



Healthcare and Management of Buffalo Calves in Nili-Ravi Breed of Buffalo in its Home Tract

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ABSTRACT

Buffalo plays a vital role in the Indian dairy sector with a contribution of about 49 percent to the total milk produced in the country. Adoption of improved calf healthcare and management can be helpful in reducing calf mortality and ultimately help in enhancing profits from the dairy enterprise. The study was designed to evaluate buffalo calf husbandry practices followed by farmers of Ferozepur district of Punjab, India which is part of the breeding tract of Nili Ravi breed of buffalo. The data were collected from a total of 150 buffalo keepers from all the six blocks of the district during the period from June 2019 to December 2021. The results revealed that the practice of deworming the pregnant dam during last trimester of pregnancy was adopted by only 19.3 per cent of respondents. A moderately high percentage of farmers (61.3%) kept a close observation and provide assistance during the calving of buffaloes for any difficulty during the process and extremely low number of farmers (10.7%) adopted practice of cleaning of muzzle of new born calves for clearing mucus. Only 4 per cent used the practice of cutting of naval chord and applying disinfection to it. Majority of farmers (64.7%) in the area preferred to feed colostrum to the newly borne calves only after shedding of placenta by the dam. Only 48 per cent of buffalo farmers in the area had knowledge about harmful effects of endoparasites and adopted practice of deworming. It was encouraging to note that a very high percentage of farmers *i.e.*, 74.7% adopted practice of vaccination.

Key Words: *Bubalus bubalis*, buffalo management, calf welfare, calf care, Nili-Ravi.

INTRODUCTION

India has over 113.3 million buffaloes which is approximately 57.8% of the total world buffalo population (FAO, 2017). Buffalo is considered as black gold and plays a vital role in the Indian dairy sector with a contribution of about 49 percent to the total of 187.75 million tonnes milk produced in the country (Anonymous, 2019). Indian rural economy relies heavily on buffalo farming for their livelihood as buffaloes constitute about twenty percent of total livestock population. Care and management of calves is very important aspect of buffalo production as it has a direct relation with the profitability of the farm. Adoption of improved calf healthcare and management can be helpful in reducing calf mortality and ultimately help in enhancing profits from the dairy enterprise. Young

dairy calves are at high risk for morbidity and mortality (Uetake, 2013) and calf mortality is linked with many factors such as timing and quantity of colostrum feeding, type of housing, nutrition and other management practices. Calf mortality is also dependent on the management during early life of calves when they are born. Poor management practices lead to economic losses to the farmers in terms of higher calf mortality, poor growth rate, delayed maturity and poor productivity (Sabapara *et al*, 2015). Heavy buffalo calf mortality has been reported particularly during first few months of their postnatal life (Tiwari *et al*, 2007; Ahmad *et al*, 2009). Therefore, scientific adoption of buffalo calf healthcare practices such as colostrum's feeding; management of naval cord, control of endoparasites, disease awareness, vaccination and record keeping

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can help in reducing calf health problems and reduce mortality. Calf healthcare management is important aspect of calf welfare and can be decisive in survivability of calves. Keeping this in view, the study was designed to evaluate buffalo calf husbandry practices followed by farmers of Ferozepur district of Punjab, India which is part of the breeding tract of Nili Ravi breed of buffalo.

MATERIALS AND METHODS

Location of study area

The survey was carried out to investigate existing buffalo calf husbandry practices adopted under field conditions by the buffalo farmers of the breeding tract of Nili-Ravi breed of buffalo. The location of the study was Ferozepur district which is the border district situated at the south west region of state of Punjab in India. The district is located in the Northern region of the country at 30°56'24"N 74°37'12"E and is near the India-Pakistan international border. The general elevation of the District ranges from 230 meters in the north-east to about 175 meters in the south-west and comprises an area of 2,190 square kilometers.

The data were collected from a total of 150 buffalo keepers from five villages from each of all the six blocks of the district namely Ferozepur, Ghall Khurd, Guruharsahai, Mamdot, Makhu and Zira during the period from June 2019 to December 2021. The data were collected personally from respondents through an already prepared and pretested questionnaire. All the farmers of the study were keeping Nili-Ravi breed either for domestic or for commercial purpose in the district. The data were tabulated and subjected to appropriate statistical tools by applying frequencies and percentages.

RESULTS AND DISCUSSION

The present findings revealed that the practice of deworming the pregnant dam during last trimester of pregnancy was adopted by only 19.3 per cent of farmers of the study area. Similar was the finding of Maousami *et al* (2013) who reported that majority

(92%) of the respondents was not following deworming of pregnant dam in last trimester of gestation. This is an important practice because the calf is born at the time of calving however; calf welfare begins when the calf is still in the dam's uterus as an embryo. So, management of pregnant dam in last trimester and close observation during calving process is extremely crucial in deciding the future health of new born calf after birth. Khan *et al* (2007) also reported that farmers were not treating their pregnant stock against the intestinal parasites due to the fear of abortion.

It was observed that moderately high percentage of farmers (61.3%) kept a close observation and provide assistance during the calving of buffaloes for any difficulty during the process. Similar was the finding of Yadav *et al* (2016) but these observations were encouraging than the findings of Kumar *et al* (2006) who reported lower rate of attending parturition. Only 40.7 per cent farmers ensured that respiration of new born has started functioning normally. However, an extremely low number of farmers (10.7%) adopted practice of cleaning of muzzle of new born calves for clearing mucus. However, Khadda *et al* (2010), Rathore *et al* (2010) and Kumar and Mishra (2011) reported that all the respondents attended calving and took care of the calves after parturition. On the contrary, the majority (95.33%) of the respondents cleaned the calves soon after calving was reported by Sabapara *et al* (2015).

Only 4 per cent farmers used the practice of cutting of naval chord and applying disinfection to it. It was in agreement to the observations of Godara *et al* (2017) and Sabapara *et al* (2015) who reported that 92.50 per cent and 96.33% buffalo keepers did not follow the practice to cut and disinfect the naval cord respectively. A low adoption of this practices was probably because of lack of awareness of farmers. However, Rathore and Kachwaha (2009) reported contrary findings. A close observation of dam during the process of calving and monitoring of respiration of newly borne calf is very much

Table 1. Responses of buffalo keepers towards calf healthcare practices of buffalo calves.

Sr. No.	Practice	Response	Frequency	Percentages
1	Deworming of Dam before calving (Last trimester)	Practiced	29	19.3
		Not Practiced	121	80.7
2	Assistance at the time of birth (Calving)	Yes	92	61.3
		No	58	38.7
3	Monitoring of New born calf for respiration	Yes	61	40.7
		No	89	59.3
4	Mucus Cleaning from new born	Practiced	16	10.7
		Not Practiced	134	89.3
5	Cutting of Naval Chord practiced	Practiced	6	4.0
		Not Practiced	144	96.0
6	Time of Feeding of colostrum	Immediately after birth (within 2 hrs)	53	35.3
		After shedding of placenta	97	64.7
7	Quantity of colostrum Fed	One quarter	102	68.0
		Half quarter	41	27.3
		After measuring (10 % of body weight)	7	4.7
8	System of milk feeding	Suckling	138	92.0
		Pail feeding	12	8.0
9	Quantity of milk provided	One quarter	86	57.3
		Half quarter	64	42.7
		According to body weight	23	15.3
10	Induction of Green Fodder Feeding	After 15 days	104	69.3
		After 30 days	34	22.7
		After 60 days	12	8.0
11	Special concentrate feeding to calf	Yes	36	24.0
		No	114	76.0
12	De-worming of calf	Practiced (Regular)	47	31.3
		Practiced (Partially)	25	16.7
		Not Practiced	78	52.0
13	Vaccination	Practiced	112	74.7
		Not Practiced	38	25.3
14	Awareness about important diseases	FMD	139	92.7
		HS	128	85.3
		BQ	13	8.7
		Brucellosis	56	37.3
15	Awareness about breeds for better calf	Yes	67	44.7
		No	83	55.3
16	Disbudding	Practiced	0	0
		Not Practiced	150	100.0

17	Identification	Practiced	0	0
		Not Practiced	150	100.0
18	Record Keeping	Yes	0	0
		No	150	100

helpful in reducing losses of neonates in early part of their life.

The timing of feeding colostrum is very crucial in providing nutrition and immunity to young ones, however majority of farmers (64.7%) in the area preferred to feed colostrum to the newly borne calves only after shedding of placenta by the dam whereas only about 35.3 per cent fed it within first 2 hr of birth. Ahmad *et al* (2009) and Yadav *et al* (2015) also reported similar finding of low adoption of immediate feeding of colostrum. A very high percentage of farmers (95.3%) fed colostrum without being aware about the quantity of colostrum and body weight of calf though they just feed by rough estimate about quantity such as one quarter of dam left for the calf (68.0%) or half quarter (27.3%). This showed that very little proportion of respondents (4.7%) was aware about the basis of colostrum's feeding which is on the basis of body weight. Similar was the results of Godara *et al* (2017) who found none was feeding colostrum on the basis of body weight of new born. Therefore, farmers should be educated about the role of colostrum in survival of calf and also timing and quantity fed is extremely important.

Suckling was the primary method of providing milk to the calves and almost all the buffalo keepers (92%). Hence, pail feeding was not a popular method of milk feeding to calves in the study area. Similar to the colostrum feeding, milk feeding on the basis of the body weight of the calf was not adopted by a major portion of respondents. Even though deworming is an important management tool to prevent health deterioration in animals, only 48 percent of buffalo farmers in the area had knowledge about harmful effects of endoparasites and adopted practice of deworming as converse to Chander *et al* (2022) who reported a higher

percentage (72.59%) of adoption. But adoption of practice of regular deworming was adopted by only 31.3 per cent. Percentage of respondents using dewormer regularly was very less and due to this reason the per cent of calf mortality is very high reported by Singh *et al* (2000). Tiwari *et al* (2007) reported that most of livestock owner dewormed the calves when the calf was off feed or they observed worms in the faeces.

It was encouraging to note that a very high percentage of farmers i.e. 74.7% adopted practice of vaccination. The practice of vaccination was adopted by majority (88%) of buffalo owners according to Maousami *et al* (2013) and about 91 per cent in urban and 87 per cent in rural areas, regularly reported by Dhaliwal *et al* (2017). It was also found that respondents knew mainly about FMD (Foot and Mouth disease) and HS (Hemorrhagic septicemia) diseases and very low number of farmers new about diseases like Brucellosis. Nearly 55 per cent farmers were unaware about the breeds and did not made any special efforts while breeding their animals for getting better quality buffalo calves for future. It was also found that no special feeding like calf starter feed etc. was provided by major portion 76 % of farmers and they fed only milk, some green fodder and little grain by products to supplement. This proportion was in line with the findings of Yadav *et al* (2016) who reported total of 57.6% of respondents provided calf starter to their calves, while 42.4% respondents didn't provide calf starter. Overall scenario of level of adoption of different important activities has been shown in the Figure 1.0.

All the respondents of the study area did not practice disbudding of buffalo calves as they feel this decreases the value of buffalo animals though they preferred disbudding in cows. Also practices

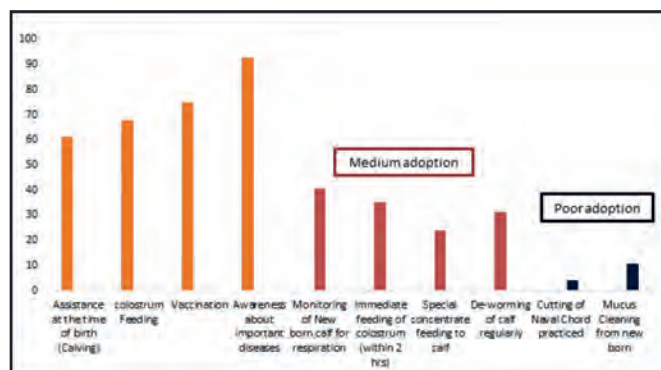


Figure 1.0. Level of adopted practices

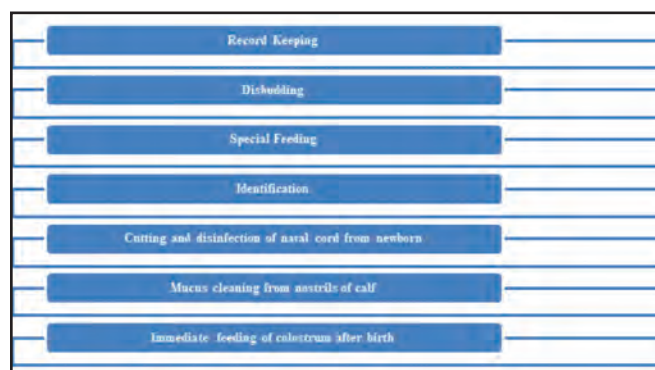


Figure 2.0. Extremely Poorly adopted practices

such as identification and record keeping not adopted by any farmer (Figure 2.0), instead they preferred to remember and act on the basis of their memories. These practices are very useful for decision making for future herd, so there is a need to motivate farmers to adopt scientific calf rearing practices so that calf mortalities can be minimized and profits can be enhanced in buffalo farming.

CONCLUSION

From the present study it was concluded that the buffalo keepers of the study area are adopting many of improved scientific calf rearing practices such as control of endoparasites, vaccination and colostrum feeding etc. but there is certainly a scope of improvement in knowledge and adoption of scientific calf management practices. Therefore, farmers should be motivated and trained about these practices and made aware of quantity of colostrum to be fed to calf along with the focus on timing of feeding colostrum feeding. Similarly deworming is only beneficial when used regularly and hence should be adopted by farmers in totality. Likewise, knowledge of breeds and breeding awareness is of utmost importance for profitable dairy farming.

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