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Livestock Management Practices followed by Kandi Farmers of Hoshiarpur District of Punjab, India

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A B S T R A C T

A study was conducted to identify common management practices followed by farmers in *Kandi* area. A total of 100 famers from four different villages of Block Talwara were selected and information was collected through a pre-tested schedule. It was observed that anestrous (56 %) and repeat breeding (31 %) were the two most common problems of the dairy animals of the area. Snake bite and diarrhea (any cause) was identified as the most common reasons for calf mortality. Ectoparasites such as ticks were reported by most of the farmers (58 %) on their dairy animals. Majority of the farmers (69 %) used to feed colostrum to their calves after placental shedding and milked their animals with thumb pressing/knuckling. Majority of them (69 %) also got their animals vaccinated against prevalent infectious diseases. Most of the farmers (72%) were not aware of deworming practices.

Introduction

Livestock is an essential part of rural economy and is an important source of livelihood in the rural areas. It also helps in meeting nutritional requirement of farmer families in rural areas (Sabapara *et al.*, 2010). Punjab is known for bringing green revolution in the country. However, *Kandi* area (sub mountainous zone) is very different from rest of Punjab as agriculture in this area is dependent upon rain. Because of less availability of fertile land, there is acute scarcity of forages for animals. Despite vital importance of livestock in the livelihood of farmers, the productive ability of these animals is quite low in the area. Several

factors are responsible for low production. Therefore, understanding of the livestock management practices followed by farmers is necessary to identify the strengths and weaknesses of the rearing systems in order to formulate suitable intervention policies. Hence the present investigation was undertaken to study the knowledge level of farmers regarding various livestock management practices followed by the farmers in the *Kandi* area of Hoshiarpur district of Punjab.

Materials and Methods

Present study was conducted in four villages (viz.-Bhatoli, Sathwan, Nathowal and Bhadyaran) falling in *Kandi* area of Block Talwara, District Hoshiarpur. From each village, twenty five farmers having dairy animals were selected randomly and information regarding various management practices was collected by visiting them personally. A pre-tested schedule was used for the purpose. The schedule contained different sections pertaining to personal details of the farmer, various management practice followed by them including housing, feeding reproduction, vaccination, deworming, disease status or any other problem. The data was, then, transferred to a data sheet and was analyzed.

Results and Discussion

Breeding management practices

The breeding management practices followed by livestock farmers of *Kandi* area of Hoshiarpur district has been presented in Table 1. All the farmers of the *Kandi* area relied on symptoms for detecting heat in dairy animals. Similar results were reported by Patel *et al.,* (2014). More than half of the farmers (56 %) considered vaginal mucus discharge, bellowing, and frequent urination as signs of heat. Similar findings were reported by Sreedhar *et al.,* (2017), Patel *et al.,* (2014), Tanwar *et al.,* (2012) and Brar and Nanda (2004).

Similarly, majority of farmers (63 %) were dependent on natural service for breeding purposes. Only 22 per cent of the farmers practiced artificial insemination for their animals. The results are in consonance with those reported by Tanwar *et al.,* (2012), Sinha *et al.,* (2010) and Sreedhar *et al.,* (2017). Only one report (Prajapathi *et al.,* 2015) stated that 88 per cent of rural farmers and 70 per cent of urban farmers used scientific method of artificial insemination in their dairy animals. The higher use of AI in the last report could be due to greater awareness of the farmers because of presence of Agricultural University in the district from where the respondents were interviewed.

Majority of farmers (43 %) allowed their animals bred within 12-18 hours of heat detection. Only 35 per cent famers delayed breeding beyond 18 hour of heat while rest of the farmers bred their animals immediately after detecting heat symptoms. Majority of the farmers, thus, have awareness of right time of insemination/natural service. Similar results were reported by Sreedahar *et al.,* (2017) and Tanwar *et al.,* (2012).

Majority of the farmers were reluctant to get their animals checked for pregnancy status by any Livestock Inspector or Veterinarian. The farmers were of the view that the procedure for pregnancy diagnosis was not safe for their animals. Most of the animals tended to abort following pregnancy checks. This could be because of the fact that most of such pregnancy checks might be performed by layman inseminators.

For better profitability, it is necessary that animal should return to heat within a period of 3 months following parturition. In the present

study, it was observed that most of the animals took more than 5 months to exhibit heat signs. The longer postpartum anoestrous period could be due to low nutritional status of the animal as there is severe shortage of green fodder available in the area and only 19 per cent farmers supplemented mineral mixture to their animals while only 20 per cent farmers used to feed uromin licks to the their animals during study period. Similar findings were reported by Sreedhar *et al.,* (2017), however, Gupta *et al.,* (2008) in their study reported that higher proportion of dairy animals were rebred within 2-3 months after parturition which is contrary to our findings.

Majority of the farmers used to dry their pregnant cows 2-5 months before expected date of calving. Anestrous (56 %) and repeat breeding (31 %) were the two most common problems faced by the farmers of *Kandi* area. The high incidence of these two problems could be due to imbalance in the feeding of dairy animals leading to various deficiencies.

Table.1 Breeding management practices followed by farmers in Kandi area

S.No.	Parameter	Total (N=100)	Percent
1.	**Method of Heat Detection:** Symptoms Teaser Bull	 100	 100
2.	**Symptoms of heat detection:** Mucus discharge Mucus + Bellowing Mucus + Bellowing + Frequent urination	 18 26 56	 18 26 56
3.	**Breeding of females:** A.I. Natural service Combination of both	 22 63 15	 22 63 15
4.	**Insemination time:** Immediately after heat Within 12-18 hr After 18 hr	 22 43 35	 22 43 35
5.	**Breeding after calving:** 2-5 months >5 months After 1year	 18 63 19	 18 63 19
6.	**Pregnancy diagnosis:** Practiced Not practiced	 18 82	 18 82
7.	**Anestrous**	56	56
8.	**RepeatBreeding**	31	31
9.	**Retention of Placenta**	14	14

Table.2 Health care management practices followed by farmers in *Kandi* area

S No	Parameter	Total (N=100)	Percent
1.	**Vaccination status**		
	Yes	81	81
	No	19	19
2.	**Frequency of Vaccination**		
	Every year	84	84
	Alternate year	16	16
	Once in 2-3 years		
3.	**Ectoparasite present in the herd**		
	Ticks	58	58
	Ticks and Lice	22	22
	Mosquitoes		
	Flies		
	No ectoparasites	20	20
4.	**Control for ectoparasites**		
	Followed	88	88
	Not followed	12	12
5.	**Method of application of acaricide**		
	Scrubbing	40	40
	Spraying	0	0
	Pour on	22	22
	Scrubbing and pour on	26	26
6.	**De-worming in dairy animals:**		
	Practiced	28	28
	Not practiced	72	72
7.	**De-worming in calf:**		
	Practiced	20	20
	Not practiced	80	80
8.	**Naval cord disinfection:**		
	Yes	18	18
	No	82	82
9.	**Treatment of sick animal by:**		
	Local knowledge	08	08
	Livestock inspector	14	14
	Veterinary officers	22	22
	Veterinary officer and Livestock Inspector	56	56
10.	**Use of mineral mixture**		
	Yes	19	19
	No	81	81
13.	**Use of Uromin Lick**		
	Yes	20	20
	No	80	80
14.	**Making of Silage/Hay**		
	Yes	0	0
	No	100	100
15.	**Colostrum feeding to calves**		
	Within 2 hours of birth	13	13
	2-8 hours of birth	18	18
	After shedding of placenta	69	69
16.	**Type of milk feeding**		
	Suckling	94	94
	Hand feeding	6	6
17.	**Weaning age**		
	1-2 months	11	11
	2-3 months	29	29
	>3 months	52	52

Table.3 Milking management practices followed by farmers in Kandi area

S No	Parameter	Total (N=100)	Percent
1.	**Washing of teat before milking**		
	Yes	77	77
	No	23	23
2.	**Washing hand before milking:**		
	Yes	90	90
	No	10	10
3.	**Milking methods:**		
	Full hand	24	24
	Knuckling	69	69
	Stripping	07	07
4.	**Post milking teat dip**		
	Yes	13	13
	No	87	87
5.	**Testing of mastitis control:**		
	Yes	0	0
	No	100	100
6.	**Disposal of milk:**		
	Co-operative Society	0	0
	Vendors/ Middle man	4	4
	Home use	96	96
7.	**Milk yield**		
	No milk yield	05	05
	<2 litre	19	19
	2-5 litre	54	54
	5-8 litre	14	14
	>10 litre	08	08

Table.4 Housing management practices followed by farmers in Kandi area

S.No.	Parameter	Total (N=100)	Percent
1.	**Direction of Shed**		
	East west	26	26
	Others	63	63
	No shed	11	11
2.	**Height of roof**		
	>10 feet	52	52
	<10 feet	33	33
	No shed	11	11
3.	**Type of roof**		
	Thatched	18	18
	Asbestos/Tin	59	59
	No shed	11	11
4.	**Floor area per animal**		
	Sufficient	70	70
	Insufficient	58	58
5.	**Type of floor**		
	Pucca	25	25
	Bricks	07	07
	Kutcha	54	54
6.	**Level of floor**		
	Sloppy	10	10
	Levelled	23	23
	Uneven	67	67
7.	**Cleanliness of floor**		
	Clean and dry	38	38
	Wet floor	62	62
8.	**Ventilation**		
	Good	62	62
	Fair	31	31
	Poor	07	07
9.	**Tree Shade**		
	Available	78	78
	Not available	22	22
10.	**Cooling in Summer**		
	Yes	90	90
	No	10	10
11.	**Provision of water for drinking** Purpose		
	Sufficient		
	Insufficient	67	67
		33	33
12.	**Provision of Bedding**		
	Yes	22	22
	No	78	78
13.	**Exercise**		
	Free all the time	0	0
	Tied all the time	84	84
	Tied but moved during day night shift	16	16
14.	**Grazing done**		
	Yes	16	16
	No	84	84

Ahmet *et al.,* (2008) reported that the major possible cause of reproductive failure in dairy animals is the absence of mineral mixture in the concentration ration. It is very well known that proper feeding of animals is important for maintaining proper reproductive status of dairy animals (Venkatisubramanian, 1994, Singh and Brar, 2008). Poor quality of semen, untrained inseminators and farmer's inability to present the animal at proper time of heat for artificial insemination could also lead to repeat breeding in dairy cows (Meena and Malik, 2009, Venkatisubramanian, 1994, Venkatisubramanian and Rao, 1993).

Health care management practices

The results of health care management practices followed by farmers in *Kandi* area has been presented in Table 2. Around 80 per cent of the farmers got their animals vaccinated regularly for Foot and Mouth Disease (FMD) and Haemorrhagic Septicaemia (HS) at the Government Veterinary Hospitals. Similarly, high level of vaccination in animals in rural areas was also reported in other studies (Patel *et al.,* 2014, Sinha *et al.,* 2010 and Prasad *et al.,* 2002).

Deworming of dairy animals is an important practice as it protects them from endoparasites, however, in the present study, only very few farmers tended to deworm their animals and calves. This could be due to lack of awareness regarding the harmful effect of parasitic load on animal body. Similar findings of lower deforming practices in dairy animals and calves was also reported by Patel *et al.,* (2014) and, Singh and Singh (2000).

Naval cord disinfection in young calves is very important to protect them from various diseases. This practice was also followed by very few farmers (18%). It could also be due to lack of awareness. Similar results were reported by Patel *et al.,* (2014).

Majority of farmers reported presence of ectoparasites (ticks and lice) on their animals and eighty eight per cent of the farmers had adopted various methods (such as use of acaricides as scrub or pour on) to control the ectoparasites. However, Patel *et al.,* (2014) reported that only 11 per cent of the tribal farmers of Narmada Valley used to apply various acaricides for ectoparasite control in their animals. This could be due to lack of awareness in tribal farmers.

Inadequate feeding of colostrum to calves remains one of the most serious hazards for calf welfare (European Food Safety Authority, 2006). Maximum absorption of immunoglobulins occurs during first four hours of birth and it decreases rapidly after 12 hours (Weaver *et al.,* 2000).

In the present study, it was observed that 69 per cent of the farmers were feeding colostrum to the calves after the shedding of placenta. It is a very common myth among the farmers of the area that if colostrum is given to calves before the shedding of placenta, toxins will be transferred to calf's body. Therefore, the farmers wait for the shedding of placenta and feed the calves after the shedding. Due to this reason, incidence of diarrhea in calves is very high and a large number of farmers cited diarrhea as the reason of death in calves.

Another important reason for calf mortality identified in this study was the snake bite. Most of the animals including calves were tethered inside the sheds that have no boundary wall. The snake, thus, have easy access to dairy animals and their calves.

Milking management practices followed by farmers in Kandi area

Perusal of Table 3 reveals that 69 per cent of farmers were following knuckling (wrong method) whereas only 24 percent of the

farmers were practicing full hand milking method for the milking of animals. Similar finding of high rate of knuckling practice was reported by Patel *et al.*, 2014, Sinha *et al.*, (2010). Low percentage of full hand milking reported in our study could be due to lack of awareness regarding the correct method of milking. However, Bashir and Kumar (2013) reported that 76 per cent of the farmers in Kerala were using full hand method of milking. High rate of following full palm method of milking in Kerala could be due to high rate of literacy.

Majority of farmers washed their hands (90%) and teats (77%) before milking, however, only 13 per cent were practicing post milking teat dip. Similar results of post milking teat dipping were also reported by Patel *et al.*, (2014).

Low level of milk production (2-5 litres/ day) was reported by 54 per cent of the farmers and it could be due to non-descript nature of their breed and scarcity of green fodder in the area. Only 14 per cent of the farmers reported a milk yield of 5-8 litres/day. Most of the famers were using milk for their home use only.

Housing management practices followed by farmers in Kandi area

Majority of farmers (63%) had no idea about the direction of an ideal shed. Only 26 per cent of farmers had constructed animal sheds in east-west direction while 11 per cent farmers did not have any shed at all. For proper ventilation it is necessary that height of the shed should be no less than 10 feet and in our study 52 per cent of the farmers have their sheds for animal house greater than 10 feet, which will help in keeping good ventilation in their sheds (Table 4). Regarding the material of the shed 71 per cent of the respondents were having their sheds made of Asbestos/Tin, while 18 per cent of the farmers were having their shed made of thatched roof. Sixty eight per cent of the farmers were having kutcha type of floor in their sheds and 25 per cent of the farmers were having pucca floors and the level of floor was uneven in 67 per cent of farmers shed and the floor was wet in majority of the farms depicting the lack of awareness of the farmers regarding the cleanliness of farms which will help in keeping the animals healthy. Ventilation was good (62 %) in most of the farms as large number of trees are present (78 %) along the sheds of the animals which helps in keeping the shed of the animal cool and also preventing it from direct sun light. Eighty four per cent of the farmers keep their animals tied all the time and eighteen per cent of the farmers send their animals for grazing outside. Similar findings regarding the housing management practices were reported by Meena *et al.*, (2007) and Singh *et al.*, (2015). From the present study it was concluded that farmers are not fully aware about various livestock management practices and further trainings are required for the farmers to increase their knowledge and awareness regarding the scientific ways of livestock rearing.

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