Indian Res. J. Genet. & Biotech. 8(2) : 163-168 (2016)

Buffalo Calf Management and Health Care Practices in Morena District of Chambal Region of Madhya-Pradesh

Satyendra Pal Singh[1] and Rashmi Singh[2]

[1] RVSKVV-Krishi Vigyan Kendra, Morena-476001 (M. P.) India
[2]Deptt. of Bioscience & Biotechnology, Banasthali University, Banasthali, Tonk-304022 (Rajasthan) India

(Received : March, 2016 : Revised : April, 2016; Accepted : May, 2016)

Abstract

The present study was conducted to find out about the managemental and health care conditions of the buffalo calf in Morena district of Chambal region of Madhya-Pradesh. A survey of small, medium and large size dairy farms was conducted in ninety dairy farms owned by 30 animal keepers from each group were selected randomly for this study. The study revealed poor calf management, diarrheas, heavy infection of ecto and endo parasite, severe malnutrition were found in calves. The results showed that the mortality rate in buffalo calves was 85.5 percent. None of the farmers was cutting and disinfecting the navel cord, timely vaccination, timely deworming and fed colostrums after the expulsion of placenta. About 97.8 percent of dairy owners provided the buffalo calves with proper milk feeding before & after milking of buffalo. More than 60 percent farmers did not consult a veterinarian for the treatment of sick calves and only 21.1 percent of these dairy owners self treatment by indigenous medication. The study tended to show that owners of these dairy farms were not interested in rearing the male calves because they did not expect sizeable returns from their sale. The overall condition of buffalo calf rearing was found to be very pathetic and pointed to the need to educate the farmers and conduct extension work so the farmers get benefits from calves by rearing them in proper and scientific ways.

Keywords: Calf mortality; Endo-ecto parasite; Deworming; Management; Health care;

Introduction

Calf mortality; Endo-ecto parasite; Deworming; Management; Health care;

Calves are the livestock industry of the future. Calf management plays an important role in the development of the dairy sector of the country. The success of the dairy industry depends on appropriate calf management. Calf care is not only essential for sustenance of the dairy industry but is also essential in the wake of preserving and maintaining our good quality germ plasm. Important aspects in the calf rearing are the health management and proper nutrition to the calves (Tiwari *et al*., 2007). Many research studies have revealed the poor condition of calves in the village dairies wherein the farmers are not much aware about the scientific calf management practices. The buffalo is a highly social animal with strong instincts. Consequently, mother and young are closely bonded, and the buffalo calf usually becomes more stressed when separated from the dam than the calves of cattle (Mustafa *et al,* 2010).

A large number of calves die during the first year of their life, causing heavy drain on the economics of livestock production. Mortality of neonatal calves was attributed to conditions like diarrhea and pneumonia (Shimizu and Nagatoma, 1978). Calf mortality was associated with the type of housing, feeding,

Corresponding author's e-mail : singhsatendra57@gmail.com
Published by Indian Society of Genetics, Biotechnology Research and Development,
5, E Biotech Bhawan, Nikhil Estate, Mugalia Road, Shastripuram, Sikandra, Agra 282007
Online management by www.isgbrd.co.in

managemental practices, weather conditions, external and internal parasitic infestation and bacterial infections especially those causing septicemia and enteritis (Blood *et al*., 1994). Poor management practices leads to economic losses to the farmers in terms of higher calf mortality, poor growth rate, delayed maturity and poor productivity. Further, not feeding of colostrum to new born calves reduces the immunity of calves and makes them susceptible to the diseases (Khadda *et al.,* 2010) which increase the cost of rearing on treatment and farmers faces economical loss by calf mortality.

This study was conducted with a view to point out the areas where interventions are required to improve such health and production systems to meet the standards of global trade and also to have sustainable dairy development in the country.

Methodology

In the present study, the case study method was used. This is qualitative intensive and comprehensive methods as suggested by Fairchild (1995). The farms (shed) were divided according to the number of buffaloes kept by the farmer. They were divided into small farms having 1-5 milch buffaloes, medium farms having 6-10 milch buffaloes and large farms having 11 and more milch buffaloes. The owners of small farms kept buffaloes for their domestic use while both medium and large farm owners kept them for domestic and commercial purposes. For this study, 30 cases selected from each group through purposive sampling from the universe as described by Neumann (1997). All the farmers of the present study were rearing buffaloes for milking for domestic and commercial purposes in Morena District of Chambal region of Madhya-Pradesh. This study was carried out from January to December, 2015. An interview guide/ questionnaire were used as tool for data collection (Goode and Hatt, 1957). This covered different topics, including number of buffaloes, number of calves, disease prevalence, vaccination,de-worming, management, conditions of the calves. Data was analyzed statistically by applying percentage (Rothstein, 1985).

Result and Discussion

General management of milch buffaloes in dairy farms: The present study of managemental practices revealed poor and unscientific management of the dairy farming. The majority of the dairy farms had a very poor housing structure which was not suitable to the different seasons i.e. summer, winter and rainy season. Also overcrowding of animals was found on most of the farms due to lack of space. The roofs of the farms were made of hay and tin shed while the floor was muddy, and on most of the farms, was found to be broken and in need have repaired. Farmers cleaned the sheds once a day and no one used any disinfectant. The milch animals were provided a bath once a day in summer in a village pond or small irrigation canal. Farmers disposed of the dung and waste material nearby animal houses leading to unhygienic conditions.

Regarding feeding, farmers provided wheat and bajra (pearl millet) straw, seasonal green fodder and very low quantity of concentrates to milch animals regularly, but most of the poor and small farmers did not feed green fodder because of its heavy cost and non-availability. Salt and mineral mixtures were also not given regularly due to poor awareness about the importance of a balanced diet for proper animal health and optimum production. However, the commercial farms were very much aware about vaccination and timely treatment and provided very good health care to their milch animals. However, they did not provide timely treatment to the calves. In fact, the calf management in these farms was very poor, leading to high calf mortality.

Calf population in dairy farms: The importance of the calves in the sheds (farms) was revealed by the number of calves present. Results of the study revealed that calves were very few in numbers in these dairies. All dairies had milch buffaloes, but the number of buffalo calves was not in proper proportion to them (Table 1). The buffalo calves suffered from a number of diseases finally succumbing to death while the owner was not bothered, especially, by the death of male calf as he considered male calves as an economic burden to rear and also a loss in milk production, as a considerable amount of milk was used to feed the calf. Most of the farmers preferred to sell the calves, and

the problem of milk let down is solved by injecting oxytocin to the milch buffaloes indiscriminately violating all animal ethics. In rural areas, livestock is not rearing commercially but as a secondary part of the agriculture. The rural people reared the buffaloes mostly for milk purposes and to get immediate monetary benefits to fulfill their needs.

Major disease in buffalo calves: Because of the poor management conditions, 82.2% calves were found malnourished, and 84.4% & 77.8% calves were found suffering endo & ecto parasites. Endo parasites of buffalo calves were major problem of study area, most of the buffalo keepers not aware of endo-parasites management through proper calf deworming. Because a lack of scientific knowledge of calf deworming technology. This study also reported of buffalo calves was 83.3% suffering with diarrhea, navel ill was 45.5% and infectious disease was 35.5% as shown in Table 2. Similar findings have been reported by Tiwari et al (2007) and Mustafa *et al* (2010).

Mortality of calves: In this study the mortality rate was very high, 85.5% calves were died after nine months of birth (Table 3). The infectious abortion rate was reported high by large farmers, i.e., 40%, and less, i.e; 13.3%, by small framers. This was because large owner had more animals but improper management so animals fought with each other or slipped on the ground, and this led to abortion. Because of the poor management, no proper timely scheduled deworming and feeding conditions, buffalo keepers were reported calf died after six month of the birth 68.9%, after three month of birth 40% and 13.3% after one day of life. Similar observations were made by Tiwari *et al* (2007); Mustafa et al (2010) and Singh and Pachauri, 2012.

Management and health care conditions of calves: In this study most of the calves suffered with naval cord infection. As naval cord is a channel through which infectious agents can center into the blood or underlying tissues leading to certain serious diseases in new born calf, it is very essential that the livestock owners take proper care of the naval cord after the birth of calf. Cutting the cord with a hygienic blade and

Table 1: Buffalo calf population in dairy farms

Buffalo keepers	No. of milch buffalo	No of buffalo calves	Percent of calves as compared to milch buffalo
Small	30	9	30.0
Medium	30	8	26.7
Large	30	8	26.7
Total	90 (100.0)	25 (27.8)	27.8

Table 2: Occurrence of disease pattern in buffalo calves

Disease	Small (N=30)	Medium (N=30)	Large (N=30)	Total (N=90)
Endo-parasite infestation	24 (80.0)	25 (83.3)	27 (90.0)	76 (84.4)
Ecto-parasite infestation	19 (63.3)	26 (86.7)	25 (83.3)	70 (77.8)
Diarrhea	25 (83.3)	24 (80.0)	26 (86.7)	75 (83.3)
Navel ill	2 (6.7)	18 (60.0)	21 (70.0)	41 (45.5)
Pneumonia	2 (6.7)	5 (16.7)	7 (23.3)	14 (15.5)
Infectious disease	14 (46.7)	10 (33.3)	8 (26.7)	32 (35.5)
Mal nutrition	27 (90.0)	25 (83.3)	22 (73.3)	74 (82.2)

then dipping the cord in an antiseptic solution is essential (Sharma and Mishra, 1987). It has been found that the dairy owners do not feed the colostrum timely. They feed colostrum only after the release of placenta and many times the buffalo does not release placenta for more than 8 to 10 hours than the colostrum feeding is delayed leading to lowered immunity level in the calves. Table 4 reveals that cent percent dairy owners in all groups fed colostrum to their calves after the release of placenta. In fact it is the most important period when the calves should receive colostrum.

Table 4 reveals that one teat full milk is provided by only 2.2% of the dairy farmers and most of these farmers belong to the small dairy group (6.7%). Rest of the respondents (97.8%) reported that they are providing the milk to the calves before and after milking only.

In the dairy farms in all groups of the dairy owners reported that they do not deworm their (Table 4). Further those who practiced deworming did not practice it scientifically according to recommended schedule. Most of them dewormed the calves when the calf was off feed or they observed worms in the faeces. Deworming in calves is essential and regular schedule deworming cycle should be followed against parasitic infection. This practice should be started on or before two weeks of age, followed after 21 days and should be repeated 3 to 4 times in a year at regular interval. A major reason of calf mortality is the parasitic load in the calves due to which their health deteriorates and the calf often dies (Singh and Pachauri, 2012 and Sharma and Mishra, 1987).

Result as shown in Table 4, the study have revealed that majority of the dairy owners 61.1% do not call a veterinarian when the calves fall sick as they feel that it is uneconomical. The calves kept by the farmers were found without any scientific and veterinary coverage. Large farmers only 10% consulted veterinarian for advice or treatment. It was amazing to learn that 26.7% of small and 20% of medium farmers preferred self-medication and that only 12.2% of farmers called Para veterinary staff for treatment to their animals. This was because of the poor economic conditions of the farmers as they were unable to afford veterinarian's charges. Calves were found reared under very poor conditions. It was found that 94.4% calf sheds were not properly made and 74.4% had no proper bedding. In term of general condition, 36.7% of the calves of dairy owner were very weak and 100% were not vaccinated or dewormed regularly by the owners. In this study of these findings are found in agreement with the results of Jenny *et al.,* 1981; Pardhan and Panda, 1994; Khan and Khan, 1995; Singh and Singh, 2000; Tiwari *et al.,* 2007; Khan *et al.,* 2007 and Mustafa *et al.,* 2010.

Conclusion

The study on buffalo calf management and health care practices was conducted in the Morena district of Chambal region of Madhya-Pradesh. The study

Table 3: Mortality rate in buffalo calves

Reason of mortality	Small (N=30)	Medium (N=30)	Large (N=30)	Total (N=90)
Infectious Abortion	4 (13.3)	8 (26.7)	12 (40.0)	24 (26.7)
Dead fetus	1 (3.3)	1 (3.3)	2 (6.7)	4 (4.4)
Calf died after one day	5 (16.7)	3 (10.0)	4 (13.3)	12 (13.3)
Calf died after one month	1 (3.3)	1 (3.3)	2 (6.7)	4 (4.4)
Calf died after three month	10 (33.3)	12 (40.0)	14 (46.7)	36 (40.0)
Calf died after six month	18 (60.0)	20 (66.7)	24 (80.0)	62 (68.9)
Calf died after nine month	25 (83.3)	26 (86.7)	26 (86.7)	77 (85.5)

revealed very poor calf management, heavy infection of ecto & endo parasite, diarrheas, malnutrition was found in calves. Those results also showed that the mortality rate of buffalo calves was very high percentage in the dairy farms. In this study areas dairy owners not aware of cutting & disinfecting the navel cord, timely deworming, vaccination, colostrum feeding and proper milking of calves. The overall condition of buffalo calf rearing was found to be very pathetic and pointed to the immediately need to educate the dairy farmers and conduct extension work so the buffalo keepers get benefits from calves by rearing them in proper and scientific ways.

Table 4: Management and health care conditions of the buffalo calves

Conditions		Small (N=30)	Medium (N=30)	Large (N=30)	Total (N=90)
Cutting and disinfection of navel cord	Yes	-	-	-	-
	No	30 (100.0)	30 (100.0)	30 (100.0)	90 (100.0)
Timely colostrums feeding	Within 1-2 hours after birth	-	-	-	-
	After release of placenta	30 (100.0)	30 (100.0)	30 (100.0)	90 (100.0)
Proper milk feeding	Leave 1 teat full	2 (6.7)	-	-	2 (2.2)
	Before & after milking	28 (93.3)	30 (100.0)	30 (100.0)	88 (97.8)
Timely deworming	Yes	-	-	-	-
	No	30 (100.0)	30 (100.0)	30 (100.0)	90 (100.0)
Timely vaccination	Yes	-	-	-	-
	No	30 (100.0)	30 (100.0)	30 (100.0)	90 (100.0)
Timely treatment	Self treatment by indigenous medication	8 (26.7)	6 (20.0)	5 (16.7)	19 (21.1)
	Call veterinarian	-	2 (6.7)	3 (10.0)	5 (5.5)
	Call Para-vet. (local)	2 (6.7)	4 (13.3)	5 (16.7)	11 (12.2)
	Do not call doctor, as it is uneconomical	20 (66.7)	18 (60.0)	17 (56.7)	55 (61.1)
General condition	Good	8 (26.7)	7 (23.3)	6 (20.0)	21 (23.3)
	Average	14 (46.7)	12 (40.0)	10 (33.3)	36 (40.0)
	Very week	8 (26.7)	11 (36.7)	14 (46.7)	33 (36.7)
Separate shed/ space allotted	Yes	-	2 (6.7)	3 (10.0)	5 (5.5)
	No	30 (100.0)	28 (93.3)	27 (90.0)	85 (94.4)
Proper bedding provided	Yes	10 (33.3)	8 (26.7)	5 (16.7)	23 (25.5)
	No	20 (66.7)	22 (73.3)	25 (83.3)	67 (74.4)

Table 2: consumption of sattu whole year

Consumption of sattu whole year	Yes	No	Mean score	Rank
Tasty	245 (38.3)	385 (61.7)	1.38	II
Cheap	492 (76.9)	148 (23.1)	1.77	I
Health beneficial	208 (22.5)	432 (67.5)	1.33	III
Nutritious	189 (29.5)	451 (70.1)	1.30	IV

Table 3: Preference of sattu

Preference of Sattu	Yes		No		Mean Score	Rank
	F	%	F	%		
Autumn	362	56.6	278	43.4	1.57	IV
Spring	464	72.5	176	27.5	1.73	III
Summer	620	96.9	20	3.1	1.97	I
Winter	580	90.9	60	9.4	1.91	II

respondents were know about its nutrition content, so they take it in their diet in this study.

Table reveals that mean scores of respondents as per preference of sattu, 96.9% of respondents preferred sattu in summer season with mean score 1.97 and rank I whereas 90.6% of respondents were taking in winter season with mean score 1.91 and rank II , 72.5% of farm women have preferred sattu in spring season with rank III while 56.6 % of respondents preferred in autumn season with mean score 1.57 and rank IV.

Table depicts that distribution of farm women according to food frequency include sattu in diet, 40.4% were having food frequency once a day whereas 33.6 % of women took twice a day, while 12.3 % took once a week, while 5.7 % took sattu once a month in their diet in the study area.

The data pertaining that knowledge from various mass media of nutritive recepies of sattu and preserving its nutritive value using different cooking methods, 60.9% got knowledge from neighborhood/ friends, followed by 28.7% of women from KVK, only 10.3 % of respondents came to know about nutritive value of sattu through TV / Radio in various programmes.

Conclusion

The information presented in this study shows the potential nutritional importance of sattu and its role in improved nutrition and health. It is an affordable

Table 4: Distribution of respondent according | to food frequency

Food frequency	Frequency	percent
Once a day	310	48.4
Twice a day	215	33.6
Once a week	79	12.3
Once a month	36	5.7
Total	640	100.0

Table 5: Distribution of respondent according to knowledge from mass media

Knowledge from mass media	Frequency	percent
Neighbor/friend	390	60.9
KVK	184	28.7
TV/Radio	66	10.3
Total	640	100.0

References

1. Blood, D.C., O.M. Radostits, C.C. Gay, J.H. Arundel, B.O. Ikede and B.C. Mekenzie. (1994). *Veterinary Medicine*, **8**th ed. ELBS, London.

2. Fairchild, H.P. (1995). *A Dictionary of Sociology*. Littlefi eld Iowa, Adam and Co.

Goode, W.J. and P.K. Hatt. (1957). *Methods in Social Research*, McGraw Hill Book Co., New York.

3. Jenny, B.F., Cramling, G. E. and Glaze, T. M. (1981). Management factors associated with calf mortality in South Carolina dairy herds. *J. Dairy Sci.*, **64**: 2284-2289.

4. Khadda, B.S., Lata, K., Jadav, J.K., Kalash, P., Kumar, R. (2010). Study on calves management practices in tribal and non- tribal areas of Panchmahals district of Gujarat. *Journal of Progressive Agriculture*, **1**(1): 84-86.

5. Khan, A. and Khan, M. Z. (1995). Epidemiological aspects of neonatal calf mortality in the Nili-Ravi buffaloes. *Pak. Vet. J.,* **15**: 163-168.

6. Khan, Z.U., Khan, S., Ahmadand, N. and Raziq, A. (2007). Investigation of mortality incidence and managemental practices in buffalo calves at commercial dairy farms in Peshawar city. *J. Agri. Biol. Sci.,* **2**(3): 16-22.

7. Mustafa, M. Y., Shahid, M. and Mehmood, B. (2010). Management practices and health care of buffalo calves in Sheikhupura district, Pakistan. Buffalo *Bulletin*, **29**(3): 217-224.

8. Neumann, W.L. (1997). *Social Research Methods:Qualitative and Quantitative Approaches*, Allyss and Bacon, USA.

9. Pardhan, B. and Panda, G. M. (1994). Calving pattern and mortality trends in Murrah buffaloes calves in Orisa. *Indian J. Anim. Prod. Health*, **10**: 143-146.

10. Rothstein, A.L. (1985). *Research Design and Statistics for Physical Education*. Prentice Hall, Inc., Englewood Cliffs, NJ. USA.

11. Sharma M. C. and Mishra R. R. (1987). Livestock health and management. Khanna Publishers, New Delhi.

12. Shimizu, T. and Nagatoma, H. (1978). Current status of calf diseases in Japan. *Bull. Fac. Agri.*

Miyazaki Univ., **34**: 329-336.

13. Tiwari, R., Sharma, M. C. and Singh, B. P. (2007). Buffalo calf health care in commercial dairy farms: a field study in Uttar Pradesh (India). *Livestock Research for Rural Development*, **19**(3).

14. Singh, R. and Singh, N. (2000). Influence of socio-economic variables on adoption of buffalo calf rearing management practices in rural Haryana. *Indian Journal of Animal Science,* **720**(3): 325-326.

15. Singh, Satyendra Pal and Pachauri, S.P. (2012). Deworming and its clinical importance in calf health mamagement. *Intas Polivet,* **13**(I): 15-16.