STUDIES ON HEALTH CARE AND MILKING PRACTICES ADOPTED AT BUFFALO FARMS OF PERI URBAN AREA OF SURAT CITY, INDIA

Ghanshyam Prabhulal Sabapara[1,*] and Vishnubhai Bhikabhai Kharadi[2]

ABSTRACT

A field survey was undertaken to collect the health care and milking management practices opted by randomly selected 50 buffaloes farm owners in peri urban areas of Surat city and data were collected by using personal interview schedule. The present study indicated that regular vaccination and deworming practice adopted by 96% and 38% of the respondents, respectively. Only 20% of respondents did not adopted control of ecto-parasites practices. Only 38% of respondents treated their sick buffalo by veterinary officer. Majority (58%) of respondents did not followed grooming practice to their buffaloes. Sick buffalo isolated from healthy one was adopted by only 12% of respondents. All the respondents' clean udder and teats, wash their hands before milking and milked their animals at same place twice a day. Dry hand and full hand methods of milking was adopted by 24% and 18% of respondents, respectively. The use of oxytocin injection for letdown of milk after death of buffalo calf was adopted by 44% of respondents. Wipe the udder and teats after milking, teat dipping, testing for mastitis and teat canal sealing at the end of lactation was not practiced by any of the respondents.

Keywords: *Bubalus bubalis*, buffaloes, milking, health care, management practices, peri-urban

INTRODUCTION

India has world largest livestock sector consist of 11.6% livestock population. In India 57.83% of the world buffalo population which provide milk, meat and draught power so buffalo is considered as backbone of Indian rural economy (Anonymus, 2014). Inherent ability of buffalo to produce milk with high fat content over cow milk which contribute high price of milk in market. Gujarat is a key state in production of milk and milk marketing in India on co-operative dairy base system. Management practices of dairy animals affect the production performance and varies significantly among various agro-ecological areas. Adoption of improved milking practices enhance the production, assist to kept udder and teat in better condition and contribute to produce clean milk. Health care practices comprise protective measures like vaccination, deworming and timely treatments of sick animals to make proper health of animals which helps to maintain their productivity (Singh *et al*., 2007). So, livestock management practices adopted by dairy farmers in area is

[1]Department of Livestock Production Management, College of Veterinary Science and Animal Husbandry, Junagadh Agricultural University, Gujarat, India, *E-mail: gpsabapara@gmail.com

[2]Vanbandhu College of Veterinary Science and Animal Husbandry, Navsari Agricultural University, Gujarat, India

essential to ascertain the strengths and weaknesses of rearing systems and to frame appropriate intervention strategies (Gupta *et al*., 2008). Hence, the present study was taken to assess the health care and milking practices under peri-urban areas of Surat district.

MATERIALS AND METHODS

A field survey was undertaken in peri-urban areas of Surat city of Gujarat and data were collected from randomly selected 50 buffalo's farm owners who kept more than 10 buffaloes with its followers. For selection of respondents due care was taken to ensure that they were consistently scattered and truly denoted buffalo management practices prevalent in the area. The selected buffalo farm owners were single interviewed and the desired information was collected on health care and milking practices for buffaloes with the help of pre-designed and pre-tested interview schedule. Collected data were tabulated and analyzed as per standard statistical tools prescribed by Snedecor and Cochran (1994).

RESULTS AND DISCUSSION

Health care management practices

Health care management practices adopted by buffalo owners are presented in Table 1 and revealed that 96% respondents followed regular vaccination of their buffaloes against FMD and HS disease. This is suggestive of high level of awareness in buffalo keepers about protecting the animals by immunization. Present results are in similar line with the earlier findings of Varaprasad *et al*. (2013); Kumar (2015); Sabapara *et al*. (2015). However, present findings were contradictory to the earlier results of Rathore and Kachwaha (2009); Kumar *et al*. (2011) who reported that 18.75% and 14.17% of the respondents followed practiced to vaccinate their dairy animals. Only 38% respondents followed practice to deworming of their milch buffaloes at regular interval which is accordance with the earlier finding of Sabapara *et al*. (2015). The present findings are encouraging than the findings of Rathore et *al*. (2010); Sabapara *et al*. (2010) who found that about one fourth of the dairy farmers followed practice to deworming of their milch animals at regular intervals.

Majority (80%) of buffalo keepers adopted various practices like dusting, spraying and injectable drugs for control of ecto-parasites in study areas. The present results are comparable with earlier findings of Rathore and Kachwaha (2009). It was revealed that 90 per cent respondents had clean sheds which is similar with earlier findings of Chowdhry *et al.* (2008); Rathore *et al.* (2010). Only 38% respondents treated their sick buffaloes by qualified veterinarians. The present findings are encouraging than earlier findings of Meena *et al*. (2008); Sabapara *et al.* (2010); Sabapara *et al.* (2015) but lower than the earlier findings of Gill and Saini (2008); Chowdhry *et al.* (2008). Majority (98%) of the respondents washed buffalo's hind quarters after drop of placenta. The present finding was contrary to the earlier findings of Rathore *et al.* (2010) who found that only 18.5% of the respondents followed practice to washed cow's hind quarters after drop of placenta. Only 42% of the respondents followed grooming practices for their buffaloes. It might be due to lack of knowledge about advantageous effects of grooming. The present findings are encouraging than the earlier findings of Rathore *et al.* (2010) but contrary to the earlier results of Gill and Saini

(2008) who found that 92.67% of respondents were adopted grooming practice of their dairy animals. Only 12% of the respondents adopted to kept sick buffalo separately from healthy buffaloes. It might be due to lack of awareness of the buffalo keepers regarding isolation and segregation process to be followed in order to control the spread of contagious diseases in the herd or may be due to lack of proper availability of space. Similarly, Meena *et al*. (2008); Kumar *et al*. (2011) found that 6 and 9.58% of the respondents kept healthy animals separate from sick animals, respectively. However, present results are contradictory with the earlier results Rathore *et al*. (2010) who found that two third of the dairy animal owners were isolated their sick animals from healthy animals.

Milking practices

Milking management practices followed by buffalo owners are presented in Table 2 and revealed that cent percent of the respondents adopted two times milking at morning and evening which is similar line with earlier results of Kumar and Mehla (2011); Manohar *et al*. (2013); Sabapara *et al*. (2015). It was also found that all the respondents adopted to wash teats along with udder of milking buffaloes and washed their hands before milking which helped for clean milk production and keeping udder healthier in long time. Present findings are in line with the earlier findings of Chowdhry *et al*. (2008); Rathore *et al*. (2010); Sabapara *et al*. (2015). Wet hand milking adopted by 76% of the respondents which is supported with the earlier finding of Rathore and Kachwaha (2009). However, present finding was contradictory with the earlier finding of Malik and Nagpaul (1999) who found that 53.33% of the respondents had habit of dry hand milking. Dry hand milking is superior practice than wet hand milking, so that buffalo owners of surveyed area still need to increase their awareness for adopting dry hand milking practice. Only 18% of the respondents practiced full hand milking method of milking to their buffaloes. Present finding was in agreement with earlier the records of Deshmukh *et al*. (2009); Rathore *et al*. (2010); Kumar and Mishra (2011); Sabapara *et al*. (2015). The present finding was contradictory with the results of Varaprasad *et al*. (2013) observed that 82.10% of farmers followed full hand milking in Chittoor district of Andhra Pradesh. This might be due to lack of knowledge regarding full hand milking and easiness in practicing knuckling method. Hence, buffalo owners must be educated that knuckling is a wrong method of milking which may lead to teat injury and mastitis in long term in lactating buffaloes. It was also observed that 74% of the respondents followed stripping at the end of milking which is similar line with the results of Swaroop and Prasad (2009); Sabapara *et al*. (2015). However, present findings are lower than the findings of Rathore *et al*. (2010); Kumar and Mishra (2011); Manohar *et al*. (2013) who reported that 86.25, 94.17 and 88.75% of the respondents followed stripping at the end of milking, respectively. It might be due to the fact that dairy animal owners of these areas were more aware about advantageous effects of stripping at the end of milking. Wipe the udder and teats after milking was not adopted by any of the respondents in study areas. The present finding was similar with the earlier findings of Rathore *et al*. (2010); Kumar and Mehla (2011); Kumar and Mishra (2011); Manohar *et al*. (2013); Sabapara *et al*. (2015). This practice assisted to decrease the incidences of mastitis as milk is a very good media for the development of bacteria. Allowed the calves for suckling before milking was followed by 74% of the respondents. The present finding was lower

than the earlier findings of Gupta *et al*. (2008); Meena *et al*. (2008) who founded that more than 91% of the respondents allowed the calves to suckle before milking. However, Rathore and Kachwaha (2009); Rathore *et al*. (2010); Kumar and Mishra (2011) who observed that 73.75, 80.25 and 78.75% of respondents allowed the calves to suckle before and after milking, respectively. It might be due to the fact that respondents of these areas were not awake about beneficial effects of suckling before milking in dairy animals. About 56% of the respondents were offered concentrate feed and teat manipulation practice for letdown of milk after the death of calves which is similar with the earlier findings of Rathore and Kachwaha (2009); Rathore *et al*. (2010); Kumar and Mehla (2011). Milking of buffaloes at separate and dry place was not adopted by respondents in present study which is accordance with the earlier findings of Sabapara *et al*. (2015). However, Kumar and Mehla (2011) who reported that 70% of the dairy farmers milked their buffaloes at separate and dry place. It might be due to the fact that respondents of these areas were more aware for clean milk production practices. All of the buffalo owners used open mouth bucket for collection of milk during milking which is similar with the earlier findings of Rathore *et al*. (2010); Kumar and Mishra (2011).

Present study revealed that majority (72%) of the respondents followed practice of drying off their buffaloes for more than two months before calving. The present finding was supported by the earlier results of Chowdhry *et al*. (2008). Drying off lactating animals during advance stage of gestation preferably last two months before the start of subsequent lactation is an imperative aspect of milking management, particularly for high yielding dairy animals. Teat dipping after milking of buffaloes were not adopted by the respondents which is similar with the earlier finding of Kumar and Mehla (2011). This might be due to the lack of knowledge of the respondents about teat dipping in relation to kept healthy condition of udder in milking animals. Only 36% of the respondents washed their milking utensils by using hot water which is well supported by the earlier findings of Rathore and Kachwaha (2009); Kumar and Mishra (2011).

Disposal of milk through village primary milk co-operative society as well as middle man was adopted by 92% of respondents which is in accordance with the earlier findings of Chowdhry *et al*. (2008) in Banaskantha district of North Gujarat. However, the present findings are contradictory with the finding of Gupta *et al*. (2008) in Rajasthan. The study area has well developed network of Sumul co-operative dairy. So easy disposal of milk through the network of co-operative dairy inspires respondents for acceptance of more and more buffalo rearing practices. Thus, buffalo owners got financial remunerations of white revolution.

Mastitis testing in milking buffalo was did not adopted by any respondents which is similar to the earlier findings of Sabapara *et al*. (2015); Sabapara *et al*. (2016) in South Gujarat. However, present findings was contradictory with the earlier results of Gill and Saini (2008) who found that 44% of the respondents adopted practices to detect mastitis in milking animals of Ludhiana district of Punjab. The test is standard qualitative and easy to conduct by dairy farmers but this technique had not reached at farmers' level in study areas. It might be due to the lack of knowledge among the buffalo keepers of study areas regarding detection of subclinical form of mastitis. Teat sealing at end of lactation is important practice to maintain good udder health which was not adopted by any of the respondents in study areas. Present findings

Table 2. Milking management practices.

Practices	Type	Frequency	Percent
Frequency of milking	Twice	50	100
	Thrice	00	00
Splashing of water on teat/udder before milking	Yes	50	100
	No	00	00
Washing of hand before milking	Yes	50	100
	No	00	00
Habit of milking	Dry hand	12	24
	Wet hand	38	76
Milking method	Full hand	09	18
	Knuckling	39	78
	Stripping	02	04
Stripping at the end of milking followed	Yes	37	74
	No	13	26
Wipe the udder and teats just after milking	Yes	00	00
	No	50	100
Suckling of calf followed at	Before milking	37	74
	After milking	12	24
	Both times	01	02
If death of calf occur then practice followed for let-down of milk	Offer concentrate feed and teat manipulation	28	56
	Use of oxtyocin injection	22	44
Milking place	At the same place	50	100
	At separate and dry place	00	00
Milking pail used	Open mouth bucket	50	100
	Scientific milking pail	00	00
Drying period followed	>2 months	36	72
	<2 months	14	28
Teat dipping followed	Yes	00	00
	No	50	100
Milking utensils clean by	Hot water	18	36
	Tap water	32	64
Milk disposal by	Co-operative society	04	08
	Co-operative society +Middle man	46	92
Test for mastitis diagnosis	Yes	00	00
	No	50	100
End of lactation sealing of teat canal followed	Yes	00	00
	No	50	100

Table 1. Health care management practices.

Practices	Type	Frequency	Percent
F.M.D. and H.S. vaccination followed	Yes	48	96
	No	02	04
Deworming of buffalo adopted	Regular	19	38
	Occasional	30	60
	Not practiced	01	02
Control of ecto-parasites practice	Followed	40	80
	Not followed	10	20
Sanitary condition of shed / shelter / standing place	Clean(dry)	45	90
	Dirty(wet)	05	10
Sick animal treatment done by	Livestock inspector	31	62
	Veterinary doctor	19	38
Wash of hind quarters after drop of placenta followed	Yes	49	98
	No	01	02
Grooming practice followed	Yes	21	42
	No	29	58
Isolation of sick buffalo from healthy	Yes	06	12
	No	44	88

was similar with earlier findings of Rathore and Kachwaha (2009); Rathore *et al*. (2010); Kumar and Mishra (2011); Manohar *et al*. (2013). It might be due to lack of awareness of the dairy farmers in different study areas of India.

Based on findings of present study it can be concluded that the overall adoption of improved health care and milking practices of buffalo's owners of peri-urban areas were quite satisfactory. However, there is still scope of improvements in adoption of some practices by respondents through organizing awareness camp, demonstrations, kisan ghosthi and exposure visits by various government organizationa and NGOs.

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