

Feeding and management practices of Red Chittagong cattle in two selected upazilas of Chittagong district

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Abstract

The present study was designed to obtain existing baseline information on feeding and management practices of Red Chittagong (RC) cattle in two Upazilas of Chittagong district. The results showed that among 42 cattle owners, agriculture was the main occupation (52.38%). The percentage of RC cattle was about 70% and concentration was higher in Anowara than that of Chandanaish upazila. Farmers of the study area supplied on an average 4.93, 8.35, 2.25, 1.54 (kg/d) of rice straw, green grass, rice polish and wheat bran respectively. About 45.24%, 21.43%, 30.95% and 2.38% farmers supplied whole and dry straw, chopped and dry straw, chopped straw soaked with water and straw with green grass respectively. About 55%, 14.3% and 13% of the farmers followed stall feeding (cut and carry system), grazing and stall feeding with grazing respectively for feeding green grasses. The average daily grazing period of cattle was 7.25 hours with highest and lowest 9 and 5 hours respectively daily. About 26.19% of the respondents made cattle house using tin and chatai. 81% of the cattle house had sufficient ventilation and light. The major disease outbreak in the area was FMD, which was 45% of the total disease incidence. About 36% respondents used vaccine and 95% took help from village doctor for treatment of their cattle. Cattle rearing contributed more (about 57%) to income generation of low income group than medium (6.89%) and high (8.25%) income groups. 35% respondents showed their interest to grow fodder crops and 65% of farmers were reluctant to grow fodder crops due to limitation of crop land.

Key words: : Red Chittagong cattle, feeding and management practices

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Introduction

Bangladesh is a country of small and mixed farms where crop, livestock, fisheries and homestead forestry is the major components of the farming systems. The total cattle population in Bangladesh is estimated as 22.90 million (Bangladesh Economic Reviews and DLS, 2008). Most of the Bangladeshi cattle are of *Bos indicus* type and there are few improved varieties of cattle such as Red Chittagong Cattle (RCC) in Chittagong region, Pabna Milk Cow (PMC) in Pabna region, North Bengal Grey, Munshigonj type etc (Hossain 2005). Among them, the Red Chittagong cattle are one of the improved and promising varieties of domestic animal genetic resource. Its milk production is higher than the milk production of indigenous cattle and it's well adopted in prevailing feeding and management systems and resistant to

several diseases and parasitic infestation (Ali, 1965).

But this cattle with other important animal genetic resources in Bangladesh like Local sheep, indigenous Buffalo, Assel chicken, Sorail dog etc have become endangered or at risk condition (Husain and Amin 2003). So, strategy for genetic conservation and improvement of RC cattle is highly justified for small scale dairy enterprise. Development of appropriate feeding and management system utilizing available feed resources to increase RC cattle performance is therefore, an important aspect that needs to be addressed. However, up-to-date knowledge on the state of feeding and management system of Red Chittagong cattle in their home tract is essential in order to proceed further. Red Chittagong cattle are selected for this study as feeding and

management system of RC cattle currently being practiced by the farmers are not available. Keeping this view in mind, the present study was undertaken to study feeding system and management practices of Red Chittagong cattle followed by farmers.

Materials and Methods

Two upazilas namely Anowara and Chandanaish of Chittagong district were selected for this study. A total of forty two (42) farmers were selected. Among them 22 farmers were from Anowara and 20 from Chandwanish. Farmers who had at least one RC cattle were involved in this study. The data were collected by interviewing cattle owners door to door using a questionnaire. The data about age, level of education, family size, farm size and annual income of the respondents were considered as primary information's of this study.

Feeding and management: The data about feeding practices includes supply of roughage and concentrate feed to cattle. It also include different feeding systems like intensive, extensive, semi extensive, individual or group feeding, with or without processing of feed etc were collected for this study. Management

system included housing, disease control, vaccination and Medicare etc. were considered for this study.

Statistical analysis

All the data from two locations were analyzed with help of descriptive statistical method using Statistical Package for Social Science (SPSS). Analysis was performed to calculate number, means, percentage and standard deviation.

Results and Discussion

Cattle Population

The concentration of cattle population in Anowara and Chandanaish are presented in Table 1. The concentration of Red Chittagong (RC) cattle was higher (80%) in Anowara upazila than that in Chandanaish (58%). In both upazilas about 69.7% of total cattle population were RC cattle followed by *Deshi* (27%) and crossbred (3.4%). Hossain (2005) also reported higher concentration of RC cattle in Anowara, Patiya, Chandanaish and Raozan upazila of Chittagong district. The results indicated that the farmers had on an average 70.6% milking cows of RC genotype followed by 29.4% *Deshi* cows. No crossbred milking cow was reported in the study area.

Table1. Cattle population

Animal category	Genotypes /breed	Anowara (n=22)		Chandanaish (n=20)		All area (n=42)	
		No.	%	No.	%	No.	%
Milking cow	RCC	14	87.50	10	55.56	24	70.59
	<i>Deshi</i>	2	12.50	8	44.44	10	29.41
Pregnant cow	RCC	8	100.00	5	83.33	13	92.85
	<i>Deshi</i>	0	0.00	1	16.67	1	7.14
Bull	RCC	3	100.00	0	0.00	3	50.00
	<i>Deshi</i>	0	0.00	3	100.00	3	50.00
Heifer	RCC	3	50.00	4	100.00	7	70.00
	<i>Deshi</i>	2	33.33	0	0.00	2	20.00
	Crossbred	1	16.67	0	0.00	1	10.00
Male calf	RCC	3	42.86	3	60.00	6	50.00
	<i>Deshi</i>	3	42.86	2	40.00	5	41.67
	Crosbred	1	14.29	0	0.00	1	8.33
Female calf	RCC	5	100.00	4	50.00	9	69.23
	<i>Deshi</i>	0	0.00	3	37.50	3	23.08
	Crossbred	0	0.00	1	12.50	1	7.69
Total RC cattle		36	80.06	26	58.15	62	69.66

n, number of farmers

Feeding and management of Red Chittagong cattle

Quantity of feed supplied to the animals

The average quantity of rice straw and rice polish supplied daily to the cattle was higher in Anowara than those in Chandanaish upazila. In contrast, average daily supply of green grass and wheat bran to each cattle was lower in Anowara than those in Chandanaish upazila (Table 2). The Table also shows that on an average 2.25 kg rice polish and 1.54 kg wheat bran were supplied daily by the farmers to each cattle. Jalil et al. (1995) reported that rice straw and green grass available per cow per day were 4.03 kg and 11.35 kg respectively. They also reported that the amount of concentrate feeds like rice polish and wheat bran supplied to each cow per day were 2.17 and 0.72 kg respectively. The amount of rice straw and rice polish supplied to each animal are almost similar to the present study. Farmers of all areas on average, supplied 4.93 kg rice straw and 8.35 kg green grass per day to each animal irrespective of land size (Table 2). The quantity of straw and green grass was recorded based on the assumption of the farmer. The supply of rice straw increased with the increase of land size while supplied of green grass decreased with the increase of land size. There was a trend to increase concentrate supplementation with the increase of land size (Table 3).

Table 2. Quantity of feed ingredients supplied by the farmer to cattle

Feeds	Feed supplied (kg/d/h \pm SD)		
	Anowara (n =22)	Chandanaish (n =20)	All areas (n =42)
Rice straw	5.18 \pm 2.79	4.65 \pm 1.23	4.93 \pm 2.18
Green grass	7.00 \pm 2.37	9.85 \pm 2.85	8.35 \pm 2.95
Rice polish	2.32 \pm 1.32	2.17 \pm 1.13	2.25 \pm 1.22
Wheat bran	1.34 \pm 0.60	1.70 \pm 0.61	1.54 \pm 0.63

n, number of farmers

Method of straw feeding

The whole rice straw under was fed to the cattle by the majority of farmers (about 45%) in the study area (Table 4). About 21.4% farmers used chopped straw to fed their cattle. Many farmers (about 31%) preferred to soak it with water before feeding. In fact, feeding method of straw followed by the farmers was almost similar in two areas except feeding straw mixed with green grass. In Anowara no farmer followed this practice but in Chandanaish about 2.4% of farmers fed straw mixed with green grass to their cattle. Rahman et al. (1998)

reported a little variation of straw feeding that 10.5, 19, 32.5 and 24.5% of the total farmers used rice straw as a dried whole straw, dried chopped straw, wet chopped straw and chopped straw + green grass respectively.

Most of the farmers followed (54.8%) stall feeding for supplying green grass to their cattle (Table 4). About 31% of total farmers followed both stall feeding and grazing method, 15% followed only grazing method for feeding green grasses to the cattle. The methods of green grass feeding were almost similar in both Anowara and Chandanaish upazilas. In both upazilas, 100% farmers followed group feeding for their cattle. In a previous study, Rahman et al. (1998) found that stall feeding was practiced by 1.53% farmers, while tethering and stall feeding were practiced by 41.32% farmers.

Table 3. Quantity of feed ingredients supplied by the farmer in relation to land size

Land size (n)	Feeds supplied (kg/head/day)			
	Rice straw	Green grass	Rice polish	Wheat bran
Landless (13)	4.33	9.12	1.85	1.15
Small (24)	4.50	8.25	2.23	1.27
Medium (3)	5.00	8.33	2.25	1.78
Large (2)	5.87	7.7	2.67	1.96
Average	4.93	8.35	2.25	1.54

n, number of respondent; Landless (0.00-0.49 acre); Small (0.50-2.49 acre; Medium (2.50-7.49 acre); Large (7.50 acre and above)

Grazing pattern of cattle

Fellow land, road side, school field, play ground were used for grazing livestock. Table 5 show sthat the average grazing period was higher in Chandanaish (8.25 hr/d) than Anowara (6.58 h/day). The highest and lowest grazing period in Chandanaish were 10 hours and 6 hours per day respectively while in Anowara upazila, the highest and lowest grazing period were 8 hours and 4 hours per day respectively. This variation may be due to the fact that the percentage of landless farmers (35%) in Chandanaish was higher than Anowara upazila (22.73%). The average grazing period in two upazilas was 7.25 hours/day. Kibria (1991) in a previous study found the highest and lowest grazing period of 9.07 hours and 4.17 hours/day respectively. In a more recent study, Rahman et al. (1998) reported that the highest and lowest grazing period for cattle were 8 hours and 2 hours/day, respectively.

Table 4. Method of feeding straw and green grass

Feeding method	Anowara (n=22)		Chandanaish (n=20)		All area (n=42)	
	No. respondent	%	No. respondent	%	No. respondent	%
Whole straw	10	45.55	9	45.00	19	45.24
Chopped straw	5	22.73	4	20.00	9	21.43
Chopped straw soaked with water	7	31.82	6	30.00	13	30.95
Others (Straw + green grass)	0	0.00	1	5.00	1	2.38
Stall feeding	11	50.00	12	60.00	23	54.76
Grazing	3	13.64	3	15.00	6	14.29
Stall feeding with grazing	8	36.36	5	25.00	13	30.95

n, number of farmers

Table 5. Duration of grazing period (hr/day)

Grazing period (hour/day)	Anowara (n=22)	Chandanaish (20)	All areas (n=42)
Grazing	6.58 (54.54)	8.25 (40.00)	7.25 (47.61)
Highest grazing period	8 (33.33)	10 (25.00)	9 (29.17)
Lowest grazing period	4 (8.33)	6 (12.50)	5 (10.42)

Figures within the parenthesis indicate the percentage of respondents

Fodder production

In the study area, 38% respondents wanted to grow fodder and 62% respondents were reluctant to grow fodder due to lack of land (Table 6). The farmers having large land size were interested to grow fodder in their field and this trend was increasing gradually. They showed interest to grow german, dal, para, maize etc fodders. This is almost similar to the findings of Haque and Amin (1992). They reported that 35% respondents wanted to grow fodder and 65% of farmers were reluctant to grow fodder.

Table 6. Information on farmer's interest to grow fodder based on land size

Land size	No. respondents (n = 42)	Want to grow fodder (%)	Do not want to grow fodder (%)
Land less	13	15	75
Small	24	41	59
Medium	3	66.67	33.33
Large	2	100	0
Average		38.1	61.90

n, number of respondent; Landless (0.00-0.49 acre); Small (0.50-2.49 acre; Medium (2.50-7.49 acre); Large (7.50 acre and above)

Information related to housing

The cattle houses were made of varieties of local materials such as straw, tin, mud, chatai, and in few cases tin shed having brick wall and concrete floor (Table 7). In Anowara 32% houses were made of straw and in Chandanaish were 45% made of tin and chatai. This may be related to the economic condition of the farmers which is much better for the farmers of Chandanaish than Anowara upazila. Housing space per household was higher in Chandanaish (100 sqft) than Anowara upazila (96 sqft). The location of the cattle house in most cases (60%) was far from the farmer's house which is different from the findings of the Hossain (2005). He reported that in most cases cattle house were near the farmer's house. Most of cattle house were east facing in Anowara (60%) while in Chandanaish, most of the houses were north-facing. On an average in two upazila most of the houses (40.48%) are east-facing. Longevity of house was higher (10year) in Chandanaish than Anowara (about 5%) which may be due to the fact the materials used for cattle house. In Chandanaish, 90% of the cattle houses had sufficient ventilation and light which is higher than that of 72% in Anowara.

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Table 7. Information related to housing

Aspects	% of respondents		
	Anowara (n=22)	Chandanaish (n=20)	All area (n=42)
Materials used for house construction			
Straw	31.82	5.00	19.05
Tin	9.09	25.00	16.67
Mud	13.60	10.00	11.90
Building	4.54	0.00	2.38
Chatai	0.00	5.00	2.38
Straw and mud	13.60	5.00	9.52
Tin and straw	9.09	0.00	4.76
Straw and chatai	9.09	5.00	7.14
Tin and chatai	9.09	45.00	26.19
Area of the house (Sq.ft.)	96	100	98
Location of the house			
Near to bed room	40.91	40.00	40.48
Far from bed room	59.09	60.00	59.52
Facing of the house			
East	59.09	20.00	40.48
West	36.36	15.00	26.19
North	4.55	55.00	28.57
South	0.00	10.00	4.76
Longevity of house (year)	4.98	10.60	7.70
Sufficient ventilation and light	72.00	90.00	81.00

N, number of observation

Diseases of cattle and their prophylactic measures

The most prevalent diseases of RC cattle were found foot and mouth disease (FMD), pneumonia, bloat, black quarter, diarrhoea and mastitis in the study areas (Table 17). Similar observation has been reported from the study of Hossain et al. (2006). The percentage of disease occurrence was higher in Anowara than Chandanaish. Use of vaccine was higher in Chandanaish (50%) than Anowara (22.73). The respondents of Chandanaish (100%) buried their dead animal whereas in Anowara about 86% respondents buried their dead animals. Rest of the farmers (13.64% in Anowara) threw the dead animal in jungle or somewhere else. It indicates that the farmers of Chandanaish

upazila are more aware than the farmers of Anowara. The reason may be the higher literacy rate of Chandanaish than Anowara. Most of the farmers claimed that they were suffering from lack of vaccine for their cattle in economic price. They were failed to contact upazila veterinarian during the diseases outbreak of their cattle. Among three seasons most of the outbreak of disease was found in rainy season (76%) followed by 16.66% and 7.14% in summer and winter season, respectively which may be due to marshy environment and poor nutritional status.

Table 8. Information related to diseases of cattle and their prophylactic measures

Health care practices	% of farmers		
	Anowara (n=22)	Chandanaish (n=20)	All area (n=42)
Prevalences of diseases			
Pneumonia	22.72	20.00	21.42
FMD	68.18	20.00	45.24
Mastitis	4.55	0.00	2.38
Worm infestation	13.64	0.00	7.14
Bloat	9.09	15.00	11.90
Black quarter	4.55	5.00	4.76
Diarrhoea	9.09	0.00	4.76
Bat	13.67	5.00	9.52
Use of vaccine	22.73	50.00	35.71
System of treatment			
Village doctor	100.00	90.00	95.24
Hospital	0.00	10.00	4.76
Seasonal out break of diseases			
Summer	9.09	25.00	16.66
Rainy	86.36	65.00	76.19
Winter	4.55	10.00	7.14
Fate of dead animal			
Buried	86.36	100.00	92.86
Thrown out	13.64	0.00	7.14

n, number of observation

Conclusion

The percentage of RC cattle was higher in Anowara than that of Chandanaish upazila in Chattagong District. Farmers supplied rice straw, green grass, rice polish and wheat bran of their cattle for feeding, most of the farmers provided whole straw and followed stall feeding system (cut and carry system). The daily grazing period of cattle was average 7.25 hours

in a day. Most of the respondents made cattle house using tin and chatai where 81% of the cattle house has sufficient ventilation and light. The major disease outbreak in the area was FMD. Reasonable respondents showed their interest to grow fodder crops and majority of farmers were reluctant due to limitation of crop land.

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