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ORIGINAL ARTICLE

Buffalo Calf Mortality and its Management Through Package of Practices (Drugs) Under Village Conditions

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ABSTRACT
Infant calves of buffalo suffer heavy mortality due to various reasons viz. Microbial factors, Immunological factors, Calf factor, Nutritional factors, Environmental factors and Managemental factors. On the basis of the various causes of mortality observed in village conditions, a package of practice was developed and tested as On Farm Trial (OFT) to minimize the calf mortality in buffaloes. The study (OFT) was conducted in village Bastauli of Keilarus block of Morena district of Madhya Pradesh during July-August 2016. The study was conducted to assess the effectiveness of package of practice (1st day NT zole ½ bolus two times in a day, 2nd day Cod liver oil capsule 1 daily-for 2 days, 3rd day Albomar liquid solution 2 TSF followed by 30 ml liq. Paraffin after 6 hours and O2 tablet (ofloxacin+ orinidazole), 4th day (A) Sulcoprim- 1 bolus- for 3 day, (B) Provisac ½ -1 bolus-4th day for 7 day, Repetition of 3rd day drug-7th day, 8th -11th day Vitamix Gold multivitamin 1 TSF-for 4 days, 12th day Use of Butox as ectoparasiticide and from 13th -30th day Zymopet ½ TSF daily) in minimizing the mortality of infant buffalo calves. The number of calves were 10 (recommended practice) treatment group and 10 untreated (farmer's practice) in the OFT. The mortality was nil and reduced to a magnitude of 100% in treatment group in comparison to farmers practice group where it was found to be 50%. The study showed effective reduction in mortality rate in recommended practice group calves.
Keywords: *Buffalo calf, deworming, OFT, mortality,colostrum*

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INTRODUCTION

Mortality of calf is an important trait both for breeding and economic point of view in dairy enterprise. The success of any dairy enterprise depends upon the survival of the calf crop produced. A high survival rate in a dairy herd helps to increase the selection differential, which is one of the main factors controlling genetic gain and more economic returns. Hence, the survivability of calf is very important factors in dairy industry. It is well known fact that survivability of calves is closely associated with their adaptability [6]. It is an established fact that the fate of a commercial dairy enterprise is solely dependent on the quantum of live calf crop as number of young ones represents the future animal wealth of the enterprise. Healthy calves are not only essential for sustenance of the dairy industry but essential for preserving and maintaining good quality germplasm also [3]. As per estimates, the calf mortality in the first month of age is accounted for 84% of total mortality [2], and is particularly high in the third week of age [4]. Mortality rate in the herd serves as an useful guideline for assessment, improvement and adaptability of calves' life.

A considerable economic well being of dairy farmer can be achieved by reducing the calf mortality. Calves are considered to be the asset for profitable livestock farm and therefore raising of healthy stock of calves in a livestock farm is of paramount importance.

Considering a huge variation in the management practices of dairy farm, occurrence of many diseases in buffalo calves, variation in management skill of farmers and different level of adaptability of animals the mortality rate of buffalo calf differs to great extent. To determine the common etiological factors for high calf mortality and in order to minimize it, a very few research workers have formulated package of practices to ameliorate calf mortality in buffaloes depending upon their existing field conditions. Keeping above points in to consideration and significance of calf mortality to a farmer, the present study was undertaken to test a package of practice (drugs) for reduction of calf mortality in buffalo at farmer's field in adopted village of Keilarus block of Morena district of Madhya Pradesh, India.

MATERIALS AND METHODS

Preparation of package of practices (drugs) to minimize calf mortality

On the basis of the interactions with farmers regarding causes of mortality observed in the local village conditions following causes were identified for mortality in buffalo calf-

1. **Microbial factors:** like Pneumonia, enteritis etc.
2. **Immunological factors:** Delayed or faulty method of colostrum feeding.
3. **Calf factor:** Lower birth weight, negligence towards male calves.
4. **Nutritional factors:** Over/under feeding, lack of appropriate feeding, like milk replacer and calf starter etc.
5. **Environmental factors:** Exposure to extreme climate like cold and hot winds.
6. **Management factors:** Occurrence of various diseases like worm infestation, calf scour, bloat , snake bite and accidental death.

For covering the various causes of mortality observed in the local conditions following package of practice was developed to minimize the calf mortality in buffaloes.

Table-1: Package of practices (drugs) adopted to minimize buffalo calf mortality in infant buffalo calves

Age (days)	Colostrums/milk (litres)	Treatment	Preventive against
1st	2	NT-Zole ½-1 bolus two times in a day	Calf scour
1st	2	Sealing naval vessels.	Navel ill
2nd	2	Cod liver oil capsule 1 daily for 2 days (sea cod)	Night blindness
3rd	2	Albomar liquid solution 2 spoonful followed by 30 ml.liq. paraffine after 6 hours. + Tablet O_2 (ofloxacine + orinidazloe)	Ascriasis and dysentery
4th	2	(a) BioTrim DS (Trimethoprim + sulphamethoxazole) 1 bolus daily for 3 days (b) Provisacc ½ to 1 bolus / day for 7 day	Against diarrhea and calf scour
7th	(milk) @1/10 of body weight	As on day 3	Ascriasis and dysentery
8th-11th	do	Vitamix Gold syp.(multivitamin) 1 spoonful daily for 4 day	To increase the vigor and strength.
12th	do	Use of Butox as ectoparasiticidal	To get rid from ectoparasites.
13th -30th	do	Zymopet ½ TSF daily	Provide enzyme for efficient digestion

The study was first started with selection of progressive dairy farmers (Keeping Graded Murrah buffaloes) of village Bastauli of Keilarus block for the on farm trial during the month of June –July 2016. A total of 20 dairy farmers having at least one buffaloes in advanced stage of pregnancy were selected and divided into 2 groups each having 10 farmers. Farmers in first group (recommended practice) were given training on the proposed package of practices to be used in their neonatal buffalo calf along with written material in Hindi language. Each farmer of first group was provided with drugs included in package for one calf (Table-1). However, in

the second group the farmers having pregnant buffaloes (10 Nos.) and their newly born calves were reared by prevailing management practices followed by farmers in village so as to serve as control

(Farmer's practice). No inputs in the form of medicine, scientific advice/ knowledge were extended to the farmers of control groups.

RESULTS AND DISCUSSION

Table-2:Mortality % of infant buffalo calves under different treatments of OFT

Treatment Group	No of Buffalo calves	No. of dead calves	Mortality %	Reduction in mortality ($\frac{B-A}{B} \times 100$)
(A) Recommended practice (Use of Package of practices (drugs))	10	-	Nil	100
(B) Farmer's practice (No use of drugs)	10	5	50	

The results obtained from the OFT are presented in table 2. After completion of study, it was observed that in the treatment group (10 buffalo calves), no death was observed during entire period of experiment, where as in control group, out of 10 buffalo calves, 5 calves were died. Similar findings were also reported by other workers [1]. In a similar study in Mhow tahsil of Indore district of M.P., evaluation of a similar type of package of practices for reduction in buffalo calf mortality was undertaken [5]. The study showed 100% reduction in calf mortality in treatment group which is in agreement with the present study. However mortality in farmer's practice was found to be 30% which is somewhat lower than the present study. In other study the highest mortality was (19.5%) observed in indigenous buffalo calves below one month of age and mortality rate is higher in male calves in comparison to female [8]. The possible reason behind these lower mortality rates in village conditions from the present study may be better calf rearing practices particularly colostrums feeding just after the birth of calf in their study area.

Considering a huge variation in the management practices of dairy farm, occurrence of many diseases in buffalo calves, variation in managemental skill of farmers, different level of adaptability of animals and to some extent, variation in socioeconomic status and literacy level of farmers, the mortality rate of buffalo calf differs to great extent. To determine the common etiological factors for high calf mortality and in order to minimize it, a very few research workers have formulated package of practices to get rid of calf mortality in buffaloes depending upon their existing field conditions. A major reason of calf mortality besides the managemental causes is the parasitic load in the calves due to which their health deteriorates and the calf often dies [7]. Management causes triggering mortality in buffalo calves includes unhygienic condition of shed, incorrect knowledge about care and management of new born calf, improper protection against unfavorable condition and delay in colostrums feeding to newborn calf. For effective control of buffalo calf mortality under village condition the approach should be based on containment of mortality by therapeutic agents on one hand and educating the farmers regarding basic calf rearing principles.

CONCLUSION

The prospect of any dairy maneuver depends largely upon a successful raising of calves. However, the major difficulty proved to be the higher calves mortality at an early age Therefore, there is an urgent need to educate the rural dairy farmers about the scientific calf rearing practices including control of diseases. It can be concluded that this package of practices may be recommended to minimize buffalo calf mortality.

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REFERENCES

1. Arora S P (1978), *Calf Raising Booklet* N.D.R.I. Pub. No. 135.
2. Jennny, 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:* 2284-89.
3. Kareemulla, K and B.S. Meena (2004). A status of buffalo based economy in Asia *In*: Kundu, S.S., A.K. Mishra and P.S. Pathak (2004) (eds.) Buffalo production under Different Climatic region 1st (edn,) IBDC, Lucknow, 512-529
4. Khan, A. and Khan, M.Z. (1996). Neonatal mortality in Pakistan. I. Prevalence and factors influencing mortality in buffalo and cow neonates. *Buffalo J. 12:* 243-52.

5. M Shrivastava, S Nanavati, D S Yadav and A K Mishra (2013).Studies on incidences and causes of buffalo calf mortality in Malva region of Madhya Pradesh*. Int. J. Agric. Sc & VetMed (2)69-72*
6. NRC (1968). Report of the sub-committee on prenatal and postnatal mortality in bovines. National Academy Press, Washington, DC.
7. Sharma M C and Mishra R R (1987) Livestock health and management. Khanna Publishers, New Delhi.
8. Sreedhar, S., M. Ranganadham and E. Madan Mohan (2010). Calf mortality in indigenous Buffaloes. *Indian Vet J.,* 87:197-198.