The Indian Journal of Veterinary Sciences & Biotechnology ***(2017) Volume 13, Issue 1, 51-55***

ISSN (Print) : 2394-0247 : ISSN (Print and online) : 2395-1176, abbreviated as IJVSBT

***http*://dx.doi.org/10.21887/ijvsbt.v13i01.8735**

Submitted : 05-05-2017 ***Accepted : 05-06-2017*** ***Published : 16-08-2017***

Existing Calf Management and Milk Marketing Practices followed in Kheda and Panchmahal Districts of Middle Gujarat

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Abstract

The present study was undertaken in Kheda and Panchmahal districts of middle Gujarat to know the existing calf management and milk marketing practices followed by the dairy farmers. The study was conducted in randomly selected four talukas each from Kheda and Panchmahal districts. From each taluka five villages and from each village five respondents were randomly selected. Thus, total 200 respondents were included in the study. Majority (71.50 %) of the respondents followed practice of cutting the naval cord of the calf at the time of birth, of which 67.83 percent farmers were ligating and applying antiseptic to naval cord. More than half of the farmers followed disbudding in Kheda district whereas, more than three fourth of the farmers have not adopted this practice in Panchmahal district. Majority (95.00 %) of the respondents followed suckling / natural system of calf raising. Majority of the respondents provided colostrum to the calves within one hour of birth (55.00 %) or at the most between one to three hours of birth (28.50 %). Moreover, 38.00 percent of the farmers provided colostrums only after expulsion of placenta. Cent percent of the respondents from both the districts sold the milk to the dairy co-operative societies. However, majority (85.50 %) of the dairy farmers retained 1 to 2 liters of milk for their household consumption.

Key Words: Management practices, Calf raising, Milk marketing, Dairy farmers, Middle Gujarat.

Introduction

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 (Maousami *et al*., 2013) which increases the cost of rearing on treatment and farmers face economical loss due to calf mortality. Further, milk being perishable commodity, needs a regular assured market for fetching economic price and day to day earning for livelihood of farmer families. In Gujarat Co-operative sector is well developed, yet private vendors are playing their role as middleman in some pockets. Keeping these facts in mind, the present study was designed to gather information on calf rearing and milk marketing practices being followed under village conditions of Kheda and Panchmahal districts of middle Gujarat.

Materials and Methods

The study was conducted in Kheda and Panchmahal districts of middle Gujarat. Four talukas selected from each district and five villages from each taluka were randomly selected. Thus, total forty villages were included in the present study. From each village, five respondents/dairy farmers were randomly selected. Thus, total 200 respondents/dairy farmers were selected for the investigation. 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 feeding 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 inference.

Results and Discussion

Existing calf management practices followed by respondents of Panchmahal and Kheda district has been shown in Table 1. Perusal of the data indicated that majority (71.50 %) of the respondents had followed practice of cutting the naval cord of the calf at the time of birth, of which 67.83 percent farmers were ligating and applying antiseptic to naval cord. Rathore *et al*. (2010) reported similar findings. Variable results were observed about disbudding practice. More than half of the farmers followed disbudding in Kheda district whereas, more than three fourth of the farmers have not adopted this practice in Panchmahal district. The differences between two districts were significant ($p<0.01$). Rathore *et al*. (2010) reported that very few farmers followed dehorning in Churu district of Rajasthan, which is in accordance with our result.

Majority (95.00 %) of the respondents followed natural system of calf raising, i.e. by suckling, and allow the dams to lick their calves after birth (93.50 %). This is in agreement with the findings of Khadda *et al*. (2010), Sunilkumar, and Mishra (2011).Majority (86.00 %) of the respondents followed cleaning of calves after birth. All the respondents knew the importance of colostrum feeding and provided it to the calves within one hour of birth (55.00 %) or at the most between one to three hour of birth (28.50 %). Study carried out by Subramanyam *et al*. (2016) partly confirmed these findings. Only 16.50 percent of the farmers delayed colostrum feeding. Moreover, 38.00 percent of the farmers provided colostrums only after expulsion of placenta. This is in contradiction to the observations of Balusami (2015), who reported that only 13.00 percent of farmers provided colostrum after expulsion of placenta. Majority (90.00 %) of the dairy farmers of Panchmahal district did not follow vaccination for their calves. However, 35.00 percent of the respondents from Kheda district vaccinated their calves. The differences between two districts were significant ($p<0.01$). Result obtained for Kheda district is in agreement with earlier report of Maousami *et al*. (2013).

Existing milk marketing practices followed by respondents of Panchmahal and Kheda districts (Table 2) revealed that overall 40.50, 28.00 and 31.50 per cent of dairy farmers had high (above 10 liters), medium (5.1 to 10 liters) and low (1 to 5 liters) daily milk production, respectively. Farmers with lower daily milk production (1 to 5 liters) were more (49.00 %) in Panchmahal district. In comparison to this majority, (64.00 %) farmers from Kheda district had more than 10 liters of daily milk production. The differences observed were significant ($p<0.01$).This might be because of the different types of dairy animal's possessed by farmers of these two districts. Panchmahal district's farmers have mostly non-descript cows and buffaloes, whereas the Kheda district farmers kept crossbred cows and Surti/Mehsani buffaloes, which are well known for their high milk production.

Cent percent of the respondents from both the districts sold the milk to the dairy co-operative societies. Shyam Singh *et al. (*2013) reported similar milk marketing practice in Senapati district of hill region of Manipur. However, majority (85.50 %) of the dairy farmers retained 1 to 2 liters of milk for their household consumption. Around one third of the dairy farmers prepared curd and ghee like milk products for their household consumption. Majority (88.00 %) of the dairy farmers traditionally used the animal dung for making farm yard manure.

Table 1. Existing calf management practices of dairy animals in Panchmahal and Kheda districts

Sr. No.	Particulars	Dairy farmers			
		Panchmahal	Kheda	Overall	
		No.	No.	No.	%
1	**Cutting of naval cord**				
	Yes	85	58	143	71.50
	No	15	42	57	28.50
	χ^2 =17.28 p<0.01 Total	**100**	**100**	**200**	**100.00**
2	**Disbudding of calves**				
	Yes	23	52	75	37.50
	No	77	48	125	62.50
	χ^2 =17.94 p<0.01 Total	**100**	**100**	**200**	**100.00**
	By hot iron rod	23	39	62	31.00
	By chemical like KOH stick	00	00	00	00.00
	By electric dehorner	00	13	13	06.50
3	**Do they allow the dam to lick her calf after birth?**				
	Yes	100	87	187	93.50
	No	00	13	13	06.50
	χ^2 =13.90 p<0.01 Total	**100**	**100**	**200**	**100.00**
4	**Weaning of calves**				
	Yes	00	10	10	05.00
	No	100	90	190	95.00
	χ^2 =10.52 p<0.01 Total	**100**	**100**	**200**	**100.00**
5	**Cleaning of calves after birth**				
	Yes	95	77	172	86.00
	No	05	23	28	14.00
	χ^2 =13.45 p<0.01 Total	**100**	**100**	**200**	**100.00**
6	**Do they apply antiseptic to naval cord and ligate it?**				
	Yes	52	45	97	67.83
	No	33	13	46	32.17
	χ^2 =9.20 p<0.01 Total	**100**	**100**	**200**	**100.00**
7	**Colostrum feeding to new born calves**				
	Yes	100	100	100	100.00
	No	00	00	00	00.00
	Total	**100**	**100**	**200**	**100.00**
8	**Time of colostrums feeding**				
	Within 1 hour of birth	54	56	110	55.00
	1 to 3 hours of birth	32	25	57	28.50
	More than 3 hours	14	19	33	16.50
	χ^2 =1.66 NSTotal	**100**	**100**	**200**	**100.00**
9	**Colostrum feeding only after expulsion of placenta**				
	Yes	37	39	76	38.00
	No	63	61	124	62.00
	χ^2 =0.084 NS Total	**100**	**100**	**200**	**100.00**
10	**Vaccination of calves**				
	Yes	10	35	45	22.50
	No	90	65	155	77.50
	χ^2 =17.92 p<0.01 Total	**100**	**100**	**200**	**100.00**

Table 2. Existing milk marketing practices in Panchmahal and Kheda districts

Sr. No.	Particulars	Dairy farmers			
		Panchmahal	Kheda	Overall	
		No.	No.	No.	%
1	**Total milk production of farm**				
	1-5 liters	49	14	63	31.50
	5.1-10 liters	34	22	56	28.00
	Above 10 liters	17	64	81	40.50
	χ^2 =49.28 p<0.01 Total	**100**	**100**	**200**	**100.00**
2	**Amount of milk supplied to co operative dairy**				
	1-3 liters	46	10	56	28.00
	4-6 liters	29	19	48	24.00
	Above 6 liters	25	71	96	48.00
	χ^2 =47.26 p<0.01 Total	**100**	**100**	**200**	**100.00**
3	**Amount of milk kept for household consumption/family**				
	One liter	54	42	96	48.00
	Two liters	39	36	75	37.50
	More than two liters	07	22	29	14.50
	χ^2 =9.37 p<0.01 Total	**100**	**100**	**200**	**100.00**
4	**Preparation of milk products (ghee and curd) for household use**				
	Yes	30	37	67	33.50
	No	70	63	133	66.50
	χ^2 =1.099 NSTotal	**100**	**100**	**200**	**100.00**
5	**Utilization of dung**				
	Only cake making as fuel	00	12	12	06.00
	Only preparing FYM	92	84	176	88.00
	Cake +FYM	07	04	11	05.50
	Only preparing vermin compost	00	00	00	00.00
	FYM + Compost	01	00	01	00.50
	Only using in biogas plant	00	00	00	00.00
	χ^2 =14.18 p<0.05Total	**100**	**100**	**200**	**100.00**

Conclusion

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

Acknowledgement

We thank the Dean of the Faculty and the respondent dairy farmers for their support and cooperation in this study.

Conflict of Interest: All authors declare no conflict of interest.

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