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Survey of Calf Rearing Practices Followed at Rural Dairy Farms in Surat District

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ABSTRACT

A field survey was conducted purposively in Surat district of Gujrat to ascertain the calf rearing management practices followed by rural dairy animal owners during March, 2013 to January, 2014. Data were collected from randomly selected 300 dairy animal owners through personal interview with the help of pre-tested structured schedule from five talukas selected at random. The present study revealed that majority (95.33%) of the respondents attended calving and cleaned the calves soon after parturition. Majority (96.33%) of respondents did not practice ligation, cutting and disinfection of the naval cord and it was left to fall off itself naturally. Only 35.05% of the respondents fed colostrum to new born calf within one hour of birth. Majority (58.67%) of the respondents followed weaning practices at the age of three months and 23.33% of the respondents allowed calves to suckle their dams till lactation ceased. Majority (82.33%) of the respondents provided green fodders from two months of age and only 2.67% of the respondents provided calf starter to the calves. Only 37% of the respondents followed dehorning during 3-4 week of age of their calves, 17% of respondents practiced castration of male calves, 48.67% of the respondents gave anthelmetics to the calves regularly and 12.33% of the respondents provided jacketing as well as bedding in order to protect their calves from cold during winter season.

Keywords: Calf rearing, Dairy, Management, Practices, Rural, Surat district

Gujarat is an important state in milk production and marketing in India on co-operative dairy system. It contributed around 9.82 million tonnes (7.65%) of milk to the total milk pool of India and per capita milk availability was 436 g/day during 2011-12 (Anonymous, 2012). Gujarat has around 5.23% of cattle and 9.55% of buffalo population of the country (Anonymous, 2014). Calves play an important role in the development of the dairy sector of the country, as the future of the dairy herd solely depends upon the successful raising of young calves. Female calves are especially kept for herd replacement. Calf-care is not only essential for sustenance of the dairy industry but is also essential for preserving and maintaining good quality germplasm. Important aspects in the calf rearing are the health management and proper nutrition. Calves for the future dairy herd require skillful management with constant attention. 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; Sheikh *et al*., 2011; Maousami *et al*., 2013) which increase the cost of rearing on treatment and farmers faces economical loss by calf mortality. Keeping these things in mind the present study was designed to gather information on calf rearing management practices under village conditions of Surat district.

MATERIALS AND METHOD

A field survey was conducted in Surat district of South Gujarat during March, 2013 to January, 2014. Surat district possess nine talukas namely Choryasi, Palsana, Kamrej, Bardoli, Olpad, Mangrol, Mandvi, Mahuva and Umarpada. This district is spread over an area of 4327 sq. km and has 761 villages. Out of nine talukas in the district, five talukas were randomly selected. From each

Table 1. Distribution of the dairy animal owners according to calf rearing management practices followed

Particulars	Category	Frequency	Per cent
Attended calving and took care of the calves after parturition	No	014	04.67
	Yes	286	95.33
Cleaning of calf after calving	No	014	04.67
	Yes	286	95.33
Practiced ligation/cutting and disinfection of the navel cord	No	289	96.33
	Yes	011	03.67
Feeding of colostrum to new born calf	Yes	291	97.00
	No	009	03.00
Time of colostrum feeding after birth	Within one hour	102	35.05
	One to four hour	098	33.68
	After fall of placenta	091	31.27
Quantity of colostrums feeding	Ad lib suckling	192	65.98
	One quarter	077	26.46
	Half quarter	022	07.56
	None	070	23.33
Weaning age of calves	3 months	176	58.67
	2 months	019	06.33
	1 month	008	02.67
	0-3 days	027	09.00
Number of teats allowed for suckling	One teat	217	79.49
	Two teats	056	20.51
Water provided to the calf/ day	Once	005	01.67
	Twice	243	81.00
	Ad-lib	052	17.33
Feeding of calf starter to the calves	Yes	008	02.67
	No	292	97.33
Offering of green fodder at age of the calves	1 month	018	06.00
	2 months	247	82.33
	3 months	035	11.67
Disbudding of calves	Yes	111	37.00
	No	189	63.00
Castration of male calves	Yes	051	17.00
	No	249	83.00
Deworming of calves	Regular	146	48.67
	Occasional	122	40.67
	Not practiced	032	10.66
Provision of jacketing as well as bedding during winter	Yes	037	12.33
	No	263	87.67

selected taluka 5 villages having functional primary milk producer's co-operative societies were selected at random. Minimum two dairy animals kept by twelve dairy animal owners from each village were randomly selected with the help of Talati cum Mantri/ village dairy cooperatives which constituted a total of 300 respondents. While selecting respondents due care was taken to ensure that they were evenly distributed in the village and truly represented animal management practices prevailing in the area. The selected dairy farmers were single interviewed and the desired information was collected regarding calf rearing management practices with the help of pre-designed and pre-tested questionnaire. Data were tabulated and analyzed as per standard statistical tools to draw meaningful interference.

RESULTS AND DISCUSSION

The results of various calf rearing management practices followed by dairy animal owners in the study area are presented in Table 1 and revealed that majority of respondents (95.33%) attended calving and took care of the calves after parturition, while only 4.67% of the respondents didn't follow this practice. Present findings are similar to the findings of Meena *et al*. (2008). 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. The majority (95.33%) of the respondents cleaned the calves soon after calving and remaining 4.67% of the respondents didn't follow this practice. Similar findings were reported by Rathore *et al*. (2010) and Kumar and Mishra (2011). It was also observed that 96.33% of respondents did not practice ligation, cutting and disinfection of the naval cord and it was left to fall off itself naturally, whereas remaining 3.67% of respondents followed these practices. The lowest percentage of dairy farmers following these practices was probably due to lack of awareness. Hence, more efforts are required to motivate farmers to follow these practices. Present findings are similar with the results recorded by Khadda *et al*. (2010) and Maousami *et al*. (2013). However, they are contrary to the results of Rathore and Kachwaha (2009) and Rathore *et al*. (2010) who observed that 37 and 85.56% of the respondents followed these practices, respectively.

The present study indicated that 97% of the respondents followed practice of colostrum feeding to new born calves for their survival. Present results are similar to the results reported by Divekar and Saiyed (2008), Meena *et al*. (2008) and Kumar and Mishra (2011). Further, the data revealed that scientific recommendation of feeding colostrum to newborn calves within one hour of birth was being practiced by 35.05% of the respondents which might be due to the low level of awareness regarding importance of timely colostrum feeding. Colostrum is the sole source of immunity to the new born calves; hence, more efforts are required to educate the farmers for timely feeding of colostrum. These findings are similar to findings of Deshmukh *et al*. (2009) and Rathore and Kachwaha (2009). It was found that the new born calves were allowed for suckling colostrums as *ad lib*., one quarter and half quarter by 65.98, 26.46 and 7.56% of the respondents, respectively. Present results are similar to the results reported by Kumar and Mishra (2011).

Majority of the (58.67%) respondents followed weaning practices at the age of three months, while 6.33, 2.67 and 9% of the respondents followed weaning practices at the age of two months, one month and 0-3 days, respectively and remaining 23.33% of respondents didn't follow weaning practice (Table 1). This practice increases the calving interval in dairy animals. Therefore, to overcome this problem, the practice of weaning calves after three months of age under suitable hygienic conditions is advised. These findings are supported by findings of Deshmukh *et al*. (2009). However, they are contradictory to the results of Meena *et al*. (2008), Khadda *et al*. (2010) and Varaprasad *et al*. (2013). The majority (79.49%) of the respondents allowed the calves to suckle only one teat, while remaining 20.51% of the respondents allowed suckling of two teats of their dams for an average 7 minutes. These findings are supported by findings of Divekar and Saiyed (2008) and Sheikh *et al*. (2011).

The study revealed that only 2.67% of the respondents provided calf starter, while 97.33% of the respondents did not provide calf starter to the calves (Table 1). The present findings are encouraging than the result reported by Prajapati (2012) who observed that none of the respondents provided calf starter to their young calves. It might be due to the low level of awareness of dairy farmers regarding the nutrient requirements of growing calves which could not be met by feeding milk alone. Majority (82.33%) of the respondents provided green fodders from two months followed by 11.67 and only 6% of the respondents

provided green fodders from three and one month after birth, respectively. It might be due to the awareness of dairy farmers regarding incorporation of fodder in the ration of calves which hastens the development of rumen function at early age. This finding is supported by the findings of Sinha *et al*. (2010).

It was observed that 63% of the respondents did not follow dehorning, while only 37% of the respondents followed dehorning during 3-4 week of age of their calves (Table 1). It might be due to lack of knowledge regarding advantages of dehorning practice. These findings are lower than the findings of Malik *et al*. (2005), while higher than that of Gupta *et al*. (2008), Rathore *et al*. (2010) and Kumar and Mishra (2011). It was also observed that 17% of respondents practiced castration of male calves, while 83% of respondents didn't follow this practice. It might be due to the fact that only those farmers who kept the animals for work purpose followed this practice otherwise they disposed them as early as possible. These findings are similar to the findings of Rathore *et al*. (2010). However, these findings are higher than that of Rathore and Kachwaha (2009) and Kumar and Mishra (2011). The study revealed that most of the respondents gave anthelmetics to the calves regularly (48.67%) followed by occasionally (40.67%) and no medication (10.66%) to control the endoparasites. The result of this practice is indicative of high level of awareness in respondents. The present observations are in accordance with the results recorded by Malik *et al*. (2005) and Gupta *et al.* (2008). It was observed that only 12.33% of the respondents provided jacketing as well as bedding in order to protect their calves from cold during winter season, while majority (87%) of the respondents didn't follow these practices. These results are contrary to the findings of Sinha *et al*. (2010).

CONCLUSION

It can be concluded that calf rearing management practices in the study area were having quite satisfactory and needs improvement in recommended practices like feeding of colostrums within one hour of birth, ligation, cutting and disinfection of the naval cord, weaning at the age of three months, provided calf starter to the calves, castration, deworming and provided jacketing as well as bedding in order to protect their calves from cold during winter season which increases the growth rate as well as survival rate of calves.

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