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Housing management practices prevailed among livestock owners in Firozabad district of western UP

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Abstract

Livestock is one of the most important activities among the rural farmers. It provides sustainable income and reduces unemployment to a large number of the rural poor. The study on housing management practices of buffaloes was purposively conducted in Firozabad district of Uttar Pradesh since it has got predominant buffalo based dairy production system. Out of four two Tehsil viz., Jasarana and Shikohabad of the district were randomly selected for the study. A total of 120 buffalo farmers were selected for the study. An exploratory research design and multistage random sampling technique was applied for the study and data were collected using a structured interview schedule. The study revealed that majority of the farmers 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. The results indicate that only 60% of buffalo owners provide proper housing shelter to their buffaloes. 68.33% respondents possessed animal house with Kachcha floor with very poor ventilation facilities. Only 54.17% houses have slope for proper drainage of urine and faeces. 64.17 percent respondents made additional arrangement to protect buffaloes against extreme weather. In general results suggest that housing practices in the study area were not satisfactory and need to be corrected through motivation and providing extension services among the farmers. There was a considerable gap existing between recommended scientific management practices and the existing management practices. Younger generation farmers have to take interest in dairy activity, for which suitable extension strategies should be developed. Adoption of suitable and scientific housing strategies in buffalo farming will substantially help in increase of production as well as income generation.

Keywords: Housing, management, Firozabad district, buffaloes

Introduction

Livestock sector plays a very crucial role in shaping the economy of rural peoples. It is continuous income generating source for rural house hold. The largest producer of milk is Uttar Pradesh which produces 17.57% of the total milk production in the country followed by Rajasthan which produces 10.58% of the total milk production Andhra Pradesh (includes Telangana) is the third largest milk producer state in the country which produces 9.45% of the total milk production 2009-10 to 2013-14(BAH& F STAT. 2015). In addition to the fact that India has more buffaloes than any other country of the world and it is homeland for the best milch breed in the world. As per 19th Livestock census, 2012 (GOI, 2013) India's livestock sector is one of the largest in the world with a holding of 11.6% of world livestock population which consists 57.83% (108.7 Million) of world buffalo population. In India, contribution of buffalo in total livestock population is 21.23% which increased at the rate of 3.19% during the last inter-censal period. India continues to be the largest producer of milk in world. Several measures have been initiated by the Government to increase the productivity of livestock, which has resulted in increasing the milk production significantly from the level of 102.6 million tonnes at the end of the Tenth Plan (2006-07) to 127.9 million tonnes at the end of the Eleventh Plan (2011-12). Milk production during 2014-15 and 2015-16 is 146.3 million tonnes and 155.5 million tonnes respectively showing an annual growth of 6.27%. The per capita availability of milk is around 337 grams per day in 2015-16. The production of milk and corresponding growth rate (%) per year from 1985-86 to 2015-16, nearly 36% of the milk production is contributed by Indigenous Buffaloes whereas non-descript buffaloes contribute 13% milk production. Buffalo contributes 23 % of total meat production in India (DAHD&F). Buffalo has inherent ability to produce milk with high milk fat content ranging from 6 to 8.5 per cent. Because of its higher milk fat contents, buffalo milk is preferred over cow milk and it

fetches better price in the market (Khan *et al.*, 2010) ^[8]. Buffalo milk is that it has been reported to contain lower contents of total and free cholesterol than cow milk. Besides, it is rich in vitamin A, E, C & B complex, fat, total solids, casein, albumin, ca, and mg. These positive factors in favour of buffalo milk made dairy industry in India revolving round the buffalo and thus India emerged as one of the major player in the export of milk and milk products to the tune of Rs.285 million. The country had 38.193 million buffaloes in milk. Perusal of milch animal population in the state vis a vis nation implied The Murrah, Bhadawari, Jaffarabadi, Surti, Mehsana, Nagpuri and Nili Ravi are the important breeds. Improved breeds like Surti and Murrah breeds dominate among the introduced breeds whereas, Pandarapuri and Jafrabadi are rarely found. Although the economic contribution of livestock seems to be quite substantial in the agricultural economy as well as in the national economy, the farmers who raise buffaloes are yet ignorant of scientific management practices. Genetic potentiality of the livestock and its production depends mostly on the managerial practices (Gupta *et al.*, 2008) ^[7].

Materials and Methods

The study was conducted in Firozabad district of Uttar Pradesh using multistage random sampling technique for selecting the respondents. The survey study was conducted in two tahsil (Jasrana and Shikohabad), further these two tahsil were divided into blocks which they constituted two blocks one from each tahsil *viz.*, Jasrana and Hathwant were taken. Than four villages from each blocks which in total eight villages were selected finally fifteen farmers having varying livestock holding 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 informations on various aspects of prevailing housing management practices on buffaloes in the district. Data was collected through informal and friendly visits to the farmers' homes and farms in the early hours of the day. The data collected were tabulated and analyzed as per standard procedures (Snedecor and Cochran 1980) ^[19].

Results and Discussion

The current investigation was undertaken to document the housing management practices prevailed amongst livestock owner of Firozabad district of western Uttar Pradesh. The investigation was carried out involving 120 households keeping buffaloes in varying numbers. These households were distribution into their categories *viz.* small (< 2 buffaloes), medium (2-5 buffaloes) and large farmers having more than 5 buffaloes. The data regarding the type of house, location of shed, type of roof, floor, manger and protection from inclement weather were given in Table 2.

Housing Management Practices for Buffaloes

Type of House

Observations with regard to housing management practices adopted by various categories of buffalo owners in Firozabad district of western Uttar Pradesh are presented in Table-2 clearly reveal that most of the farmers (66.67%) provide housing shelter to their buffaloes while 33.33% farmers kept their animals without shelter which is a poor indices of housing management. Regarding time spent by the animals in housing shelter the observation elucidates that only 20.83% buffalo owners kept their buffaloes all time in housing which

followed by 49.17% farmers who provide housing only at night while 30.00% kept their buffaloes in housing shelter only in extreme weather conditions. The results are in agreement with the findings of Sastri and Georgie, (1988) ^[16] who concluded that loose house was a system of choice by farmers for housing the animals to exhibit better performance.

Location of Shed

Majority of the respondents 35.84% kept animals separately from their own dwelling house and 33.33% respondents kept animals at the field of farmer. It is a good practice to maintain better hygiene of their dwelling. Dissimilar findings were reported by Kushwaha *et al.* (2007) ^[12], Rathore *et al.* (2010) ^[15] and Sabapara *et al.*, (2010) ^[17]. It might be due to the fact that for better management of the dairy animals' farmers preferred to have animal houses in the close vicinity of their houses. Only 25.71 per cent farmers kept their animals at one part of their dwelling or in animal shed near dwelling house.

Providing Housing

Information furnished in Table 2 revealed that only 20.83 per cent buffalo owners kept their buffaloes all time in housing 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. Agrawal and Sharma (1986) ^[1] studied dairy management practices of bovine in key village and non-key village areas around Karnal observed that about 46% of the stalls in stratum - 1 and 40% in stratum - 2 had separate stalls for their animals and the rest accommodated their animals in their own residential premises.

Type of floor

Type of floor is very important components of housing from animal as well as human health point of view and for achieving clean milk production. So far as provision of slope in dairy shed is concerned only 24.17 percent households provided slopy floor towards back in dairy shed, half of the respondents *i.e.* 50.83 percent provided leveled floor with no slope, while 25.00 percent 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 conducted by Garg *et al.* (2005) ^[6] and Kumar *et al.* (2006) ^[10] and higher than Kumar and Mishra (2011) ^[9]. Type of floor is very important components of housing from animal as well as human health point of view and for achieving clean milk production. Majority of the buffalo owners (68.33) have housing shelter with Kachcha floor and only nearly one third farmers *i.e.* 31.67% were found to possessed pucca cemented floor for their dairy animals. Dhiman (1990) ^[5] studied the dairy cattle and buffalo management practices in the adopted and non-adopted villages of Hissar District (Haryana) and found that about 64% farmers had pucca house and provide bedding during summer and winter. Mud houses and sheet houses were used by 27.5% and 8.75% respectively. Sastri and Georgie, (1988) ^[16], they proved that *pucca* floor found to be better than earthen floor for growing animals to keep them free from worm problems and hygienic point of view. This might be due to unawareness of farmers about these problems and mainly they gave weight age to earthen floor, as it remained cheap and comfortable to animals.

Types of Roof

The observations regarding type of shed, roof and floor vividly indicate that more than half (52.50 %) of the farmers surveyed possessed Kaccha shed and 47.50 percent farmers had pucca brick cemented shed. 36.67 percent farmers had shed with pucca roof, 33.33 percent thatched roof and 30.00% buffalo owners had shed with asbestos sheet. It might be due to easy availability of material locally and influenced by traditional practices of using roof materials

Type of Manger

Considerable proportions of the respondents (63.33%) surveyed in the study fed their buffaloes in separate manger, while 36.67 percent buffalo owners have no manger. This practice may lead to wastage of fodders. So far as architecture of manager is concerned more than half i.e. 56.67 percent buffalo owners in the surveyed area provide separate manger and 43.33percent 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 percent respondents provided cemented manger to their animals.

Drainage of Urine

The farmers (54.00 %) had provision of *pucca* drainage of urine, while remaining respondents (46.00%) had no drainage and urine soaked in earthen floor of animal shed. This resulted in dampness and unsanitary conditions due to lack of drainage and absorption of urine. The results were in agreement with the findings of Bhatia *et al.* (1988) [13]. Some farmers practiced to change soil bedding or frequently changing the position of animals.

Ventilation of shed

The trend of observation shows poor knowledge levels of buffalo owners in the surveyed area towards importance of ventilation facilities in the dairy houses only 22.50 percent respondents provide well ventilation in dairy houses, 38.33percent kept their buffaloes in semi-ventilated houses and 39.17 percent provided no ventilation in the house.

Protection against Inclement Weather

The Table 2 revealed that 64.17 per cent protect the animals from severe cold in winter (December – February). The practices used for protection from cold vary according to housing system while 35.83 per cent had no Arrangement made against extreme weathers. The results are in agreement with the findings of Verma and Sastri, (1994) [20] who found that farmers predominantly maintain their animals under shed and in open depending upon the seasons and diurnal variations of the climate.

Profile of Farmers and Herd Size

The practices have been studied from the angle of bovine keepers as the beneficiaries of the project. To know about the socio-economic condition of the bovine keepers, their age, educational status, and main occupation were recorded. The herd size in different classes of farmers varies significantly, therefore various practices of animal husbandry practiced by the farmers depend upon the herd size. Similarly the small farmers maintaining sizeable number of livestock were found to be associated with extension programme but marginal farmers and agricultural labourer keeping few, number of animal found to be less associated with extension programme of animal husbandry (Nataraju *et al.*1986) [13]. Kunzru *et al.*

(1989) [11] observed that marginal, small and medium-large categories of livestock owners had significantly higher livestock holding and availability of critical inputs than the landless that significantly had lower economic status, lesser income livestock enterprises and lower family education status

Educational status

The particulars of farmers engaged in bovine keeping according to their educational status are shown in table 1. The standard of education molds the farmers's response to improve technology and market performance since enlightened farmers have higher motivation to sell milk to diversify farm business and to earn more. This is especially true of dairy farming which warrants a better quality of management input than the conventional crop farming. The distribution of education as upto primary, High School, Intermediate, Graduate & above 34.17, 29.17, 20.83 and 15.83 per cent, respectively. There was not a single post graduate farmer in the sample households. Sheoran and Kumar (1988) [18] observed that education of the farmer has a positive and significant co-relation with adoption of improved feeding practices but they indicated that practices like breeding and health care, management and overall adoption rate of practices was not influenced by the education of the farmer

Main occupation

The data pertaining to main occupation of sample households of the study area is presented in table 1. A perusal of the data revealed that on an average 54.17 per cent of households were mainly dependent on Agril + Dairy in the study area and 35.83 per cent of households were mainly dependent on Service + Dairy. Among remaining farmers 10.00 per cent were engaged in the dairying.

Table 1: Particulars of the Respondents

Background Variables	Number of Respondents	Percentage
Overall	120	100
Tehsil		
a. Jasrana	60	50
b. Hathwant	60	50
Education		
a. up to primary	41	34.17
b. High School	35	29.17
c. Intermediate	25	20.83
d. Graduate & above	19	15.83
Main source of income in mixed farming		
a. Agril + Dairy	65	54.17
b. Service + Dairy	43	35.83
c. Dairy	12	10.00
Herd Size		
a. < 2 adult buffaloes	67	55.83
b. > 2 and < 5 adult buffaloes	35	29.16
c. > 5 adult buffaloes	18	15.0
Head of the family		
a. Male	109	84.17
b. Female	19	15.83
Caste		
a. SC / St	50	41.67
b. OBC	43	35.83
c. General	27	22.50

Herd strength

The profiles of buffaloes kept by the various categories of Farmers presented in table 2. The majority of farmers 55.83 per cent were maintaining (< 2 adult buffaloes) and only 15 per cent were having (> 5 adult buffaloes). Fifty six per cent small and 29 per cent medium farmers were having (> 2 and < 5 adult buffaloes) in the sample households.

Table 2: Distribution of the Dairy Farmers According to the Housing Practices

Housing management practices	Number of respondents	Percent
Housing of buffaloes		
a. Yes	80	66.67
b. No	40	33.33
Providing Housing		
a. All time	25	20.83
b. Only at night	59	49.17
c. Only in extreme weather	36	30.00
Housing Animal		
a. Near dwelling house	9	25.71
b. Inside dwelling house	40	33.33
c. Separate from dwelling house	43	35.84
Types of floor		
a. Pucca	82	68.33
b. Earthen	38	31.67
Land of floor		
a. Sloppy	29	24.17
b. Leveled	61	50.83
c. Uneven	30	25.00
Types of roof		
a. Asbestos sheet	44	36.67
b. Pucca roof	40	33.33
c. Thatched roof	36	30.00
Ventilation of shed		
a. Well ventilation	27	22.50
b. Semi Ventilated	46	38.33
c. No ventilated	47	39.17
Architecture of manger		
a. Separate Manger	68	56.67
b. Manger channel	52	43.33
Manger facility		
a. Kucha	73	60.83
b. Pucca	47	39.17
Drainage of urine		
a. Yes	65	54.17
b. No	55	45.83
Arrangement made against extreme weathers		
a. Yes	77	64.17
b. No	43	35.83
How to protect animal from cold		
a. Providing bedding material	120	100.00
b. Providing heat source	0.00	0.00

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. 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 exposure to extension services.

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