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Research Article

ADOPTION OF SCIENTIFIC MILKING, CALF REARING AND HOUSING MANAGEMENT PRACTICES BY THE BUFFALO DAIRY FARMERS OF TIKAMGARH DISTRICT OF BUNDELKHAND REGION

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Abstract- The study was carried out in Tikamgarh district of Madhya Pradesh to find out the adoption level of scientific management practices of dairy animals. A random sample of 240 buffalo owners were selected from six blocks of the district and adoption percentage of scientific milking, calf rearing and housing management practices were studied. It was found that washing of milking pans and hands before milking (86.75%), regularity in making hours (79.00%) and milking at clean and separate place (78.00%) were more adopted by the respondents in milking management practices. The overall adoption of milking management practices was 56.09 percent. Regarding adoption of scientific calf rearing practices, it was observed that proper cleaning of mucous from mouth and nostrils (71.63%), colostrums feeding to newly born calves within one to two hours after birth (65.88%) and cutting and disinfection of naval cord (56.25%) were more adopted by the buffalo owners. The overall adoption of calf rearing management practices was 38.95 percent. In adoption of housing management practices, it was revealed that adequate floor space in the buffalo shed (80.63%), proper orientation of buffalo shed (51.00%) and pucca manger with optimum dimension (43.75%) were moderately adopted by the buffalo owners. The overall adoption of housing management practices was 47.14 percent. The study showed that adoption level of milking management practices was more satisfactory in comparison to calf rearing and housing management practices.

Keywords- Adoption, Calf rearing, Housing, Milking, Scientific management practices.

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Introduction

India has largest buffalo population, huge buffalo germ plasm diversity (13 recognized plus 14 distinct population groups) and the world's famous buffalo breed – Murrah.

Buffaloes and Cattle are the main resources of milk production in our country. Buffaloes forms the backbone of India's dairy industry. The buffalo is a multipurpose animal, which provides fat rich milk, traction power and meat. Being less than one third of the total bovine population in India, contributes more than half (51%) of the total milk production in our country.

The country has 108.70 million of the buffalo's population whereas Madhya Pradesh state has8.19millions buffaloes. Similarly, the Tikamgarh district has 0.23 million buffaloes. According to milk production report 2014published by Directorate of Animal Husbandry, Government of Madhya Pradesh the increase in milk productivity of buffaloes at national level was 11.33 percent. However, the productivity of buffaloes in Madhya Pradesh was 14.69 percent.

There is huge gap between scientific management practices and farmers practices. Fulfilling this gap, we can increase the milk production of the district and the state and simultaneously increase the profit of the farmers.

The level and speed of adoption of dairy innovation by farming community is far from the satisfactory. The slow adoption of recommended scientific dairy practices is likely due to various factors. Although serious efforts to transfer the scientific dairy husbandry practices to the farmers have been made yet various studies indicate that farmers have adopted only 30 percent of the scientific dairy practices that too by progressive dairy owners.

Adoption of scientific buffalo husbandry practices is one of the important aspects, which influence production and productivity of the buffaloes. Various research works has been done in different part of the country on various aspects of scientific buffalo husbandry practices. Work related to adoption of scientific management practices is still limited. Therefore, it is very important to find out the adoption level of scientific milking, calf rearing and housing management practices in the study area, which differs from region to region and district to district.

Materials and Methods

The present study was carried out in Tikamgarh district of Madhya Pradesh. Six blocks of Tikamgarh district were selected i.e. Tikamgarh, Niwari, Prithvipur, Palera, Baldeogarh, Jatara. Four villages from each block and 10 buffalo keepers from each village were selected randomly. Thus, the entire sample consisted of 240 respondents from selected twenty-four villages in six blocks of the district. The data were collected by personal interview techniques through an interview schedule. In the present study for the selection of scientific buffalo management practices, a list of various scientific practices was listed and divided into milking, calf rearing and housing management practices. The most important six scientific practices in each aspect were selected on the basis of highest score obtained in order of merit.According to selection of scientific practices, an interview schedule was developed. The respondents were asked to give opinion about adoption on three points continuum scale i.e. every time, some times and never adopted the practices. These three points were scored as 2, 1 and 0, respectively. Thus, the

adoption score of each scientific practice varied within the range of 0 to 2 and in each aspect ranges from 0 to 12. The recorded responses were counted and converted into mean score and percentage of each practices.

Results and Discussion

Adoption of scientific buffalo management practices in the aspects of milking, calf rearing and housing management practices were determined. Total adoption score, mean score and adoption of each item were calculated. The ranks were also assigned to each item within the scientific management aspects. The results have been tabulated and presented under the following sub-sections.

Adoption of Milking Management Practices

The data presented in [Table-1] depicted that the practice of washing of milking pails and hands before milking obtained the highest mean score (1.75) and adoption percentage was 87.50. Thus, it was ranked first. The second rank was obtained by milking of buffalo with gently and quickly with the mean score of 1.67. Similarly, regularity in milking hours (1.50), milking at clean place (1.04) and keeping the milk production record (0.54) occupied the ranks of III, IV and V respectively. Adoption of full hand milking method (0.19) was ranked VI, which was the last rank. The overall adoption of scientific milking management practices by the respondents was 55.73 percent with the mean score of 1.12.

It was concluded that the practice of washing of milking pails and hands before milking, milking of buffalo with gently, quickly and regularity in milking hours were adopted more than 75.00 percent respondents but the practice full hand milking was least adopted by the farmers which may be the cause of mastitis in the study area. The overall adoptions of milking management practices observation were similar as reported by [2,3]. However, these findings are in contrary to the observations of [1,5,6] who reported more adoption of milking management practices in their study area.

Table-1 *Adoption of milking management practices (n = 240)*

S. No.	Milking Practices	Always 2	Sometimes 1	Never 0	Total adoption score	Mean score	Percentage (%)	Rank Order
1.	Adoption of full hand milking method	10	25	205	45	0.19	9.38	VI
2.	Milking at place	140	70	30	250	1.04	52.08	IV
3.	Regularity in milking hours	130	100	10	360	1.50	75.00	III
4.	Washing of milking pail and hands before milking	180	60	00	420	1.75	87.50	I
5.	Keeping the milk production record	30	70	140	130	0.54	27.08	V
6.	Milking of buffalo withgently and quickly	170	60	10	400	1.67	83.33	II
Overall adoption		**660**	**385**	**395**	**1605**	**1.11**	**55.73**	

Adoption of Calf Rearing Practices

The corresponding data indicated that out of six scientific management practices included in calf rearing, proper cleaning of mucous from mouth and nostrils at the time of calf birth got highest percentage of adoption (76.04%) and it was awarded rank first. The second and third positions were occupied by colostrum feeding to newly born calves within one or two hours of birth (1.46) and cutting and disinfection of naval cord (1.29) with the mean adoption percentage of 72.92 and 64.58, respectively. The adoption of castration of male calf was least adopted by the farmers having mean score (0.10).

The overall adoption of scientific calf rearing management practices by the buffalo owners was 46.25 percent with the mean score of 0.92.

It was concluded that the practice of proper cleaning of mucous from mouth and nostrils at the time of calf birth followed by colostrum feeding to newly born calves within one or two hours after birth, cutting and disinfection of naval cord were adopted by the respondents up to a satisfactory level, while the practices of deworming, trimming of hooves and castration of calves were least adopted. The present finding is in agreement with the observations of [4,8]. The observations recorded in the present study are encouraging than reported by [9].

Table-2 *Adoption of calf rearing management practices (n = 240)*

S. No.	Calf rearing Practices	Always 2	Sometimes 1	Never 0	Total adoption score	Mean score	Percentage (%)	Rank Order
1.	Colostrum feeding to newly born calves within one or two hours of birth	140	70	30	350	1.46	72.92	II
2.	Trimming of calf hooves	20	100	120	140	0.58	29.17	V
3.	Cutting and disinfection of naval cord	110	90	40	310	1.29	64.58	III
4.	Deworming of calves	31	80	129	142	0.59	29.58	IV
5.	Castration of male calf	0	25	215	25	0.10	5.21	VI
6.	Proper cleaning of mucous from mouth and nostrils	160	45	35	365	1.52	76.04	I
Overall adoption		**461**	**410**	**569**	**1332**	**0.92**	**46.25**	

Adoption of Housing Management Practices

It was observed from the data that the practice of housing of buffaloes according to climatic condition had obtained the highest adoption mean score (1.58), hence it was ranked first. The second rank was obtained by adequate floor space in the buffalo shed with the mean score of 1.42. *Pucca* manager (0.96) and loose housing with seasonal modification (0.63) were ranked third and fourth, respectively. The last rank was awarded to construction of *pucca* paved floor with mean score of (0.08). The overall adoption of scientific housing management practices was 43.75 percent with the mean score of 0.88.

Table-3 *Adoption of housing management practices (n = 240)*

S. No.	Housing management Practices	Always 2	Sometimes 1	Never 0	Total adoption score	Mean score	Percentage (%)	Rank Order
1.	Construction of Pucca paved floor	10	00	230	20	0.08	4.17	VI
2.	Loose housing with seasonal modification	15	120	105	150	0.63	31.25	IV
3.	Pucca manager	60	110	60	230	0.96	47.92	III
4.	Proper drainage and slope in floor	20	100	120	140	0.58	29.17	V
5.	Adequate floor space in the shed	130	80	30	340	1.42	70.83	II
6.	Housing of buffaloes according to climatic conditions	160	60	20	380	1.58	79.17	I
Overall adoption		**395**	**470**	**565**	**1260**	**0.88**	**43.75**	

It was concluded that the buffalo owners had good awareness about climatic conditions and its impact on milk production and health of the animals. Thus, the practices of housing of buffaloes according to climatic condition were more adopted by the respondents. The practice of proper drainage and *pucca* paved floor were less adopted than other practices. The same observations were reported by [7,10].

Conclusion

It can be concluded form the study that adoption of full hand milking method, proper drying off milch buffaloes, deworming of calves, castration of male calves, dehorning of female calves, loose housing with seasonal modification and *pucca* paved floor in buffalo shed were least adopted by the respondents. The finding of the study indicated that there is a scope for improving buffalo production by increasing awareness among buffalo owners regarding adoption of scientific management practices. A collaborative effort of KVK Scientists, Government Veterinary department, Co-operative Dairy and other departments are required to boost up the adoption level of scientific management practices in area.

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