



Cattle production scenario in few rural areas at Pabna district of Bangladesh

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ABSTRACT

The study was carried out to reveal the cattle production scenario in few selected rural areas at Pabna district in Bangladesh. Data focused on cattle husbandry were collected from three villages of Bera Upazila in Pabna district with a pretested survey questionnaire. Collected data were compiled and analyzed following one-way ANOVA with descriptive statistics. Results showed that most of the cattle housing was *kacha* type (58%) with such flooring (98%). Farmers stated that they clean the cattle houses regularly (98%) but the use of disinfectant was not available there. Almost half of the (47%) of the farmers ensured regular bathing of their cattle. However, only 30% farmers used net to protect mosquitoes. Own breeding bull (51%) was used for natural breeding (75%) with no fee (84%) in the survey community. The farmers practiced deworming (82%) for their cattle but it was irregular (77%) and noted above one-year interval (47%). Only 23% farmers followed preventive vaccination and 51% households faced disease infestation in their cattle herd. Most frequent diseases or health issues identified in the study area were diarrhea (19%), blot (17%) and FMD (15%). About 41% households claimed no farming problems in those areas but 27% and 11% farmers noticed feed scarcity and lack of treatment facilities in the community, respectively. Lactation period, peak day milk and number of service for last pregnancy in the local Pabna cattle population were identified 235.60 days, 4.78 liters and 1.16, respectively. Capacity building training of farmers with proper funding on research could change the cattle genetic resources in those rural areas which consequently influence the overall livelihood as well.

INTRODUCTION

The economy of Bangladesh is based primarily on agriculture and livestock is an essential component of the rural economy. Cattle among other livestock species available in Bangladesh are the most versatile component in relation to existing integrated agricultural farming system. Nearly 24.5 million heads of cattle are distributed throughout the country (DLS, 2015). These cattle are of multipurpose in providing milk, draught, meat and dung as fuel and organic fertilizer and strongly linked with the livelihood of people (Hasnath, 1999). About 85% of cattle of Bangladesh are of non-descript and indigenous in origin with low productivity compared to other existing exotic breeds and their crosses, but they are well adapted in the tropical harsh environment

have the ability to maintain their body condition on poor quality feed stuffs and are well resistant to local diseases (Majid et al.,1992).

Dairying as a part of crop-livestock mixed farming system plays a significant role in nutrition, income, jobs and rural livelihoods. High yielding dairy cows are available at urban areas of Pabna district but the indigenous cattle genetic resources are still available in the rural areas where the concentration of local Pabna cattle is dominated. Dairy breed development from this local resource would be a challenging works. To organize the planning and further comparison after a certain period on this aspect a baseline survey was conducted for revealing the cattle production scenario in three rural villages of Pabna district.

METHODOLOGY

Data on cattle production (focused on local Pabna cattle) and their management (housing, feeding, breeding and health) were collected from total 57 households from three selected villages (Umarpur, Khorbagan and Hatail Aralia) under Bera Upazila of Pabna district with a pretested survey questionnaire. The collected data were compiled, tabulated and analyzed following one-way ANOVA with descriptive statistics by SPSS version 16 (SPSS Inc. Chicago, USA).

RESULTS AND DISCUSSION

Livestock population and types of cattle population

From the household survey, our research group previously observed that total number of cattle in those survey area was 286 where the percentage of local Pabna cattle was 70% (Figure 1) among the total population (Talukder et al., 2017). Out of those population, about 40% milch cow, 60% pregnant and 10% dry cow found in the local cattle population; whereas 10% milch cow, 8% pregnant and 2% dry cow belonged to crossbred (Figure 2). However, the frequency of crossbred cattle genotype was higher in the urban area rather than rural of Pabna and Sirajganj districts (Shahjahan, 2017).



Figure 1
Cattle population (mainly local Pabna) in the survey area.

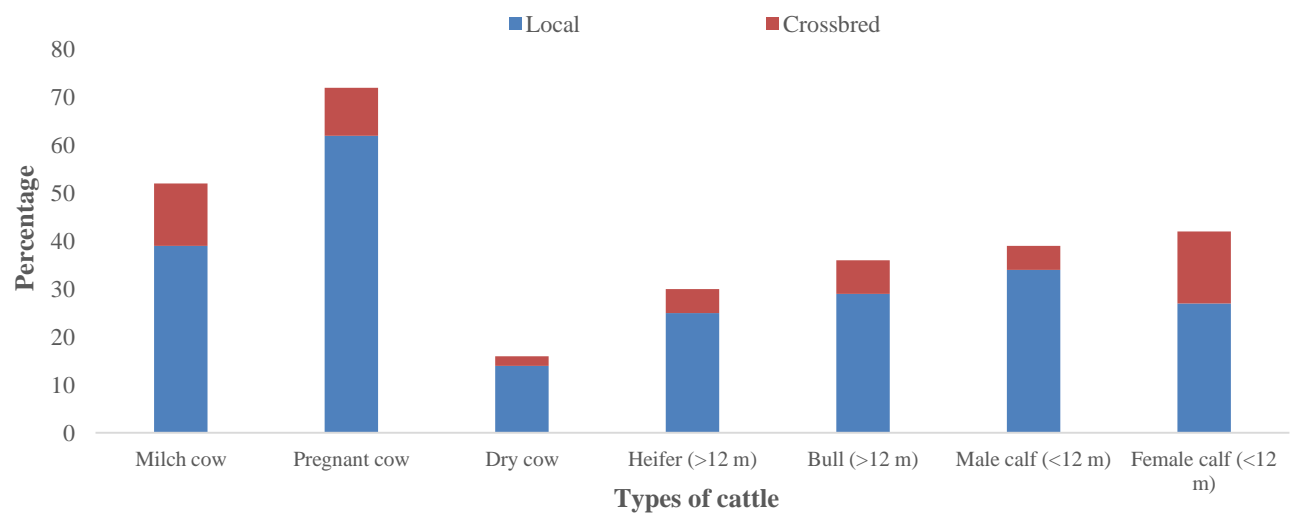


Figure 2
Types of cattle among the local and crossbred cattle population.

Management practices in the survey community

Cattle housing system in our survey area is shown in Table 1. It was observed that highest number of shed was *kacha* (58%) followed by tin (26%) and *chapra* (16%). There was no *pacca* shed in the selected community. Regardless of shed types, almost all (98%) floors of cattle houses were *kacha* in the community. South (37%) and west (37%) facing houses were dominant than east (23%) and north (4%) facing houses with 50% aeration facilities in sheds. The majority of farmers (98%) cleaned their shed daily but they did not use any disinfectant to clean the shed. More than 50% farmers did not practice bathing for their cattle regularly. To protect their cattle from mosquito, most of farmers (42%) did not take any measures but 30%, 18% and 11% farmers used net, smoke and coil, respectively. *Kacha* shed was dominant in community from household survey.

Table 1
Cattle housing system in the survey community.

Housing facility	Category	Frequency	Percentage
Types of shed	<i>Pacca</i>	0	0
	<i>Kacha</i>	33	58
	Tin	15	26
	<i>Chapra</i>	9	16
Floor	<i>Pacca</i>	1	2
	<i>Kacha</i>	56	98
Facing of house	North	2	4
	South	21	37
	West	21	37
	East	13	23
Aeration facility	Yes	31	54
	No	26	46
Daily cleaning	Yes	56	98
	No	1	2
Using disinfectant	Yes	0	0
	No	57	100
Regular bathing	Yes	27	47
	No	30	53
Saving from mosquito by	Net	17	30
	Coil	6	11
	Smoak	10	18
	Nothing	24	42

Khan et al. (2013) found that tin shed possessed higher percentage for dairy cattle rearing in their

study areas which were contradicted with our findings. Islam et al. (2010) reported that about 60% farmers used brick floor (*pacca*) for their dairy animals while 98% farmers in the present study used *kacha* floor. Facing of house determines the aeration system of the house. It was seen that in the present study south and west facing houses were dominant in the selected areas. Salahuddin et al. (2017) reported that traditional farmers used mostly south and north facing to rear animals. The present study slightly differed with that and it might be the reason of different species and locations.

Cattle breeding system in survey community

Cattle breeding system in the household survey areas is depicted in Table 2. It was appeared that 75% of the farmers bred their cows naturally using own reared bulls (51%) or neighbor bulls (32%) which were totally free of cost (84%) rather than bred artificially (14%). Only 11% of them bred their cattle both artificial and natural service means. DLS and Milk Vita inseminated only 16% and 2%, respectively with their market price. A similar study conducted by Siddiquee et al. (2013) and found that about 40% farmers used natural service to their cow. Rahman et al. (2013) reported that 76% farmers inseminated their cows artificially which shown inversely with the present study. It might be the reason of higher frequency of local cattle in our study area where natural service was more convenient and cheap than artificial insemination.

Table 2
Cattle breeding attributes in the selected community.

Parameters	Frequency	Percentage
Service type		
Natural	43	75
Artificial insemination	8	14
Both natural and AI	6	11
Service charge		
Free	48	84
Paid	9	16
Service received		
Own bull	29	51
Neighbor bull	18	32
DLS	9	16
Milk Vita	1	2

Health management practices in survey community

Health management of cattle in the survey community is presented in Table 3. Results showed that 82% farmers dewormed their cattle but only 23% deworming conducted at regular intervals. Among regular intervals, about 33% farmers dewormed their cattle at 6 months' interval period whereas 47% deworming was done above 12 months' interval. Farmers of the community had no idea about feces test. Only 23% farmers took measures on preventive vaccination and 51% responded on disease that occurred lasts 12 month. These findings were quite similar with Islam et al. (2016) who reported the overall mortality rate of cattle was found comparatively lower in Pabna district (1.84%). Most of the farmers in those areas did not vaccinate and use deworming drug for their cattle due to lack of awareness, scarcity of vaccine and high price of anthelmintic. Milch and pregnant cows found 40% and 60% in local Pabna cattle compare to crossbred, respectively, 10% and 8%.

Table 3
Health management practices in the survey community.

Health issue	Category	Frequency	Percentage
Deworming	Yes	47	82
	No	10	18
Regular interval	Yes	13	23
	No	44	77
Interval period	≤3 months	2	4
	6 months	19	33
	12 months	9	16
	>12 months	27	47
Feces test	Yes	0	0
	No	57	100
Preventive vaccination	Yes	13	23
	No	44	77
Disease (last 12 months)	Yes	29	51
	No	28	49

Prevalent of different diseases or disease symptoms among the cattle population in the community are shown in Figure 3. It revealed that frequent of diarrhea occurred maximum (19%) followed by blot (17%) and FMD (15%) in the

cattle population of that community. Skin diseases, fever, mastitis and black quarter was also occurred at a certain percentage. These findings were quite similar with Habib et al. (2017) who reported that hemorrhagic septicemia, calf pneumonia, helminthiasis, enteritis and mastitis were the major diseases of large ruminant animals in milk pocket areas of Bangladesh.

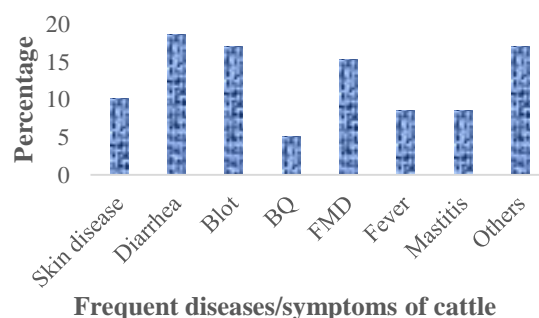


Figure 3
Prevalent of different diseases or disease symptoms among the cattle population.

Farming problems in survey community

From household survey, it was revealed that different problems were associated with cattle farming community (Figure 4). Results showed that 41% farmer did not face any problems but 59% farmers found various problems during cattle production including feed scarcity (27%), lack of treatment (14%), lack of veterinarian (10%) and disease infestation (8%). The main problems relating dairy farming in Bangladesh were breeding, feeding, management, disease and marketing (Shamsuddoha, 2000).

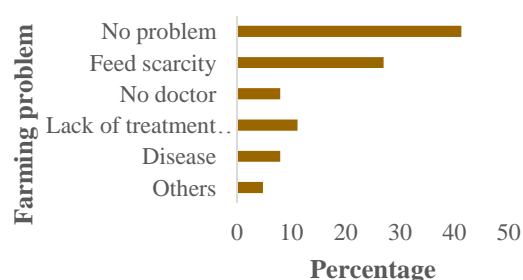


Figure4
Different farming problems in the survey areas.

Production and reproductive efficiency of local Pabna cattle in survey community

Productive and reproductive efficiency of local Pabna cattle are given in Table 5. Lactation period had significant variation ($p < 0.001$) in cattle populations of survey areas but no variations (p

> 0.05) observed in peak milk production and service for last pregnancy. Haque et al. (2011) reported that this low productivity of the native cows was mainly due to poor genetic potentials. However, Talukder et al. (2017) found no regional effects on morphological characteristics of local Pabna cattle in the same areas.

Table 5
Production and reproduction efficiency of local Pabna cattle.

Trait	Kharbagan (n=25)		Hatial Aralia (n=36)		P value
	Mean	SE	Mean	SE	
Lactation period (d)	235.60	8.75	193.33	6.17	0.000
Peak milk production (l)	4.32	0.39	4.78	0.25	0.309
No. of service in last pregnancy	1.16	0.12	1.25	0.08	0.535

CONCLUSION

The frequency of local cattle was much higher in the survey area compare to crossbred. The housing, breeding and health management of those cattle population was also inferior to urban dairy farming areas. However, proper training facilities of those farmers and cattle breed development attempts through research based selective and controlled breeding could enhance capacity building of farmers on farming with developed breed either from local or crossbred in those rural areas.

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