Shivarudrappa et al., 2:4
http://dx.doi.org/10.4172/scientificreports704

Open Access Scientific Reports

Research Article Open Access

Assessment of Buffalo Calves Mortality in West Godavari District of Andhra Pradesh, India

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Introduction

Calf plays an important role in the development and profitability of a dairy farm and dairy farmers, as future of dairy herd solely depends on the successful raising of the young calves. Healthy calves are not only essential for sustenance of dairy farm but also necessity for preserving the good quality germ plasm. Calf mortality is a major concern at farmer level as well as at organized farm. Under the jurisdiction of BIRD, A.P. runs five Cattle Development Centres (CDC) in West Godavari district of Andhra Pradesh total 1132 buffalo calves (Male & female) were born during two years period (April 2010-March 2012) and it was noticed that 73.41 percent calves were died within 1 to 5 months of their age due to different reasons. This alarming situation attracted the attention and to assess the causes of calf mortality present study was planned.

Materials and Methods

Data generated through survey of 533 farmer families maintaining 2,897 buffalo animals from 43 villages spread over 6 tahsils in West Godavari district of Andhra Pradesh formed the basis for this study. Questionnaire developed for collecting information from farmer families were field tested before use. Researchers encouraged farmers to narrate their personal experiences about rearing of buffaloes and special to new born calves instead answering yes or no type questions and qualitative information so generated was quantified using scoring method before tabulation. The herd structure and composition was known by grouping all the animals under study as buffalo calves below one year, buffalo animals of 1 to 3 years, female under milking, dry and heifers and buffalo males used for breeding or agriculture purpose. The data collected was tabulated, grouped and analyzed using standard statistical methods.

Results and Discussion

Herd size and category of animals

The average village herd size per farmer was observed to be 5.44 ± 0.15 (Table 1). The comparable herd size (5.08 ± 0.08) was recorded by Gokhale and Bhagat [1] for crossbred cattle in Maharashtra state. Mean herd size in K.Y.Gudemand Polavaramblocks were larger (6.15 ± 0.29 &6.14 ± 0.24), followed by Buttai Gudem (5.00 ± 0.71) block and Jangareddi Gudem (4.93 ± 0.21) block, while herd size for Jeelugumilli and Kamavarapukota was 3.70 ± 0.46 and 3.43 ± 0.50, respectively. Out of total 2,798 buffalo animals which were studied, 62.79 percent animals were she buffaloes (in milk, dry & heifers), 24.92 percent calves below 1 year, 11.22 percent buffaloes of 1 to 3 years age and 1.07 percent buffalo males (breeding & agriculture work purpose).

Calf management practices followed

The information on management practices followed for buffalo calves was compiled in table 2. The information revealed that almost all buffalo owners' (99.62%) told that buffalo calves died in their herd. Further information in this context noticed that 33.40 per cent owners' calves were died due to pneumonia, 30.96 per cent owners' calves were died suffering due to diarrhea, Khan et al. [2] reported in Pashavar city that diarrhea was one of the major causes of neonatal calf mortality. 16.51 per cent farmers' calves were died to improper care of naval cord, 12.95 per cent owners' were not in position to assess the reason of death and 6.19 per cent owners' calves were died owing to parasitic infestation. Panchasara et al. [3] revealed predominant causes of mortality were calf scour (diarrhea), pneumonia and pneumoenteritis under organized farm at Dantiwada University. While assessing the calf death age it noticed that 81.99 per cent owners' buffalo calves were died within 2 to 6 months of age, 11.82 per cent owners' calves were died within 2 months of age however percentage of owners whose calves were died after 6 months of age was 6.19. In South Carolina, dairy herds Jenny et al. [4] reported neonatal calf mortality in the first month up to 84% of the total mortality.

Ahmad et al. [5] in their study on "farmer's attitude towards interventions regarding buffalo calf health care and management practices" in Pakistan reported that colostrums feeding help neonatal calf to make a defense against infectious diseases and if its feeding delayed, it leads to lowered immunity level in calves and susceptible to diseases. In present investigation, colostrums was fed to the calves by all buffalo owners (100%) but timing of feeding seems to be not proper as 73.55 percent owners fed colostrums after 1 hour and 25.52 percent owners fed it within 3 to 6 hours, while less than 1 percent (0.56) buffalo owners fed the colostrums within half an hour after birth of calf. Wynn et al. in their study "Parental nutrition of the calf and its consequences for lifelong productivity" reveled that calves genetic programming influence through the complexity of hormones, growth factors and immune-stimulants incorporated into colostrum and milk consumed by the neonatal calf. This natural process is most often disrupted as calves are weaned abruptly or under fed to maximize milk output for commercial exploitation. In present study, we have seen that 61.91 percent respondents allowed to calf suckle one or two teats, while only 36.77 percent owners allowed all teats. Number of teats allowed to suckle was matter of concern along with quantity of milk which remained in udder after milking and consumed by the calf as 98.69 percent owners allowed the calf just for letting down the process of milk, which indicated under nourishment of calves at their growth and immunity development stage. 96.62 percent owners' calves were infested with ecto-parasite and only 12.95 percent owners followed regular control measure and remaining 87.05 percent farmers either not followed control measure or used occasional measures. Although

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Received March 11, 2013; **Published** May 01, 2013

Citation: Shivarudrappa B, Gopal Reddy S, Jyoti S, Bhagat RL (2013) Assessment of Buffalo Calves Mortality in West Godavari District of Andhra Pradesh, India. 2: 704 doi:10.4172/scientificreports.704

Name of block	Below 1 yr		1 to 3 yrs		Males		Females			Total	Herd size
	M	F	M	F	Breeding	agriculture	In milk	Dry	Heifers		
Buttai Gudem	43	59	5	26	0	00	111	112	19	375	5.00 ± 0.71
Jangareddi Gudem	46	153	13	79	0	4	272	132	41	740	4.93 ± 0.21
Jeelugumilli	18	17	2	7	0	00	36	25	6	111	3.70 ± 0.46
K. Y. Gudem	38	175	21	54	17	00	258	137	137	837	6.15 ± 0.29
Kamavarapukota	7	4	0	7	0	0	22	8	0	48	3.43 ± 0.50
Polavaram	63	99	36	75	9	1	244	179	80	786	6.14 ± 0.24
Grand Total	215	507	77	248	26	5	943	593	283	2897	5.44 ± 0.15
Percentage	24.92		11.22		1.07		62.79			100	

Table 1: Block and category-wise distribution of buffaloes.

Sr. No.	Particulars	No. of respondents and %			
		Yes	%	No	%
1	Calves die in herd	531	99.62	2	0.38
2.1	Die due to diarrhoea	165	30.96		
2.2	Die due to pneumonia	178	33.40		
2.3	Die due to navel ill	88	16.51		
2.4	Die due to parasitic infestation	33	6.19		
2.5	Die due to unknown reason	69	12.95		
3.1	Calves die within 1-2 months age	63	11.82		
3.2	Calves die within 2-3 months age	212	39.77		
3.3	Calves die within 3-6 months age	225	42.21		
3.4	Calves die more than 6 months age	33	6.19		
4	Colostrums feeding	533	100	0	
4.1	Feeding within half hour	3	0.56		
4.2	Feeding within 1 -2 hours	392	73.55		
4.3	Feeding after 3-6 hours	136	25.52		
4.4	Feeding after 7 hours	2	0.38		
5	Milk feeding	529	99.25	4	0.75
5.1	One teat allowed	279	52.35		
5.2	Two teats allowed	51	9.57		
5.3	Three teats allowed	7	1.31		
5.4	All teats allowed	196	36.77		
6.1	Allow to suckle after milking	6	1.31		
6.2	Allow to suckle just to start letting down process of milk	526	98.69		
7	Use of de-worming	529	99.25	4	0.75
7.1	De-worming repeat frequency 1 months	236	44.28		
7.2	De-worming repeat frequency 2 months	200	37.52		
7.3	De-worming repeat frequency 3 months and more	93	18.20		
8	Calves infest with ticks or other ecto-parasite	515	96.62	18	3.38
8.1	Regular use of control measure	69	12.95		
8.2	Occasional use of control measure	464	87.05		

Table 2: Calf management practices followed.

worm infection was not considered to be a major cause of calf mortality, its control was very much essential to develop immunity against diseases. 99.25 percent owners used de-worming for their calves but only 18.20 percent owners' repeated the de-wormer dose three or more times, 37.52 percent owners repeated the dose two times, however 44.28 percent owners administered the de-wormer only one time.

Summary

Results of the present study indicated that buffalo calves are highly neglected by buffalo owners. It was also noticed that calf health care practices are very poor as mortality rate in the study area was 73.41 percent and this might due to these buffalo owners find the calf rearing uneconomical. Higher percentage of calf mortality (81.09) in Uttar Pradesh was reported by Tiwari et al. [6] in commercial dairy farms. The calf mortality was mainly due to the poor management of calves which are not even given the minimum care of naval cord disinfection, timely colostrums feeding, proper use of de-worming, proper milk feeding and timely treatment. In fact it can be said that these buffalo owners seem to be really not interested in rearing the calves due to notion of false economy prevailing among them that rearing of calf is not beneficial.

Acknowledgement

The financial assistance from ITC-MSK is thankfully acknowledged. Authors are very much grateful to Mr. B. K. Kakade, Executive Vice Chairman, BIRD, Andhra Pradesh state society for encouragement. The participating famers and Cattle Development In-charges who helped during this study period are also acknowledged.

References

1. Gokhale SB, Bhagat RL (2011) Gender based management practices followed for crossbred cattle in Maharashtra state. International Journal of Tropical Agriculture 29: 213-215.

2. Khan ZU, Khan S, Ahmad N, Raziq A (2007) Investigation of mortality incidence and managemental practices in buffalo calves at commercial dairy farms in Peshawar city. J Agric Biol Sci 2: 16-22.

3. Panchasara HH, Sutaria TV, Shah RR (2011) Factors affecting mortality in Mehsana buffalo calves. INTAS POLIVET 10: 170-173.

4. Jenny BF, Cramling GE, Glaze TM (1981) Management factors associated with calf mortality in South Carolina dairy herds. J Dairy Sci 64: 2284-2289.

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

6. Tiwari R, Sharma MC, Singh BP (2007) Buffalo calf health care in commercial dairy farms: a field study in Uttar Pradesh (India). Livestock Research for Rural Development 19.