspects of prevailing housing and feeding management practices on buffaloes in the district. The data collected were tabulated and

analysed as per standard procedures (Snedecor and Cochran, 1980) (Table 1).

Results and Discussion

Housing Management Practices

Results recorded reveal that of the total 66.67 per cent respondents provide housing shelter to their buffaloes while 33.33 per cent farmers kept their animals without shelter which is poor indices of housing management. Regarding time spent by the animals in housing shelter, the observations elucidate that only 20.83 per cent buffalo owners kept their buffaloes all time in house followed by 49.17 per cent farmers who provide housing only at night while 30.00 per cent kept their buffaloes in housing only in extreme weather conditions. So far as sharing own house with animals are concerned, 30.83 percent farmers kept buffaloes near their dwelling house, 33.33 per cent inside dwelling house and 35.84 per cent had share their house with buffaloes. The results regarding providing housing shelter to buffaloes in present investigation are quite encouraging. Regarding type of shed, roof and floor the results vividly indicate that more than half (52.50 %) of the farmers possessed Kachcha shed and 47.50 percent had pucca brick cemented shed. 36.67 percent farmers had shed with pucca roof, 33.33 per cent thatched roof and 30.00 per cent buffalo owners had shed with asbestos sheet. Similarly majority of the buffalo owners (68.33%) have housing shelter with Kachcha floor and only nearly one third farmers *i.e.* 31.67 per cent were found to possessed pucca cemented floor for their dairy animals. Further, observations, with respect to type of wall of house, illustrate that of the total 33.33 per cent buffalo owners had house with half wall, 30.83 per cent with full wall and nearly 35.84 per cent with no wall. In sight into data further reveal that only 22.50 per cent respondents provide well

ventilation in dairy houses, 38.33 per cent kept their buffaloes in semi-ventilated houses and 39.17 per cent provided no ventilation in the house. This trend of observation shows poor knowledge levels of buffalo owners in the surveyed area towards importance of ventilation facilities in the dairy houses. So far as provision of slope in dairy shed is concerned only 24.17 per cent households provide sloppy floor towards back in dairy shed, half of the respondents *i.e.* 50.83 percent provide levelled floor with no slope, while 25.00 per cent possessed house with uneven floor which reflect poor slope provision in the dairy houses. This might be due to lack of awareness of keeping slope in floor to maintain hygienic conditions in the dairy houses. The level of awareness about floor slopes observed during current study is less than what observed in earlier studies. However, notwithstanding the above facts more than half (54.17%) respondents provide drainage channel in the shed and about 45.83 percent had no drainage facilities in the buffalo houses. Considerable proportions of respondents (63.33%) fed their buffaloes in separate manger, while 36.67 per cent buffalo owners have no manger. This practice may lead to wastage of fodders. So far as architecture of manger is concerned more than half *i.e.* 56.67 per cent buffalo owners in the surveyed area provide separate manger and 43.33 per cent were found to provide manger channel to their buffaloes for feeding. Majority of the buffalo keepers (60.83%) used earthen pot as manger, while 39.17 per cent respondents provided cemented manger to their animals. 64.17 per cent farmers made certain extra arrangements against extreme weather conditions particularly during severe cold in winter season to protect their buffaloes. They preferably used gunny/jute bags curtain to cover the houses. Almost all the farmers provided bedding materials to the buffaloes by using paddy straw or other waste dry

grasses (Table 2). Similarly results indicated by Mandal *et al.*, 2004; Rathore *et al.*, 2010; Kumar *et al.*, 2011; Singh *et al.*, 2010 and Kumar *et al.*, 2006.

Feeding Management Practices

Roughages Feeding Practices

Observations with regard to feeding practices of green and dry roughages reveal that out of total households surveyed, 80.00 percent of the animal owners provide green fodder to their animals throughout the year and rest *i.e.* 20.00 per cent provide it occasionally depending upon its availability. Similarly of the whole, 65.83 per cent households used own grown green fodders whereas 34.17 per cent used green fodder either procured from market or scraped grasses from range land, 56.67 per cent buffalo owners provide green fodder after proper chaffing, while considerable number of farmers *i.e.* 43.33 per cent offers green fodder as such without chaffing. This clearly indicates lack of knowledge among buffalo owners in the study area about importance of chaffing green fodder. Though the current trends recorded in the study are encouraging. Further, results reveal that majority (66.67%) of buffalo owners in the district provide green fodder to their animals keeping the bodyweight while remaining *i.e.* 33.33 per cent farmers do green feeding based on milk yield of the buffaloes. Regarding stall feeding of buffaloes with or without grazing, the observation reflects that major chunk of the buffalo keepers (85.83%) in the area under reference sent their buffaloes out for grazing. The results of present finding in this regard are fully corroborated by the findings earlier held by observations pertaining to dry roughages indicate that of the total 89.17 per cent of the households fed wheat straw to their buffaloes and the rest used wheat straw and/or paddy straw as sole roughage to their buffaloes.

Table.1 Socio-economic profiles of respondents

Attributes	Groups			
	Small	Medium	Large	Overall
Average age (year)	45.00	51.00	49.00	
Value in figure and in bracket was per cent value				
Education				
a. Up to primary	29 (43.28)	9 (25.72)	3 (16.67)	41 (34.17)
b. High School	18 (26.86)	13 (37.14)	4 (22.22)	35 (29.17)
c. Intermediate	12 (17.92)	7 (20.00)	6 (33.33)	25 (20.83)
d. Graduate& above	8 (11.94)	6 (17.14)	5 (27.78)	19 (15.83)
Caste				
a. Sc/ St	35 (52.24)	11 (31.43)	4 (22.22)	50 (41.67)
b. OBC	23 (34.33)	14 (40.00)	6 (33.33)	43 (35.83)
c. General	9(13.43)	10(28.57)	8(44.57)	27(22.50)
Head of the family				
a. Male	53 (79.10)	30 (85.71)	18	109 (84.17)
b. Female	14 (20.90)	5 (14.29)	(100.00) 0 (0.0)	19 (15.83)
Occupation				
a. Agril + Dairy	38 (56.72)	18 (51.43)	9 (50.00)	65 (54.17)
b. Service + Dairy	26 (38.80)	12 (34.28)	5 (27.78)	43 (35.83)
c. Dairy	3 (04.48)	5 (14.29)	4 (22.22)	12 (10.00)
Heard Strength				
a. Total Buffalo	1.75	3.6	5.5	
b. Milch	1.15	2.5	4.4	
c. Dry	0.6	0.9	1.1	
d. Heifers	0.4	0.3	0.8	
e. Calves	0.7	1.0	2.0	
f. Male	0.3	0.6	0.9	
g. Female	0.5	0.9	1.1	
h. Bull	-	0.6	1.0	

Table.2 Housing management practices

Practices	Group (% Households)			
	Small(67)	Medium (35)	Large (18)	Overall (120)
Providing Housing shelter				
Yes	40 (59.70)	27 (77.17)	13 (72.22)	80 (66.67)
No	27 (40.30)	8 (22.86)	5 (27.78)	40 (33.33)
Providing Housing				
(i) All time	15 (22.39)	6 (17.14)	4(22.22)	25(20.83)
(ii) Only at night	29 (43.28)	19 (54.29)	11(61.11)	59 (49.17)
(iii) Only in extreme weather	23(34.33)	10 (28.57)	3 (16.67)	36 (30.00)
Housing Animal				
(a) Near dwelling house	28(41.79)	9 (25.71)	-	9 (25.71)
(b) Inside dwelling house	24(35.82)	10(28.57)	6(33.33)	40(33.33)
(c) Separate from dwelling house	15(45.72)	16(45.72)	12(66.67)	43 (35.84)
Type of shed				
(i) Kachcha	52 (77.61)	9 (25.71)	2(11.11)	63 (52.50)
(ii) Pucca 15 (22.39)	15 (22.39)	26 (24.26)	16(88.89)	57 (47.50)
Type of roof				
(a) Pucca	11 (16.42)	18 (51.43)	15(83.33)	44 (36.67)
(b) Thatched	27 (40.30)	10 (28.57)	3(16.67)	40 (33.33)
(c) Asbestos	29 (43.28)	7 (20.00)	-	36 (30.00)
Type of floor				
(a) Kachcha	61 (91.04)	21 (60.00)	-	82 (68.33)
(b) Pucca	6 (8.96)	14 (40.00)	18(100.00)	38 (31.67)
Type of wall				
(a) Half wall	24 (35.82)	16 (45.71)	-	40 (33.33)
(b) Full wall	-	19 (54.29)	18(100.00)	37 (30.83)
(c) No wall	43 (64.18)	-	-	43 (35.84)
Ventilation of shed				
(a) Well ventilation	-	11 (31.43)	16 (88.89)	27 (22.50)
(b) Semi Ventilated	27 (40.30)	17 (48.57)	2 (11.11)	46 (38.33)
(c) No ventilated	40 (59.70)	7 (20.00)	-	47 (39.17)
Land of floor				
(a) Sloppy	-	15 (42.86)	14 (77.78)	29 (24.17)
(b) Leveled	44 (65.67)	13 (37.14)	4 (22.28)	61 (50.83)
(c) Uneven	23 (34.33)	7 (20.00)	-	30 (25.00)
Drainage channel in Shed				
(a) Yes	18 (26.87)	29 (82.86)	18 (100.0)	65 (54.17)
(b) No	49 (73.13)	6 (17.14)	-	55 (45.83)
Provide Separate Manger				
Yes	27 (40.30)	31 (88.57)	18 (100.00)	76 (63.33)
No	40 (59.70)	4 (11.43)	-	44 (36.67)
Architecture of manger				
(a) Separate Manger	22 (32.84)	29 (82.86)	17 (94.44)	68 (56.67)
(b) Manger channel	45 (67.16)	6 (17.14)	1 (5.56)	52 (43.33)
Types of manger				
(a) Earthen pot	62 (92.54)	11 (31.43)	-	73 (60.83)
(b) Cemented	5 (7.46)	24 (68.57)	18 (100.00)	47 (39.17)
Arrangement made against extreme weathers				
Yes	42 (62.69)	23 (65.71)	12 (66.67)	77 (64.17)
No	25 (37.31)	12 (34.26)	6 (33.33)	43 (35.83)
Providing bedding materials during winter				
Yes	67 (100.00)	35 (100.00)	18 (100.00)	120 (100.00)
No	-	-	-	-

Table.3 Practices of feeding green and dry roughages to the animals

Practices	Group (% of Households)			
	Small	Medium	Large	Overall
Providing green fodder				
Yes	51(76.11)	27(77.14)	18(100.00)	96(80.00)
No	16(23.89)	8(22.86)	-	24(20.00)
Green Fodder				
Grown	31(46.27)	30(85.74)	18(100.00)	79(65.83)
Not grown	36(53.73)	5(14.26)	-	41(34.17)
Chaffing Fodder				
Done	27(40.30)	26(74.29)	15(83.33)	68(56.67)
Not done	40(59.70)	9(25.71)	3(16.67)	52(53.33)
Criteria for feeding green fodder				
Milk yield	23(34.33)	12(34.29)	5(27.78)	40(33.33)
Body weight	44(65.67)	23(65.71)	13(72.22)	80(66.67)
Providing stall feeding				
With grazing	67(100.00)	24(68.57)	12(66.67)	103(85.83)
Without grazing	-	11(31.43)	6(33.33)	17(14.67)
Types of dry fodder fed to animals				
Wheat straw	59(88.06)	32(91.43)	16(88.89)	107(89.17)
Paddy Straw	-	-	-	-
Wheat + Paddy straw	8(11.94)	3(8.57)	2(11.11)	13(10.83)
Doing Roughage Feeding				
Once	-	-	-	-
Twice	60(89.55)	32(91.43)	15(83.33)	107(89.17)
Thrice	7(10.45)	3(8.57)	3(16.67)	13(10.83)
Knowledge about Urea feeding				
Yes	9(13.43)	7(20.00)	4(22.22)	20(16.67)
No	58(86.57)	28(80.00)	14(77.78)	100(83.33)
Feeding Urea treated				
Yes	-	-	-	-
No	67(100.00)	35(100.00)	18(100.00)	120(100.00)

Table.4 Practices of feeding concentrate to the animals

Practices	Group (% of Households)			
	Small	Medium	Large	Overall
Procurement of concentrates				
Home made	52(77.61)	31(88.57)	16(88.89)	99(82.50)
Purchase	15(22.39)	4(11.43)	2(11.11)	21(17.50)
Feeding common salt				
Yes	39(58.21)	28(80.00)	15(83.33)	82(68.33)
No	28(41.79)	7(20.00)	3(16.67)	38(31.67)
Feeding mineral mixture				
Yes	5(07.46)	3(8.57)	1(5.56)	9(7.50)
No	62(92.54)	32(91.43)	17(94.44)	111(92.50)
Feeding weighed quantity of concentrates				
Yes	-	-	-	-
No	58(86.57)	33(94.29)	16(88.89)	107(89.17)
	9(13.43)	2(5.71)	2(11.11)	13(10.83)
Soaking concentrates mixture				
Yes	63(94.03)	34(97.14)	18(100.00)	115(95.83)
No	4(5.97)	1(2.86)	-	5(4.17)
Doing concentrates feeding everyday				
Before milking	53(79.10)	27(77.14)	14(77.78)	94(78.33)
At milking	10(14.93)	6(17.14)	2(11.11)	18(15.00)
After milking	4(5.97)	2(5.72)	2(11.11)	8(6.67)
Mode of concentrates feeding				
With roughages	60(89.55)	29(82.86)	15(83.33)	104(86.67)
Without roughages	7(10.45)	6(17.14)	3(16.67)	16(13.33)
Supply drinking water daily				
Twice	12(17.91)	3(8.57)	3(16.67)	18(15.00)
Thrice	55(82.09)	32(91.43)	43(83.33)	102(85.00)

No farmers was found to use paddy straw as a sole source of roughage because of non-availability of it in the area, so far as frequency of roughages feeding is concerned about 89.17 percent of the households fed their buffaloes twice a day while remaining (10.83%) provided roughages thrice a day. Urea can be used to enrich the nutritive value of poor quality roughages but none of the farmers practiced feeding of urea treated straw to their animals. Moreover, only 16.67 percent of the households knew that urea can be fed as supplement to buffalo (Table 3). This phenomenon might be attributed to lack of proper training and knowledge of scientific feeding among the owners and the same need to persuade through extension programme. Similarly results indicated by Kumar *et al.*, 2011; Deoras *et al.*, Singh *et al.*, 2010; Garg *et al.*, 2005; Dhiman *et al.*, 1990 and Kumar *et al.*, 2006.

Concentrate Feeding Practices

Results pertaining to practices of concentrate feeding reveal that majority of the households (82.50%) provide homemade concentrate mixture primarily consist of bran and chuni as major ingredients. However, some segment of livestock owners (17.50%) witnessed to have purchased concentrate mixture from the market to feed their buffaloes. Interestingly more than two third of the households appeared to reflect that they knew about the importance of feeding common salts to dairy animals. Of the total, 68.33 percent households provide common salts in concentrate mixture to buffaloes. At the same time only 7.50 percent farmers had witnessed to offer mineral mixtures to their buffaloes (Table 4), this need to be corrected by providing scientific knowledge to them. These results are in conformity with the views earlier held by Singh *et al.*, 2010; Garg *et al.*, 2005; Dhiman *et al.*, 1990 and Kumar *et al.*, 2006 of the total, 89.17 percent households in

the study area fed weighed quantity of concentrate mixture and remaining 10.83 percent fed concentrate mixture to buffaloes on arbitrary basis using measuring pot. Before feeding, concentrate mixture was soaked in water for few hours by 95.83 percent households. Major proportion of the farmers (78.33%) fed concentrate to buffaloes daily before milking, 15.00 per cent a milking and only 6.67 percent offered it after milking. So far as mode of feeding is concerned, 86.67 percent farmers supplied concentrate along with roughages while 13.33 percent provide concentrate separately to their buffaloes. Majority of the farmers (85.00%) offer drinking water thrice a day to their buffaloes. Similar results were also recorded by.

In conclusion, results of current investigation clearly suggest that about one third buffalo owners did not provide proper housing shelter and only few were able to have separate house for their buffaloes. Ventilation and drainage facilities in housing shed were not found proper in the area. Farmers of the area studied appeared to witness of having lack of knowledge about benefits of chaffing fodders, criteria of feeding, enrichment of fodder nutritive value, importance of feeding common salts and mineral mixture to buffaloes. Based on above outstanding facts it could be concluded that housing and feeding management practices prevailed among buffalo keepers in the district were not in tune of standard recommendations and there is much scope to improve them among buffalo owners through motivation and exposor to extension services.

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