



Studies on Management Practices of Buffaloes in Marathwada Region

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ABSTRACT

The investigation was planned to study the management practices of buffaloes in the Marathwada region of Maharashtra State. A multistage random sampling technique was used to select the respondents. It could be revealed from the study that grazing + stall feeding seems to be more adoptive in the area of study. Feeding of mineral mixture & additional ration for pregnant animals was practiced at all in the study area. Before milking, washing of udder, milk utensils, cleaning of hands adopted by cent per cent farmers. The respondents were well aware about the vaccination for preventive diseases. Most of the farmers not getting the animal insurance. The large percentages of the respondents were adopting the various management practices to a great extent in study area.

Keywords: Management practices, buffalo, farmers.

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INTRODUCTION

Livestock rearing and crop husbandry are the important components of mixed farming which influence agricultural economy leading to sustainable agriculture and are complementary to each other. Buffalo is the principal dairy animal of India. Buffalo holds the greatest promise for food security and sustainable development in the 21st century as these animals form an integral part of the typical farming system in India. In India, buffalo has been the backbone of rural economy. Livestock sector plays a crucial role in shaping the rural economy of India. It is a major continuous income generating activity for the rural households [5].

Buffalo is the animal of poor countries with very high density of livestock and human population and with poor feed resources. The low productivity of buffalo is mainly due to lack of proper knowledge for balance feeding. Farmers from the rural area feed their buffaloes with roughages and concentrate but they do not have consciousness about quality and quantity of feed and also do not follow proper management practices which lead the dairy business uneconomical [1].

To meet nutrient requirement to exploit fullest genetic potential of buffaloes for high milk yield, it is necessary to provide adequate and balanced ration in terms of energy, protein, minerals and vitamins. Overfeeding and underfeeding of animals lead to nutritional and reproductive disorders. The health and degree of productivity of lactating animals are dependent on balanced and adequate quantities of all necessary nutrients to meet their requirement for a given physiological state. Accurate assessment of nutritional status of dairy animals is invaluable in modern livestock product [2].

The low productivity of buffalo is mainly due to lack of proper knowledge for balance feeding. Farmers from rural area feed their buffaloes with roughages and concentrates but they do not have knowledge about quality and quantity of feed and also do not follow proper management practices, which lead to dairy business uneconomical. The farmers who rear buffaloes are yet ignorant of scientific management practices.

Better management of buffaloes, holds the key for increasing buffalo milk production, which improves production of the buffalo even upto 20 per cent, as many studies have shown. Therefore, present investigation was planned to find out the lacuna in management practices and so also to evaluate different management practices followed by rural buffalo owners.

MATERIAL AND METHODS

The data obtained for the study was collected by multistage random sampling technique. Sixty four different villages from among 8 districts of Marathwada region were randomly selected for the present investigation. The selected villages from each district were visited. The manager/chairman of the milk society and village Sarpanch were contacted for getting information of villagers having dairy buffaloes and selling the milk. In all 960 farmers (hereafter called dairy farmers) were identified on the basis of their contribution in the form of daily sale of milk either to milk co-operative society or in the open market to the 'assured' daily customers.

Further, the randomly selected respondents were post-classified into the groups of their different categories of their farm size. Farm size means number of hectares of agricultural land possessed by the farmers. Farmers were classified according to size of land holding as marginal farmers (up to 1 ha.), small farmers (1 to 2 ha), large farmers (More than 2 ha) and landless labourers.

The data were collected through personally interviewing the respondents with the help of pretested structured interview schedule. The schedule covered all possible constraints that could hinder the adoption of recommended dairy farming practices by the respondents. Frequency and percentage of respondents in each category were calculated. The suitable statistical tests such as 't' and 'f' were applied. Where the comparison was redundant only frequency and percentages were estimated [6].

RESULTS AND DISCUSSION

Feeding of buffalo :

It was observed from Table 1 that, the maximum number of farmers in all categories including landless labourers were used green + stall feeding (67.29 per cent) and remaining categories of respondents used stall feeding (32.70 per cent). Supply of fodder was adequate in marginal (78.46 per cent), large (78.57 per cent) and landless labourers (76.76 per cent), whereas it was less in small farmers (74.72 per cent). Cultivated green fodder was noticed more in case of large farmers (79.85 per cent), marginal farmers (78.94 per cent) and small farmers (76.79 per cent). The farmers who purchased the fodder were more in case of landless labourer category (77.46 per cent) than small (23.21 per cent), marginal (21.05 per cent) and large farmers (20.15 per cent). Dairy buffaloes need large quantity of clean and fresh drinking water and therefore, the farmers has to locate proper source of watering such as well water, river water or water from lake as per the availability in that area. In this present survey 70.93 per cent of the 960 dairy farmers utilized water from the well for watering their animals followed by river water (15.00 per cent) and lake (14.06 per cent). The participation of marginal famers in utilizing well as one of the sources of drinking water was up to 72.73 per cent, river up to 14.35 per cent and only 12.92 per cent lake water. The corresponding figures for small, large and landless labourers were 74.40, 12.50 and 13.10 per cent; 69.23, 16.12 and 14.65 per cent and 63.38, 19.72 and 16.90 per cent respectively.

These present findings were supported by Shitole *et al.* [7] reported that grazing in combination with stall feeding seems to be more adaptive in the study area of Parbhani district. In their study, 58.00 per cent of dairy farmers cultivated green fodders on their farms but 24 per cent of dairy farmers had to purchase the greens from the market. Kishor *et al.* [3], in a study of buffalo management practices in Khammam districts of Andra Pradesh, reported that about 85.85 per cent farmers fed green and dry in combination. Most of the farmers raised fodder from their own fields.

Feeds and Fodders :

It is observed from Table 1 that, the feeding of green fodder + dry fodder by marginal, small, large and landless labour to the extent of 39.71, 41.67, 39.56 and 38.73 per cent respectively. It was notice that landless labourer did not fed extent amount of green + dry + concentrate + mineral mixture to their animals. Green + dry + concentrates was given as 60.29, 58.33, 60.44 and 61.26 per cent by marginal, small, large and landless labourer, respectively. Storage of fodder practiced by 83.73, 80.35, 80.95 and 85.21 per cent by marginal, small, large and landless labourers, respectively. . Only 18.23 never felt for storage of the dry roughages. Regarding method of feeding of concentrates to animal, it was evident from Table 1 that, the majority of respondents fed prepared concentrates (*i.e.* sprinkling water over the concentrate), 76.67 per cent of farmers neglected to prepare the concentrate before feeding. In case of individual feeding of the concentrates was followed by 85.10 per cent of the farmers. Whether, on the issue of providing additional concentrates to the pregnant buffalo, only 16.98 per cent farmers were aware of this practice and therefore followed. It is to notice that, all the categories of farmers were supply the additional ration for pregnant animals.

These findings are in line with the previous findings of Kumar and Mishra [4] reported that the majority of the farmers (92.50 per cent) feed concentrates during last pregnancy. Mineral mixture feeding was not a common practices in that area. Feeding of common salt was practiced by more than 95 per cent of dairy

farmers. About 95 per cent of the respondents soaked concentrate mixture before feeding while only 5 per cent of the respondents soaked and boiled mixture before feeding.

Housing pattern :

It is observed from Table 1 that, the open housing pattern were adopted by marginal, small, large and landless labourers as 39.71, 56.84, 37.36 and 77.47 per cent, respectively. Whereas closed housing pattern were used by marginal, small, large and landless labourers as 60.28, 43.15, 62.63 and 22.53 per cent, respectively. The kaccha housing was adopted by all categories of respondents. Also separate housing was adopted by all categories of respondents including landless labour. The flooring of house of was kaccha for all categories of the farmers. In almost all categories of respondents the houses are well ventilated. Regarding the provision of drainage system to the dairy house 46.04 per cent of dairy owners neglected to provide proper drainage to the dairy house but 53.96 per cent of dairy farmers made the provision provided the drainage. These findings are in line with the previous findings of Manohar *et al.* [5] reported that large number of dairy farmers (59.37%) kept their animal dwelling house, none of the respondents provide *pucca* paved floor.

Health and sanitation :

It is observed from area of study, that cleaning of milking utensils was done by all categories of farmers and landless labourers. Regarding cleaning of shed which was practiced by 80.86, 81.84, 77.28 and 89.43 per cent of marginal, small, large and landless labourers, respectively. Whereas, it was not practiced by 19.13, 18.15, 22.71 and 10.56 per cent by marginal, small, large and landless labourer, respectively. Cent per cent respondents clean their hand before milking. Also all farmers and landless labourers were practicing washing of udder before milking. The vaccination schedule followed by 76.56 per cent of respondents but comparatively most of the dairy farmers lack in testing their animal for mastitis (86.35 per cent), not getting the animal insurance (98.22 per cent) and not performing the techniques of A.I. for their animals (83.22 per cent). These findings are similar with Bainwad *et al.* [1] reported that the sanitary condition in majority of the buffalo houses was clean (93.00%).

Washing of Buffalo :

It was revealed from Table 1 that, the practice of washing buffaloes was followed by all the categories of respondents. Majority of respondents wash their animals daily (50.73 per cent), weekly (29.47 per cent) and few wash at fortnightly (13.22 per cent) and monthly (6.56 per cent) interval. Daily practise of washing was scrupulously followed by landless labourer (69.71 per cent). However, there was no proper regularity in performing this task whether it is daily, weekly, fortnightly and monthly. Kishor *et al.* [4] reported that 49.16 per cent of farmers washed their animals by splashing water manually. Washing of the animal and of their udder before milking were practised by 15.68 and 98.40% farmers respectively.

CONCLUSION

It could be concluded from the study that the group feeding seems to be more adoptive in the study area. The type of roughages fed includes both green and dry in all the zones. Grazing was the major practice of feeding buffaloes. Concentrates are fed as dry as well as in the form of water-soaked form. Feeding of mineral mixture was not found in majority of cases. Additional ration for pregnant animals was given in less extent by all categories of farmers including landless labourers. Condition of the stall in majority of cases was clean and flooring was *pucca* 60 per cent cases. Open and *pucca* housing pattern was followed in all categories of farmers than closed housing. 100 per cent farmers adopt health and sanitation measures as cleaning of milking utensils, cleaning of hands, washing of udder before milking and vaccination in the area of study. The survey study also revealed that, the use of artificial insemination by buffalo owner in less extent. In case of washing of animal, there was no proper regularity in performing such a task whether it is daily, weekly, fortnightly and monthly. However, to recuperate the buffalo production there is an enough scope to look up in practices like feeding mineral mixtures, supplementary ration during late pregnancy, housing and vaccination of calves.

Table 1. Feeding practices adopted in different categories of farmers (N = 960)

Sr. No.	Component	Marginal farmers	Small farmers	Large farmers	Landless labour	Total
A.	Buffalo Feeding					
1	Feeding method					
	i) Stall feeding	66 (31.57)	97 (28.87)	97 (35.53)	54 (38.03)	314 (32.70)
	ii) Grazing + Stall feeding	143 (68.42)	239 (71.13)	176 (64.47)	88 (61.97)	646 (67.29)
2	Supply of fodder					
	i) Adequate	164 (78.46)	264 (78.57)	204 (74.72)	109 (76.76)	741 (77.19)
	ii) Inadequate	45 (21.53)	72 (21.42)	69 (25.27)	33 (23.24)	219 (22.81)
3	Source of green roughages					
	i) Produced on own farm	165 (78.94)	258 (76.79)	218 (79.85)	32 (22.53)	673 (70.10)
	ii) Purchased	44 (21.05)	78 (23.21)	55 (20.15)	110 (77.46)	287 (29.90)
4	Source of drinking water					
	i) Well	152 (72.73)	250 (74.40)	189 (69.23)	90 (63.38)	681 (70.93)
	ii) River	30 (14.35)	42 (12.50)	44 (16.12)	28 (19.72)	144 (15.00)
	iii) Lake	27 (12.92)	44 (13.10)	40 (14.65)	24 (16.90)	135 (14.06)
B.	Feed and Fodders					
1	Green fodder + Dry fodder	83 (39.71)	140 (41.67)	108 (39.56)	55 (38.73)	386 (40.20)
2	Green + Dry + Concentrate	126 (60.29)	196 (58.33)	165 (60.44)	87 (61.26)	574 (59.79)
3	Green + Dry + Concentrate + Mineral mixture	38 (18.18)	16 (4.76)	59 (21.61)	01 (0.70)	114 (11.88)
4	Storage of fodder	175 (83.73)	270 (80.35)	221 (80.95)	121 (85.21)	787 (81.98)
	No storage of fodder	36 (17.22)	66 (19.64)	52 (19.05)	21 (14.79)	175 (18.23)
5	Method of providing concentrate feed					
	i) Wet	53 (25.36)	67 (19.94)	63 (23.08)	43 (30.28)	226 (23.54)
	ii) Dry	156 (74.64)	269 (80.05)	210 (76.92)	101 (71.13)	736 (76.67)
6	Individual feeding of concentrates	179 (85.65)	283 (84.23)	232 (84.98)	123 (86.61)	817 (85.10)
7	Additional ration given for pregnant animal	36 (17.22)	57 (16.96)	48 (17.58)	22 (15.49)	163 (16.98)
C.	Housing Pattern					
1	Type of house					
	i) Open	83 (39.71)	191 (56.84)	102 (37.36)	110 (77.47)	486 (50.63)
	ii) Closed	126 (60.28)	145 (43.15)	171 (62.63)	32 (22.53)	474 (49.37)
2	Status of house					
	i) Kaccha	74 (35.40)	155 (46.13)	88 (32.23)	97 (68.30)	414 (43.14)
	ii) Pucca	135 (64.59)	181 (53.86)	185 (67.76)	45 (31.69)	546 (56.86)

3	Location of house					
	i) Separate	145 (69.37)	203 (60.41)	148 (54.21)	87 (61.26)	583 (60.75)
	ii) Part of residence	64 (30.62)	133 (39.58)	125 (45.78)	55 (38.73)	377 (39.27)
4	Flooring					
	i) Kaccha	84 (40.19)	117 (34.82)	75 (27.47)	101 (71.12)	377 (39.27)
	ii) Pucca	125 (59.80)	219 (65.17)	198 (72.52)	41 (28.87)	583 (60.72)
5	Ventilation provided					
	i) Well ventilated	155 (74.16)	245 (72.91)	192 (70.32)	90 (63.38)	682 (71.04)
	ii) Not ventilated	54 (25.84)	91 (27.08)	81 (29.67)	52 (36.61)	278 (28.96)
6	Drainage system					
i)	Available	133 (63.63)	126 (37.5)	203 (74.35)	56 (39.43)	518 (53.96)
ii)	Not available	77 (36.84)	210 (62.5)	70 (25.64)	85 (59.85)	442 (46.04)
D.	Health and Sanitation					
1	Cleaning of milking utensils	209 (100)	336 (100)	273 (100)	142 (100)	960 (100)
2	Cleaning of sheds	169 (80.86)	275 (81.84)	211 (77.28)	127 (89.43)	782 (81.46)
	Cleaning of sheds not practices	40 (19.13)	61 (18.15)	62 (22.71)	15 (10.56)	178 (18.54)
3	Cleaning of hand before milking	209 (100)	336 (100)	273 (100)	142 (100)	960 (100)
4	Washing of udder before milking	209 (100)	336 (100)	273 (100)	142 (100)	960 (100)
5	Vaccination followed	156 (74.64)	224 (66.67)	253 (92.67)	102 (71.83)	735 (76.56)
	Vaccination not followed	53 (25.35)	112 (33.33)	20 (7.326)	40 (28.16)	225 (23.43)
6	Testing for mastitis	18 (8.61)	47 (13.98)	61 (22.34)	05 (3.52)	131 (13.64)
	Not tested for mastitis	191 (91.38)	289 (86.01)	212 (77.65)	137 (96.47)	829 (86.35)
7	Insurance of livestock	03 (1.43)	06 (1.78)	08 (2.93)	-	17 (1.77)
	No Insurance of livestock	206 (98.56)	330 (98.21)	265 (97.06)	142 (100)	943 (98.22)
8	A.I. technique followed					
	i) Followed	32 (15.31)	56 (16.67)	61 (22.34)	12 (8.45)	161 (16.77)
	ii) Not followed	177 (84.68)	280 (83.33)	212 (77.65)	130 (91.54)	799 (83.22)
E.	Washing of Buffalo					
1	Daily	82 (39.23)	175 (52.08)	131 (47.98)	99 (69.71)	487 (50.73)
2	Weekly	69	101	86	27	283
3	Fortnightly	45 (21.53)	39 (11.60)	31 (11.35)	12 (8.45)	127 (13.22)
4	Monthly	13 (6.22)	21 (6.25)	25 (9.15)	04 (2.81)	63 (6.56)

(Figures in parentheses shows percentage of respective farmer)

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