STUDIES ON BUFFALO CALF MORTALITY IN JABALPUR DISTRICT OF MADHYA PRADESH

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ABSTRACT

The Jabalpur region of Madhya Pradesh comprises of six tehsils namely Patan, Kundam, Majholi, Sihora, Panagar and Shahpura which cover densely buffalo populated area. Patan, Kundam and Majholi Tehsils are one of them. The data on mortality of buffalo calves was collected by random survey methods from 60 farmers (10 farmers of each villages) of 06 villages of 03 Tehsils of Jabalpur District MP. The data was based on the interview schedule. The morality data were categorized based on the sex and age group during the last one year. The result of the present study indicated that overall buffalo calf mortality in and around Jabalpur district was 42.11%. Mortality was higher in male calf than the female calves due to the negligence towards male calf. Highest mortality was recorded in the age group of calves below three months. It was also found that significantly (P>0.05) higher mortality was observed in male calf compared to female calves (60.47% vs. 23.53%).

Keywords: buffalo calves, calf mortality, *Bubalus bubalis*, mortality, Madhya Pradesh

INTRODUCTION

In India, buffalo plays a very important role in the economy of small holders as well as landless people of rural India who owned more than 67% of dairy animals. Buffalo contributes 51% of the total milk production (132.4 million tonnes) in India, despite the fact that buffalo population is nearly half to that of cattle population (BAHFS, 2014).

Calves are the future of livestock industry. Calves play an important role in the development of the dairy sector, as the future of the dairy herd depends upon the successful raising of young calves. One emerging trend in the dairying scenario is the growing number of the commercial dairy farms in the urban and peri-urban areas of the metros and big cities. Large numbers of calves die causing heavy drain on the economics of livestock production. It is estimated that 20% neonatal calf mortality can reduce net profit by 38% (Radostits *et al*., 2000). Studies revealed the poor condition of calves in the villages wherein the farmers were not much aware about the scientific calf management practices. Tiwari *et al*. (2007) reported that in commercial dairy farms, the main cause of high buffalo mortality is the inadequate feeding and health facilities like colostrum feeding, improper milk feeding, navel cord disinfection and timely

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treatment of disease. Heavy buffalo calf mortality has been reported particularly during first few months of their postnatal life (Tiwari *et al*., 2007; Ahmad *et al*., 2009; Shivarudrappa *et al*., 2013). Keeping in view of the above facts the study was designed to evaluate the buffalo calves mortality in and around Jabalpur district of Madhya Pradesh, India.

MATERIALS AND METHODS

The survey was carried out to investigate buffalo calf mortality in and around Jabalpur. Six villages from three tehsil of Jabalpur district of Madhya Pradesh was selected for the survey. From each village 10 farmers were randomly surveyed about the buffalo calf mortality during the last one year based on the interview schedule. A total of 60 farmers were surveyed from six villages of three tehsil of Jabalpur namely Nandgram, Pola, Pitkuhi, Roriya, Kuarpur and Kantora of Jabalpur district. The morality data were categorized based on the sex and age group. All the farmers of the present study were rearing buffaloes for milking for domestic and commercial purposes in Jabalpur district. This survey was carried out from Oct-Nov to Apr-May 2015. An interview guide/ questionnaire were used as tool for data collection (Khan *et al*., 2007a). Data was analyzed statistically by applying percentage and Chi-square test (Snedecor and Cochran, 1994).

RESULTS

The survey was carried out to investigate buffalo calf mortality in and around Jabalpur. The data on mortality of buffalo calves were collected by random survey method from 60 farmers of

6 villages from three tehsil of Jabalpur namely Nandgram, Pola, Pitkuhi, Roriya, Kuarpur and Kantora of Jabalpur district. Highest buffalo calf mortality was observed in Pola village of Majholi where 25 buffaloes male calves and 24 female calves were born, 17 male calves and 9 female calves were died. Total calf mortality was 53.06% in Pola village of Majholi. Lowest buffalo calf mortality was observed in Kuarpur village of Patan where 31 buffaloes male calves and 33 female calves were born, 12 male calves and 8 female calves were died. Total buffalo calf mortality was 31.25% in Kuarpur village of Patan. The result of the present study indicated that overall buffalo calf mortality in and around Jabalpur district was 42.11% (Table 1).

It was also found that mortality in male calf was higher than the female calves (60.47% vs. 23.53%). Data analysis revealed significant (P<0.05) difference in mortality between male and female buffalo calves ($\lambda^2 = 19.86$). Among the various age groups, from birth to 3 months of age, 89 male caves and 28 female calves were died, the buffalo calf mortality was 81.25%, from 3 months to 6 months of age, 3 male calves and 3 female calves were died, buffalo calf mortality was 14.58% and above 6 months of age 12 male calves and 9 female calves were died, buffalo calf mortality was 4.17% observed. Highest mortality was recorded in the age group of calves below three months (Table 2).

DISCUSSION

Buffalo calf mortality is a great concern during last few decades. Martin and Wiggins (1973) estimated that 20% calf mortality resulted in reduction of 38% profit of a livestock farm.

Table 1. Mortality pattern of Murrah buffalo calves in and around Jabalpur.

Tehsil	Village	Calf born			Calf died			Calf died (%)		
		M	F	T	M	F	T	M	F	T
Majholi	Nandgram	34	36	70	21	6	27	61.76	16.67	38.57
	Pola	25	24	49	17	9	26	68.00	37.5	53.06
Kundam	Pitkuhi	35	33	68	24	5	29	68.57	15.15	42.65
	Roriya	25	23	48	14	8	22	56.00	34.78	45.83
Patan	Kuarpur	31	33	64	12	8	20	38.71	24.24	31.25
	Kantora	22	21	43	16	4	20	72.73	19.05	46.51
Total		172	170	342	104	40	144	60.47	23.53	42.11

M = Male, F = Female, T = Total

Table 2. Mortality of Murrah buffalo calves in relation to the different age groups.

Age	No. of calves died			Percent of total calf died		
	Male	Female	Total	Male	Female	Total
Birth to 3 months	89	28	117	85.58	70.00	81.25
3 to 6 months	12	9	21	11.54	22.50	14.58
6 months and above	3	3	6	2.88	7.50	4.17
Total	104	40	144	100.00	100.00	100.00

Furthermore, 25% average early calf mortality hardly provides any chance for regular replacement of low production animals. A minimum mortality rate of 5% is usually acceptable to dairy farm having standard managemental conditions. Raising the calves is a labour intensive and costly segment of livestock production. Therefore, commercial farmers especially in peri-urban areas give little importance to rearing of male calves. Increasing milk prices has developed a wrong concept among the farmers that rearing calves is not profitable. Therefore, farmers prefer to sell milk instead of feeding to the young calves. In the present study, overall buffalo calf mortality is observed as 42.11% in and around Jabalpur. When age-wise distribution of calf mortality was analysed, it was observed that maximum mortality (81.25%) occurred in birth to 3 months of age group, followed by 14.58% in 3 to 6 months age group and 4.17% in above 6 months age group. It was also found that significantly (P>0.05) higher mortality was observed in male calf compared to female calves (60.47% vs. 23.53%). Similar findings were reported by Khan et al. (2007b). They found maximum mortality (87.50%) in 3 months of age group, followed by 9.82% in 3 to 6 months age group and 2.67% in above 6 months age group. Ramakrishna (2007) reported that in semi intensive system improper management and feeding causes high calf mortality up to 51.8% in less than one month of age with 5% higher mortality in male calves. Buffalo male calves in commercial dairy farms have been reported to be

slaughtered within first 10 days of their life. Those surviving are mainly kept with dam for milk let down and allowed to suckle a very limited amount of milk, and weaned around one year of age (Khan *et al*., 2007b).

In contrast to the present findings, higher buffalo calf mortality was reported by Tiwari *et al*. (2007) and Ahmad *et al*. (2009). In commercial dairy farms, feeding and health care practices usually neglected and mortality goes up to 81.09% (Tiwari *et al*., 2007). The main cause of high mortality in commercial dairy is the inadequate feeding and health facilities like colostrum feeding, improper milk feeding, navel cord disinfection and timely treatment of disease (Tiwari *et al*., 2007). Another study reported an average mortality rate of 79.50% in peri-urban buffalo dairy farms (Ahmad *et al*., 2009). Shivarudrappa *et al*. (2013) found 73.41% calf mortality within 1 to 5 months of their age due to various reasons.

CONCLUSIONS

Survey on buffalo calf mortality in and around Jabalpur district of Madhya Pradesh revealed that maximum calf mortality occurred in below 3 months age group. Male buffalo calf mortality is higher than female buffalo calf due to the negligence towards male calf.

REFERENCES

Ahmad, S., M. Yaqoob, N. Hashmi, M.A. Zaman and M.S. Amjad. 2009. Farmer's attitude towards interventions regarding buffalo calf health care and management practices under field conditions. *Pak. Vet. J.*, **29**(3): 125-128.

BAHFS. 2014. Basic *Animal Husbandry and Fisheries Statistics*. Ministry of Agriculture, Government of India, India. 8p.

Khan, Z.U., S. Khan, N. Ahmad and A. Raziq. 2007a. Investigation of mortality incidence and managemental practices in buffalo calves at commercial dairy farms in Peshawar city. *Journal of Agricultural and Biological Science*, **2**(3): 16-22.

Martin, S.W. and Wiggin. 1973. Perinatal diseases. *American Journal of Veterinary Research*, **34**: 1027.

Quoted by Blood, D.C. 1994. *Veterinary Medicine*, 8th ed., ELBS, London, England. 107-112.

Radostits, O.M., C.C. Gay, D.C. Blood and K.W. Hinchcliff. 2000. Mastitis. *In Veterinary Medicine*, 9th ed., W.B. Saunders Company Ltd., London, England. 603-687.

Ramakrishna, K.V. 2007. Investigation on buffalo calf mortality. *Indian Veterinary Association*, **84**: 537-539.

Shivarudrappa, B., G.S. Reddy, S. Jyoti and R.L. Bhagat. 2013. Assessment of buffalo calves mortality in west Godavari district of Andhra Pradesh. *Open Access Scientific Reports*, **2**(4): 1-3.

Snedecor, G.W. and W.G. Cochran. 1994. *Statistical Methods*, 7th ed., Oxford and IBH Publishing Co., New Delhi, India. 312-317.

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