



Phenotypic and productive traits of kurbanu bulls as livelihood changes of farmers during Eid-Ul-Azha in Mymensingh district

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ABSTRACT

A survey was conducted to know the phenotypic and productive traits of bulls during Eid-ul-Azha at different markets of Mymensingh district. Two hundred cattle farmers and sellers were chosen for interview from three markets namely GTI of Bangladesh Agricultural University, Sutiakhali and Vagnabari of Mymensingh sadar. Data were collected through a pre-structured questionnaire during 2017. Both descriptive and inferential statistics were used to analyze data. Parameters studied were farmer's status, training skill, capital source, purchasing ability, duration of rearing, feeds and feeding system, color, breeds, age, cost of cattle, rearing of cattle, total income, net income, problems and suggestion of cattle keepers and impact of livelihood improvement in this study. About 45% farmers had primary level education, 35% had under secondary school education and 20% had no education. Sixty percent farmers reared cattle having 2-3 years of age. Eighty and 20% farmers used bulls for fattening purpose having 1 and 2-3 cattle. Fattening period were 3-6 and 7-12 months of 60 and 30%, respectively. About 53 and 28% breeds were indigenous and Holstein crosses. Black, red and red black color was 33, 28 and 15%, respectively. Seventy three percent farmers had short training on livestock rearing and management. About 95% farmers reported acute shortages of green fodder and concentrate and 30% reported lack of credit as major problems of fattening. Average expenditure, income and net income were 36617, 67500, and 30883 BDT, respectively. The study suggests that for healthy and disease free indigenous breed of red and black color with appropriate age of fattening cattle practiced by rural farmers need to further assess the socio-economic status of poor farmers by creation demand to consumers and to investigate marketing system of fattening program.

INTRODUCTION

According to World Health Organization (WHO), per capita annual demand for meat is around 80kg in the world, while per capita meat consumption in Bangladesh is only 7.3kg a year (The Independence, 2017). Statistics from the WHO also shows per capita annual meat consumption is 19, 50, 100, 100, and 70 kg in Pakistan, China, Germany, United States and Argentina. However, per hectare density of cattle head in Bangladesh is higher than any other country in the world. The number of cattle head per hectare is 2.49, 1.12, 0.70, 0.38, 0.81 and 0.34 in Bangladesh, India, Pakistan, the United States, Denmark and Kenya, respectively. On the other hand, annual meat production is currently 36 lakh tones, a large portion of which is covered by poultry. According to the Department of Livestock Services, there were two crore, 34 lakh and 88 thousand cows in 2013-14. This number reached two crore, 36 lakh

and 36 thousand in 2014-15. Ministry of Fisheries and Livestock and Bangladesh Raw Hide Merchants Association and Tanners Association of Bangladesh sources say that around 1.4 crore of cattle are being slaughtered every year in Bangladesh during Eid ul- Azha (The Independence, 28 September, 2015). Many household farmers also rear cattle, goats and sheep targeting Eid-ul-Azha, and the number would be double than that supplied by the cattle farmers, According to livestock department estimates, there are about five lakh cattle farmers across the country. They rear a total of 33.33 lakh cattle and buffaloes for Eid-ul-Azha. Besides, 28.33 lakh goats and sheep have also been reared (The Independent, 2017). The livestock department was anticipating the demand for 1.15 crore cattle, goats and sheep during Eid-ul-Azha in 2017. However, the tannery industry insiders said 1.60 crore animals were slaughtered in 2015-16, while the figures were 1.55 crore in 2014-15 and 1.36 crore

in 2013-14. The demand for sacrificial animal will increase this year from that of the past year as farmers have already sold many cattle heads, goats and sheep this year, the country will certainly experience a shortfall of sacrificial animal in the upcoming Eid-ul-Azha if Indian cows and buffaloes are not imported. The livestock and fisheries ministry has taken steps to curb the use of cattle-fattening steroids and food, which are hazardous to human health. "We have zero tolerance for artificially fattened cattle.

Syed Hasan Habib of Bengal Meat, Bangladesh's top beef exporter, says it had to cut international orders by 75 %. The company exports 125 tons of beef a year to Gulf countries. Bangladesh will be benefited in the long run as cattle farmers are now encouraged to go for a large scale cattle farming. Finally, it can be said the livestock sector is important in Bangladesh, especially from the perspectives of crop production, food and nutrition security, poverty reduction and employment generation. The livestock sub-sector offers important employment and livelihood opportunities particularly for rural poor, including the functionally landless, many of whom regard livestock as a main option (The Independence, 2015). Farmers use to buy emaciated male or infertile cows or heifers considering their body conformation, size and having them treated with de-wormer better diets are fed a period for at least 120 days to market fattened animals (Huq and Amanullah (2009). Breed, color, age, weight, cattle price, feed price, market expectation, weather and any other variables are involved to make a particular set of feeder cattle into a merchantable set of slaughter cattle. Some (10-12%) of total beef comes from growing animals during Eid-ul- Azha (Begum et al., 2007). A major constraint for optimum livestock production is the shortage of feeds and fodder in Bangladesh. Feed sources for livestock are mainly derived from crop residues, cereal by-products and road side grasses. Huq et al., (1997) reported that farmers were highly benefitted by selling fattened cattle before Eid-ul-Azha in Mymensingh district. The prevailing condition of beef cattle production by rural farmers in different areas of Mymensingh district is needed to be focused for uplifting beef production because there is a huge demand, through huge amount of shortage of beef exists at

present. The information related to cattle fattening practices by rural farmers in Bangladesh is very little. Detailed study is needed in different areas of Bangladesh to recommend cattle fattening for rural poor farmers not only for income generating activities and self-employment but also to meet up beef demand. Therefore, present study was undertaken to collect the information on healthy and disease free indigenous breed of red, black and white black color with appropriate age of fattening cattle practiced by rural farmers to assess socio-economic status of poor farmers by creation demand to consumers, to investigate marketing system of cattle fattening program.

MATERIALS AND METHODS

Selection of study area and respondents

Three local markets namely GTI, Sutiakhali market of Mymensingh sadar and Vangnabari market of Gauripur upazila of Mymensingh district which were around 3-5 km distance from Bangladesh Agricultural University, Mymensingh were selected as study areas for the reason that better cattle are reported to be found in that areas. Therefore, the area was considered to conduct targeted field survey. Two hundred respondents were chosen from three markets having 95, 52 and 53 cattle of collection data for this investigation.

Preparation of questionnaire

The questionnaire was carefully designed for keeping purposes of the study. The questionnaire contained both open and closed form questions. Most easy, simple and direct questions were used to obtain information from the farmers. The questionnaire was pre-tested for judging the suitability of the questionnaire to respondents. After that the questionnaire was finalized upon making necessary modifications. Simple and direct questions were included in the questionnaire for collecting information relating to study objectives.

Collection of data

In order to collect relevant information interview technique was followed such as socio-economic status, livestock population, feeding regime, production potential, productive performance,

physical and morph metric characteristics, parasitic infestation, disease control and management. But usually, most of farmers are not used to keep any written information (records) on their livestock. So, researcher had to depend on memory of the respondent for obtaining target information. All possible efforts were made by researcher to ensure collecting reasonably accurate information from the field. When interview was over, the information was checked carefully before leaving farmers market in study areas and any confusion was rationalized and corrected by comparing those with local standards to keep consistency of data.

Feeding and management

Stall feeding was mainly practiced throughout the year. Sometimes grazing was practiced after harvesting the crop cultivated in the field of that region. Besides, cattle graze few hours every day in open grass land called 'Char' and road side. Cattle mainly live on green grass and rice straw. At present farmers are cultivating high yielding fodder crops for feeding local and crossbred animals. Most of animals were provided concentrate feeds.

Analysis of data

After collection data were recorded in master table sheets. After completing the pre-tabulation task, actual tabulation work was started. A number of tables were prepared keeping in view the objectives of study. Finally, tabulated data were analyzed and condensed by using simple averages, percentages etc. to deliver the results.

RESULTS AND DISCUSSION

Status of bull farmers

Age, education, occupation and family size of bull's farmers are presented in Table 1. The bull rearing was practiced by middle aged (67%) and old aged (33%) farmers. Moreover, 80% bull farmers were educated but only 20% farmers were illiterate. In study areas 78% of selected farmers were engaged only with bulls rearing followed by agricultural crop farming, dairying and poultry rearing.

Training skill and source of capital of farmers

About 73% farmers received training from local NGO and livestock department (Table 1). They have practiced beef fattening as their family profession and some of the farmers are influenced by neighboring bull farmers. All farmers received loan from bank and local NGOs to purchase bulls and some used their own cattle for this program.

Purchasing ability of fattening farmers and duration of rearing cattle

Purchasing ability and duration of rearing beef cattle are presented in Table 1. Islam et al., (2012) reported that main occupations of farmers were Agriculture, Livestock and Others and family members were 2-10. Most of the farmers purchased 1-2 beef cattle in study areas and duration of beef cattle rearing was 3 to 12 months which is related to this study. Begum et al, (2007) found that 70% farmers used bulls and 70% farmers had average of 1-4 cattle and fattening period of 3-6 months and 7-12 months were reported by 60% and 30% farmers, respectively. Islam et al., (2012) reported that 46, 10.7 and 5% had primary, SSC and HSC level of education respectively.

Availability of feeds and fodders in the selected locations

Various types of feed ingredients were used in study areas for beef cattle (Table 2). The common ingredients were roadside green grass, wheat bran, rice bran and tree leaves. All farmers used sesame oil cake as protein source for fattening cattle. Farmers were mainly depended on green grasses and tree leaves of their availability. Sarkar et al., (2013) used Durba, Helencha and Noll and Dhal grass for buffalo rearing. Few farmers used fodders and most of farmers reported that feeds are not available in selected areas.

Feeding system

All farmers were practiced intensive and semi-intensive system 28 and 72%, respectively in study areas. In intensive system in study areas is the advantage that there were no losses of energy of beef cattle (Table 2).

Table1
Status of fattening farmers and duration of rearing beef cattle in studied areas.

Parameter	Category	Frequency (%)
Age	Middle aged (30-40)	134 (67)
	Old aged (>40)	66 (33)
	Total	200 (100)
Education	Primary	90 (45)
	Bellow SSC	70 (35)
	No education	40 (20)
	Total	200 (100)
Occupation	Beef cattle only	156 (78)
	Dairying only	15(8)
	Crop and poultry	29 (14)
	Total	200 (1)
Family size	2-4	125 (63)
	4-5	63 (32)
	5-6	12 (5)
	Total	200 (100)
Training skill	With training	145 (73)
	Without training	55 (27)
	Total	200 (100)
Source of capital	Loan from bank	46 (23)
	Local NGO	154 77
	Total	200 (100)
Purchasing capacity	1 cattle	165 (80)
	2-3 cattle	35 (20)
	Total	200(100)
Duration of rearing	3-6 month	120 (60)
	6-7 month	60(30)
	7-12 month	20 (10)
	Total	200 (10)

Table 2
Availability of feeds and fodders and feeding system in studied areas.

Types of feeds	Frequency (%)
Roadside grass (Durba, Helencha, Noll)	200 100
Cultivated fodders (Napier, Maize, Sugarcane top)	200 100
Tree leaves (Jackfruit, Banana, Shaora, Bamboo etc.)	200 100
Sesame oilcake	200 100
Feeding system	
Intensive	56 28
Semi-intensive	144 72
Total	200 100

Table 3
Breed, color and age in studied areas.

Breed	No. (%)	Color	No. (%)	Age (Years)	No. (%)
Indigenous	105 (52.5)	Black	65 (32.5)	2-3	140 (70)
Holstein cross	51 (25.5)	Red-	55 (27.5)	3-4	60 (30)
Red Chittagong-	10 (5)	White	23 (11.5)		
RCC cross	10 (5)	White black	28 (14)		
Shahiwal cross	24 (12)	Red black	29 (14.5)		
Total	200 (100)		200 (100)		200 (100)

Phenotype of animal

Breed, color and age of bulls are presented in Table 3. It was observed that most of the breeds were indigenous followed by Holstein cross and Red Chittagong Cattle cross.

Black was chosen as 1st color by customers, 2nd color was red and white color was found less in studied areas. The ages of most of the bulls were found between 2-3 years and fewer ages were between 3-4 years. Uzzaman et al., (2011) also found 74.78, 13.02 and 12.18% were crossbred, indigenous and Munshiganj cattle, respectively Begum et al., (2007) found that about 56.7% of farmers used cattle of 2-3 years of age and 36.7% of farmers used cattle of 1-2 years of age which were similar to our experiment.. About 70% farmers used bulls and 70% farmers had an average of 1-4 cattle for fattening (Begum et al., 2007).

Major diseases of cattle

Four major diseases were found rarely where the occurrences of FMD 2% followed by Black quarter and Anthrax during whole rearing period but no farmers reported disease affected cattle during fattening period.

Vaccination and de-worming

No farmers performed vaccination and few farmers used anti-helminthes to their cattle collected from local market.

Table 4
Cost of one cattle.

Cost per cattle (BDT)	Frequency (%)
17000-20000	85 (42)
20000-25000	56 (28)
25000-50000	59 (30)
Total	200 (100)

Average one cattle cost 31667 BDT

Table 5
Different cost of per fattening cattle rearing in studied areas.

Category	Expenditure (BDT)
Average feed cost	2500
Average housing and equipment cost	1600
Total	4100
Medicine and vaccine cost	
Average medicine cost	500
Average vaccine cost	350
Total medication cost	850
Total rearing cost	4950
Total expenditure: (31667+4950=36617 BDT including cattle)	

Table 6
Total and net income from beef cattle rearing in studied areas.

Category	Income (BDT)	Minimum (BDT)	Maximum (BDT)
Income/cattle	58000	45000	90000
Cow dung sale	850	750	1050
Total	67500	45750	73050
Net income	(67500 -36617)	30883BDT	

Table 7
Problems on feeding, management and marketing of cattle rearing and suggestions.

Problems	Percent	Suggestions	Percent
Feeding and Management			
Storage of animal feeds	95.3	Improved feed technology (UMB and Urea treatment)	95.3
Lack of high yielding fodder	95.3	Supply of low cost processed feed	92.5
High cost of feed	95.3	Introduction of fodder cultivation	91.4
Complexity of bank loan system	30.0	Should be avoided complexity and one stop loan service needed to be ensured	30.0
Not availability of pasture land	90.6	Subsidy needed on animal feed	95.3
Lack of credit facilities	30.4	Timely and easy bank loan system needs to be ensured	95.3
Insufficient training on livestock rearing	65.7	Motivation is needed on beef fattening	95.3
Natural calamities	55.6	Should be protected earlier	88.6
Housing problem during rainy season	24.8	Strong houses should be constructed during year round	95.3
Cattle theft problem	5.9	Program should be executed	86.7
Marketing			
Market site far from farmers house	95.3		
Disturbance of market actors	95.3		
Illegal entrance of Indian cattle	95.3		
Disorganized marketing system	95.3		
Price variation in different markets	87.2		
Bargaining in the market delay to fix the price	84.6		
Low price during selling	75.8		
Lack of government control on price	75.6		
Local touts	62.5		
High tax in market	56.8		

Table 8
Impact of fattening cattle on livelihood activities.

Category	Initial value(BDT)	Final value(BDT)	Percent	Ranking
Food purchasing	3000	4460	32.74	1
Cloth purchasing	450	620	27.42	2
Social status	700	900	22.22	3
Health care	325	400	18.75	4
Education	500	618	15.25	5
Housing	145	160	9.36	6

Cost of fattening cattle

Price of animals varies according to size, color and utility (Table 4.). Price of one cattle for fattening purpose was ranged from 17000-50000 BDT. Cost per year of housing and equipment was more or less same (Table 5). The major cost of health care is medicinal cost followed by vaccination program. Average rearing cost of one cattle was 4950 BDT.

Cost of farmer's family

Highest cost was found of feed cost followed by housing, equipment and medicine cost (Table 5). Hossain et al., (1999a) found production cost of BDT 5350 per cattle which was more or less similar with this study.

Total and net income from beef cattle rearing

Average income per cattle through fattening was 67500 BDT (Table 6). Total rearing cost was 4950 BDT indicated that rearing fattening cattle was profitable in study areas. Net income from one fattening cattle was 30883 BDT. In India, net annual income from rearing one cross breed cow and one buffalo was Rs. 30784 per year (Kalash et al., 2009) which was similar with this study. Islam et al., (2012) found that annual income were 20000-50000 BDT which was less than this study.

The net income was higher of fattening cattle rearing before Eid-ul- Azha due to huge demands of cattle slaughtering for sacrifice to Allah (Table 6). Farmers are well equipped by practicing of cattle rearing and leaning from cattle rearing mistakes at earlier practices and find legal market and sale their cattle to actual consumer avoiding all market actors. They maintained strong linkage with well known market and consumers to sell their cattle to ensure real price. They were well known to all rearing practices, medication and well communicated to Upazila Livestock Office and other local service providers. As a result they were more benefitted to fattening cattle rearing in studied areas during Eid- ul-Azha.

Problems faced by the farmers and suggestions

In Table 7 problems faces by farmers during whole period of this study were shown in rank order. Hossain et al., (1996b) from their studies reported that shortage of animal feeds was the greatest problems of farmers rearing cattle. Hashem et al., (1999) reported that lack of training, capital and natural calamities were the problems for cattle fattening in Bangladesh. They also mentioned that about 90% farmers had the problems of transporting cattle for marketing, besides markets are far away from farmers' house, disturbance of market actors and corrupted law and order problems were faced by above 90% farmers which were similar with this study. In this study areas entrance of Indian cattle before Eid-ul- Azha was also a major problem.

Impact of livelihood improvement of fattening farmers

The livelihood of bull farmers in studied areas was improved by bull rearing (Table 8). Sarkar et al., (2013) found that impact of livelihood activities on food, cloth, social status, health care, education and housing were 62.85, 58.33, 54.5, 34.3, 30, and 9.8% higher than previous state of buffalo rearing respectively. From net income they maintain all necessities of their family needs. Farmers were spent 32.74% more to food purpose before starting fattening program followed by clothing, social status, health care, education and housing purpose. The farmers spent very less amount of money for house purpose. So it was clearly indicated that livelihood improvement was uplifting in experimental areas by rearing bull before Eid-ul- Azha. Beef cattle raring increased livelihood status of farmers especially for farm women and the development of this sector is the potential path to rural prosperity (Kalash et al., 2009)

CONCLUSION

The result showed that indigenous breed of black, and red color were highly attractive to consumers during Eid-ul- Azha clearly indicated that livelihood increased positively changed through rearing fattening cattle in studied areas. Considering all parameters studied, fattening of healthy and disease free indigenous cattle program during Eid-ul- Azha was a profitable practice in selected areas. The black and red color with

appropriate age cattle was chosen by consumers on priority basis. As a result improvement of socio-economic status and livelihood of farmers through good management practices, improved scientific approaches and technology.

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