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Common Animal Husbandry Practices by the Farmers of Indo-Bangladesh International Border Areas of Assam, India

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A B S T R A C T

The present study was conducted in higher cattle concentrated Kamarpara, Kukurmara and Mankachar villages falling in the Indo Bangladesh International Border areas out of the total of fifteen such villages in Dhubri District, Assam. Thirty six farmers each having at least two yielding cattle/buffaloes in those villages was selected randomly making the total sample size 108. Socio- personal, communicational, economic and psychological and managerial data were collected on a reliable (r=0.93) and valid (content validated) interview schedule specially prepared for this purpose. Data were collected from January to March, 2012 personally by the researcher quite a large number. Majority of farmers (48.15 per cent) had low followed by medium (36.11 per cent) and high (15.74 per cent) level of adoption practices in breeding, although majority of them (68.52 per cent) occupied medium level of adoption category followed by 21.29 per cent in high level and 10.19 per cent practicing low level of scientific feeding practices. As high as about 90.00 per cent of the respondents occupied medium to high category of distribution on feeding. More than two third (78.70 per cent) of the respondents managed livestock farm in better locations. A large majority (83.33 per cent) of the respondents had Kutcha houses for their livestock. About 90.00 per cent of farmers disinfecting their farm once a week. Except a very few almost all (93.57 per cent) the farmers had better source of water supply. A large majority of the respondents (94.44 per cent) had electricity supply in their farms. Nearby market was used mostly/regularly by 98.15 per cent of the farmers for marketing purpose. In the present study, majority of the farmers (68.51 per cent) maintained medium level of management/health care followed by 21.30 per cent and 10.19 per cent farmers maintaining high and low level of management/health care. About 90.00 per cent of the respondents fall in the medium to high category of management/health care practices which considering the difficulties, looked healthy.

Introduction

India is blessed with a high number of differently valued livestock wealth. The country has the largest population of cattle and buffaloes in the world and all the breeds are admired for their heat tolerance and inherent resistance to many diseases including ability

to thrive under different climatic condition. India has about 16.21 per cent of the world's cattle and 58.21 per cent of the world's buffalo population. In India 199.08 million cattle and 105.34 million buffaloes are available (18th Livestock Census, 2007) with an increasing trend till the first quantum of the present century. Within estimated 529.7 million livestock heads, India accounts among for the largest livestock population in the world distributed over 100 million households in approximately 6,38,598 villages (Basic Animal Husbandry Statistics, Govt. of India, 2010). Contribution of livestock sector in India has provided sustainability and stability to the national economy. This sector is the most popular and surest insurance against crop failure for more than 85 percent of the landless and marginal farmers of the country. It has its own strength. Against the highly supported the crop production, the livestock sector has maintained a steady growth rate of 6.6 per cent over the last three years.

India is the top milk producing nation in the world contributing about 15 per cent to the global milk pool. Total milk production in India, in the year 2013 is 130 million tones. In ongoing decade (2010 onwards) the compound growth rate of milk production has been more than 2.5 per cent per annum. About 70 million farm families, one out of every two rural households, are involved in dairying. In India (Report of National Sample Survey 2006-07), the contribution of milk alone was Rs. 1,44,386 crores and was higher than wheat (Rs. 66,791 crores) and paddy (Rs. 85,032 crores) together. The contribution of livestock to the economy was estimated to be Rs. 13,02,330 million mainly from milk and milk products (69.38 per cent), meat and meat products (13.62 per cent), poultry (9.1 per cent) and dung for fuel (7.9 per cent) according to Sastry and Thomus (2005). Livestock is the single most income generating endeavor for millions of landless and marginal farmers. Socially it is very significant due to the multi functionality of use including the socio-cultural functions. Ethnic, cultural, religious and economic values of livestock in Assam are also growing fast over the years due to rapid population inflation- large majority of whom are non-vegetarians. Further growing openness to consume any type of livestock produce and products by all groups of people has geared up the livestock sector to a new length, making the pig population in the country highest in Assam.

According to Livestock Census, Assam (2007), the cattle population constitutes the largest group, numbering 10.36 million where 9.67 million is local and 0.69 million is cross bred followed by the goat population 4.37 million, pig 2.13 million and the buffalo population is 0.52 million. Keeping the above points in view the present study was conducted to see the Animal Husbandry practices followed by Farmers of Indo-Bangladesh International Border areas of Assam.

Materials and Methods

The present study was conducted in the villages adjacent to Indo-Bangladesh International border areas of South Salmara Mankachar Sub- Division of Dhubri district of Assam during January to March, 2012. Out of the total fifteen villages which were adjacent to Indo-Bangladesh International border, three villages three villages namely Kamarpara, Kukurmara and Mankachar were chosen depending their higher concentration of livestock population and proximity to the international border. Later, a further list of all the farmers having at least two cattle/buffaloes in those selected areas was prepared separately and finally thirty six farmers each were selected randomly from the villages making the total sample size 108. Depending on the

objectives set, an interview schedule containing socio personal, communicational, psychological and economic variables was constructed in consultation with experts, field functionaries and social activists. The same was pre-tested for its reliability (split half method r = 0.93) and validity (content validation). The finally worked out interview schedule had inventories developed for psychological variables, different practices in livestock rearing like Breeding, Feeding, Housing, Management / Health care and Marketing. The respondents were asked to place their agreement or disagreement in different degrees by putting a checkmark (✓) against the statements provided to them. The interview was conducted personally by the researcher. Depending on the response pattern the minimum and maximum obtainable scores were assigned. They were assured that the information would be used for the purpose of research only. Data thus collected were scored, tabulated, compiled and subjected to different statistical analysis as per the method of Snedecor and Cochran (1994) to attain the set objectives of the study.

Results and Discussion

Breeding

From the present study it was observed that as high as 48.15 per cent farmers had low level of adoption in breeding practices and 36.11 per cent of respondents had medium level of adoption in breeding. While the rest 15.74 per cent of farmers had high level of adoption practices relating to breeding (Table 1). Table 2 revealed that maximum respondents did not practice pregnancy diagnosis regularly but occasionally they used to go for pregnancy diagnosis (60.19 per cent). About 9.26 per cent respondents practiced selective natural service. No respondent practiced A.I and record keeping of heat of the animal. Although low, the activities which were done in "mostly" level were "indiscriminate natural service", "selective natural service", "record of heat cycle", "pregnancy diagnosis" and "identification of animal in heat" with the respective frequencies of 41.67, 53.70, 25.93, 12.04 and 31.19 per cent respectively. The animals were almost reared under zero to low input conditions but there was a tendency of the respondents to remain adhered to the good breeding practices. Similar findings were also reported by Rahman *et al.,* (2008). One would have definitely preferred the farmers to adopt the artificial insemination for improvement of their livestock. But the fact remained that there were some other associated factors getting considered which might have been closely related to their lifestyle and agricultural activities. Improved livestock essentially meant intensive care, labour engagement and proper marketing including expenditures. Such a condition was never helpful for the farmers for innovation of artificial insemination. Similar findings were also reported by Deka *et al.,* (2007).The other areas as mentioned earlier like selective natural service, record of heat cycle, pregnancy diagnosis and identification of animal in heat definitely revealed the kind of urgency the farmers possessed in their mind for the sake of their livestock in case of breeding. Similar findings of mental concern were also reported by Deka *et al.,* (2007).

Feeding

A good number of the respondents (68.52 per cent) practiced medium level of adoption followed by 21.29 per cent practicing high level and 10.19 per cent practicing low level of scientific feeding practices. Table 3 indicated that, regularly and importantly attended activities in feeding practices were "special feeding during ill health" (20.37 per cent), "colostrum feeding to the calves" (18.52 per cent), "special diet while in lactating period" (12.96 per cent), "special diets to

pregnant animal" (9.26 per cent) and "concentrate feeding during ill health" (8.33 per cent). As high as about 90.00 per cent of the respondents occupied medium to high category of distribution on feeding with very low scores indicating that the livestock farmers were aware of importance of feeding but not affording the same. In the present study, it was found that the respondents used to rear their livestock on zero input bases i.e on scavenging system with or without any supplement. At the best they might have been supplied with the kitchen waste or the agriculture produce management process's byproducts, available in abundance and enough of natural vegetations as feed for livestock. Similar findings were also reported by Borah (2012) when he carried out his study on livestock rearing in fringe villages of forests in Assam. So, from the finding it could be very simply derived that the livestock farmers took care of their animals with respect to feeding only when there was some extra pathological or physiological demand of the animal for feeding, that they supplied feeds to their livestock. Otherwise they never attended their livestock from the feeding point of view.

Housing

Location of livestock farm

More than two third (78.70 per cent) of the respondents managed livestock farm in better location followed by 16.67 per cent and 4.63 per cent managed their livestock farm in lowly and moderate liked locations respectively. Going by the trends of livestock rearing in the areas of the international borders of Assam with Bangladesh, this finding was rather a contrast. As in all other areas, the rearing patterns of livestock almost always took a back seat whereas in case of location, it was a different picture. That might have been because of two major considerations. One, mostly the livestock keepers used to make their livestock more secured and safe and that was the reason that they kept their animals at the best possible locations including keeping in front of their own eyes. Secondly, it might have been also because they used their livestock for the field work etc. So, in view of convenience they reared their animals in good locations excepting better looking after for better use of animal force in field. Other incremental factors like fear from thieves, inability to sell animals from bad location and also disease resistance etc. making the things to move other ways could not be ruled out. Similar findings were also reported by Mishra *et al.,* (2009).

Materials used for construction of livestock farm

Overwhelming majority (83.33 per cent) of the respondents using wood and bamboo for construction of their livestock farms was understandable, because the livestock farmers did not rear their animals commercially. Income from livestock was probably never thought unless the respondents faced some construed situations. As the worth of livestock was never considered very seriously, the matters relating to their needs also got a back seat. Similar findings in similar situations were also reported by Borah (2012) in his studies on fringe area villages in Assam.

Type of housing

A large majority (83.33 per cent) of the respondents had Kutcha houses which were also considered an outcome of the reasons stated above with similar justifications (Table 4).

Frequency of disinfecting the farm

Disinfection of farm from time to time is an essential duty not only for the farm animals but also for the household members dealing with the livestock.

Table.1 Profile of the respondents on the basis of their socio-personal scores

Sl. No.	Traits	Mean	Standard Deviation	Range	Low	Medium	High
1.	Breeding	8.83	1.78	3-12	52(48.15) ≤7	39(36.11) 8-9	17(15.74) 10
2.	Feeding	6.00	3.49	1-18	11(10.19) ≤2	74(68.52) 3-8	23(21.29) ≥9
3.	Source of water supply	2.91	0.42	1-3	5(4.63) ≤2	0 2.1-2.9	103(95.37) ≥3
4.	Housing	9.54	1.10	6-12	18(16.67) ≤8	5(4.63) 9	85(78.70) ≥10
5.	Management/ Health care	15.04	1.98	6-19	11(10.19) ≤13	74(68.51) 14-16	23(21.30) ≥17
6.	**A.H. pattern**	**28.83**	**6.00**	**18-48**	**10(9.26) ≤22**	**75(69.44) 23-33**	**23(21.30) ≥34**

Table.2 Distribution of the respondents on different practices in breeding

Sl. No.	Areas	Regularly	Mostly	Occasionally
1.	Indiscriminate natural service	1 (0.93)	45 (41.67)	62 (57.41)
2.	Selective natural service	10 (9.26)	58 (53.70)	40 (37.04)
3.	Artificial insemination	-	-	50 (46.30)
4.	Record of heat cycle	-	28 (25.93)	65 (60.19)
5.	Pregnancy diagnosis	5 (4.63)	13 (12.04)	65 (60.19)
6.	Identification of animal in heat	7 (6.49)	38 (31.19)	33 (30.56)
7.	Repeating A.I. after a gap of few hours to ensure pregnancy in case of (Name of the animal).	-	-	21 (19.44)

(Figures in the parenthesis indicate percentage)

Table.3 Distribution of the respondents on different practices of feeding

Sl. No.	Areas	Regularly	Mostly	Occasionally
1.	Concentrate feeding during ill health	9 (8.33)	-	4 (3.70)
2.	Special feeding during ill health	22 (20.37)	56 (51.85)	1 (0.93)
3.	Special diets to pregnant animal	10 (9.26)	44 (40.74)	3 (2.78)
4.	Special diet while in lactating period	14 (12.96)	23 (21.30)	1 (0.93)
5.	Colostrums feeding to the calves	20 (18.52)	-	2 (1.85)
6.	Concentrate + Premix feed	1 (0.93)	1 (0.93)	10 (9.26)
7.	Providing kitchen waste regularly	-	1 (0.93)	5 (4.63)
8.	Feeding twice a day to all animals with concentrate	1 (0.93)	3 (2.78)	8 (7.41)
9.	Feeding twice a day to all animals with concentrate	-	2 (1.85)	8 (7.41)
10.	Providing mineral mixture from time to time	1 (0.93)	37 (34.26)	22 (20.37)
11.	Any other (Cattle feed)	-	-	4 (3.70)

(Figures in the parenthesis indicate percentage).

Table.4 Distribution of respondents on materials used for construction of farms

Sl. No.	Materials used	Frequency	Percentage
1.	Wood and bamboo	90	83.33
2.	Semi concrete	13	12.04
3.	Concrete	5	4.63

Table.5 Distribution of respondents on mode of marketing livestock and products

Sl. No.	Mode of selling	Mostly/Regularly	Sometimes	Occasionally
1.	Butchers	-	-	81 (75.00)
2.	Nearby market	106 (98.15)	1 (0.93)	-
3.	Vendors	12 (11.11)	9 (8.33)	64 (59.26)
4.	Others	4 (3.70)	-	(3.70)

(Figures in the parenthesis indicate percentage)

Table.6 Distribution of respondents on different areas of management/health care

Sl. No.	Statement	Mostly	Sometimes	Occasionally
1.	Castration of male animal	48 (44.44)	14 (12.97)	32 (29.63)
2.	Deworming	27 (25.00)	40 (37.04)	38 (35.19)
3.	Vaccination	9 (8.33)	40 (37.04)	38 (35.19)
4.	First aid treatment during emergency	99 (91.67)	2 (1.86)	6 (5.56)
5.	Isolation of sick animal or quarantine of new animal	25 (23.15)	46 (42.60)	33 (30.56)
6.	Self-management of sick animal	56 (51.86)	13 (12.04)	33 (30.56)
7.	Expenditure on health care/Management(monthly) a) Less than Rs.500/	92 (85.19)	11 (10.19)	-
8.	Expenditure on health care/Management(monthly) b) Less than 1000/	1 (0.93)	87 (80.56)	8 (7.41)
9.	Expenditure on health Care/management (monthly) c) More than Rs.1000	-	-	95 (87.96)

(Figures in the parenthesis indicate percentage)

It was under such assumption that disinfection frequency of the farms was taken up for study in the present investigation. It was a rather healthy habit that about 90.00 per cent of farmers disinfected their farm once a week while 10.19 per cent of farmers disinfected their farm more than twice a month. This scenario could be considered as healthy and welcoming in view of the fact that the livestock rearing pattern otherwise was very casual. This might have been due to the heavy workload the cattle heads had to accept in the international border areas of Assam with Bangladesh. In absence of special care for feeding as found in this study, there had to be other areas strong to keep the livestock healthy and workable. On the other hand, it was also found that the housing of animals

was always in well placed areas indicating along with or nearer to the residential houses. It might be in fear of diseases getting transmitted from animals to human beings also that the livestock raisers took extra care for disinfecting the sheds quite regularly, some of which were attached to their residences.

Source of water supply

Sources of water could always be a cause of concern for both human as well as animal dwelling. The people in the riverine areas knew it much better than any other else. The present area being again a riverine area, they were extra cautious about the source and quality of potable water for themselves as well as for their livestock. Except a very few almost all (93.57 per cent) of the farmers had better source of water supply while the rest 4.63 per cent farmers had poor source of water supply. The reasons for being so were the same as mentioned above in case of disinfection of the farm houses/sheds.

Electricity in the farm

Electrification to the farm complexes could be a high standard for many areas in the country considering the yester years. But it should not be considered so in the context of the present situation. Because, the Government had given tremendous importance to electrification of all villages in the country including in the state of Assam. Secondly, the areas of international borders always needed sound electricity supply system for the security of the nation. Further, the livestock rearing system was very integral as far as the housing system was concerned. Therefore all these situations culminated into better electric provisions in the farm houses of livestock in the international border areas of Assam with Bangladesh. As such a large majority of the respondents (94.44 per cent) had electricity in their farm while the rest 5.56 per cent respondents did not have electricity in their farm.

Marketing

Nearby market was used mostly/regularly by overwhelming majority of the farmers (98.15 per cent) for marketing purpose while vendors were used mostly, sometimes and also occasionally to the tune of 11.11, 8.33 and 59.26 per cent, respectively by the farmers (Table 3). Occasionally to the tune of 75 respondents also sold their animals to the butchers. The present study area was a place of abundance agricultural production but with no good market support (Table 5). That was the reason that in spite of being an agriculturally rich area, the relative progress of the farm community was not seen vibrant. So was the case in relation to livestock farming and marketing of the produces. Almost all the respondents (98.15 per cent) revealed that nearby market was used mostly/regularly by the majority of the farmers for marketing purpose which was described by Buredette and Abbott (1960), however, this could not be considered as a good remunerative scenario for the livestock farmers. Because, to become market buoyant, there has to be some stiff competition among buyers, consumers, vendors and state owned support system (if any). From the results it was revealed that even though there was an overlapping of buyers from traders, vendors and consumers etc. the options were very limited. It looked like under compulsion or rather as a regular process the livestock farmers had to take their animals to the common nearby market for sale. For all of them it must not have been the best option, because, to take the livestock for sale to the market in case of the distantly placed farmers was not an easy task. Further in case of large livestock also it was a rather very difficult task in addition to the fear of not getting the

price of choice. That was vividly shown in the finding while vendors were used mostly, sometimes and also occasionally to the tune of 11.11, 8.33 and 59.26 per cent respectively by the farmers. So, selling to the vendors was definitely not the preferred option for the livestock farmers of the region. Similar findings were also reported by Fisher (1969). Occasionally to the tune of 75 respondents also sold to the butchers their animals. So, it also further strengthened the fact that the respondents did not want their animals to be sold to the butchers for slaughter. Similar results were obtained by Beyene and Lambourne (1985).

Management/Health care

In the present study, majority of the farmers (68.51 per cent) maintained medium level of management/health care followed by 21.30 per cent and 10.19 per cent of the farmers maintaining high and low level of management/health care. About 90.00 per cent of the respondents falling in the medium to high category of management/health care practices grossly definitely looked healthy. But that standard of management, they were adopting for the non-productive, local and genetically poor livestock, which never fetched them the kind of return they might have expected. This might have been because of the fact that animal husbandry in the area of the study was an integral part of their agricultural system, which in turn was their livelihood. Similar results were also obtained by Das (2005). This finding obviously prompted to investigate the roots of the expression. It could be seen from the table 6 that the important areas where the respondents placed their opinion to mostly degree were "first aid treatment during emergency", "expenditure on health care/management (monthly) lesser than Rs. 500/-", "self-management of sick animal", "castration of male animal" and "deworming" (25.00 per cent). Looking in a greater canvas, all these findings could not be considered as exceptional, rather these were necessities. Such cares being taken by farmers were also reported by Rahman *et al.,* (2008). Further 87.96 per cent and 80.56 per cent of the respondents were also found to spend to the tune of more than Rs. 1,000/- monthly and less than Rs. 1,000/- monthly respectively.

From the present study it can be concluded that majority of the respondents reared livestock in intensive system (83.33 per cent) and cattle was highly preferred. About 48.15 per cent farmers had low level of adoption in breeding practices; however, majority of them (68.52 per cent) occupied medium level of adoption in scientific feeding practices. Although majority (78.70 per cent) of farmers managed livestock farm in better locations but most (83.33 per cent) of the respondents had kutcha houses. About 90.00 per cent of farmers disinfect their farm once a week. A huge majority (93.57 per cent) of the farmers had better source of water supply. Nearby market was used mostly/regularly by majority of (68.51 per cent) the farmers whereas, 98.15 per cent respondents took the help of vendors for marketing of their animals. Bulk (68.51 per cent) of farmers maintained medium level of management/health Care.

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