CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATION AND SYMBOL USED

Abbreviation and symbol	Elaboration
DLS	Department of Livestock Services
Fig	Figure
Kg	*Kilogram*
L	liter
Ml	milliliter
/	per
%	Percent
±	plus-minus
WHO	World Health Organization

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ABSTRACT

The study was conducted in Indian border to scrutinize the number and categories of cattle and buffalo that are imported from India to Bangladesh, Age and weight of animal was counted by visiting the Bakerali border frequently. The percent of importation of animal in July was (79.95%), in February (12.03%) and in March (8.02%) among them cattle were (57.57%) and Buffalo were (42.43%). There was found two breed of cattle, Hariana (86.06%) and Nepali (13.93%) where Bullock (90.15%), Male (8.49%), and Female (1.36%) among them white (48.97%), red (8.01%) and rest of them was black buffalo of Murrah breed (43.02%). The white Hariana bullock were highest percent of importation due to Hariana bullock was used to draught purpose when it was culled those animal were imported from India to Bangladesh. In July the highest percent of cattle and buffalo were imported through this border during the eve of Eid–Ul-Azha, the check post remain easy and river is full of water. That's why importation of animal was easy. Age of animals under this study was within a range of 5-8 years and their mean weight lies within 250-400 kg where maximum animal is of 350 kg. However, these types of way to import cattle must be banned and government should take necessary steps to increase the domestic production of cattle in Bangladesh.

Key words: Cattle, Buffalo, Border, Importation.

CHAPTER- 1

INTRODUCTION

Though the demand of milk and meat is larger in Bangladesh therefore large number of cattle and buffalos are imported from neighbor countries to Bangladesh. Milk and meat is the important source of animal protein. According to WHO (World Health Organization- 2014) the per capita annual demand for meat is around 80 kg and meat demand 12800000 metric tons & meat production 3620000 metric tons yearly in world . While per capita meat consumption in Bangladesh only 7.3kg a year. On the other hand the other hand the annual meat production is currently 36 lakh tones a large portion of which covered by poultry. The total beef production in the country around 25 percent comes from Indian imported cattle .According to World Health Organization:

Table1.1. Per capita meat demand and consumption in some countries in world:

Meat	Bangladesh	Pakistan	China	Germany	Argentina	United States
Per capita demand(kg)	80	80	80	80	80	80
Per capita consumption(kg)	7.3	19	50	100	70	100

Source: World Health Organization -2014

Above this table per capita demand of meat is 80kg but per capita consumption is 7.3 kg it is smaller than demand comparatively other countries. So, fulfillment of our per capita consumption to imported of cattle from India to Bangladesh. There are large number of cattle are imported from India to Bangladesh is legal way or illegal way.

India and Bangladesh are separated by a 4098-km border passing through flat and hilly terrain, rivers and jungles. In some parts, the border passes through heavily populated areas with cultivation extending to the very edge of the border. Border pillars remain the only identification of the international boundary. What makes the areas abutting the border both interesting and complex is that the communities who straddle the political boundary are of the same ethnic stock, with common language, traditions and culture. Since there are countless streams and rivulets, it is not easy to establish and maintain border pillars on these river islands or *chars*. Varying seasons make it even more difficult to identify where Bangladesh begins. Many of these islands, clearly visible during the dry seasons, disappear when the monsoons arrive with thunderclaps. This makes effective patrolling difficult in these areas. It however encourages smugglers of all kinds—trading in contraband and cattle. The government has already taken initiative to improve 35percent of the existing cows as cross breed to meet the rising demand and meat production from a developed cow would increase to 360-380 kg compared to maximum output of 75-100kgs now. The DLS was also considering of meeting the shortage by rearing buffaloes as milk & meat production for buffaloes was much higher than cows. The initiative pilot project in 2012 to improve the buffalo quality in the country by cross breeding technology with an aim to increase milk production .Work is going on to create breeds there are highly yielding (milk & meat) more disease resistance and suitable for Bangladesh environment .However the hectare density of cattle head in Bangladesh was higher than any other countries in the world. In Bangladesh, the number of cattle head per hectare is 2.49 while it is 1.12 in India 0.70 in Pakistan 0.38 in the United States 0.81 in Denmark and 0.38 in Kenya (WHO-2014). This meat production is increases due to poultry meat production which is same meat production in case of cattle, buffalo, sheep and goat. The information of DLS the slaughter of animal is 6 million in a year in Bangladesh which is 25% or 1.50 million animals are imported from India to Bangladesh. The slaughter of goat is 15 million per year which is produce of goat in our country. This slaughter of animal is 55% slaughter during Eid-ul-Azha. The source of animal is (1) Animal production from village (2) Beef fattening program (3) The culled animal (ox and cows) bullock rest of animal are imported from India.

Table1.2. Milk, meat and egg production per year

Product	Fiscals					
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Milk(million tons)	2.68	2.29	2.36	2.95	2.88	2.89
Egg(lack)	5653	4696	5653	6078	6323	8395
Meat(million tons)	1.04	1.08	1.26	1.99	1.99	1.17

Source: DLS 2013

Table1.3. Demand of Milk, meat and egg

Product	Demand	Supply	Production(2012)	Demand	Balance(+obsessiveness –handicap)
Milk	250ml/person/day	46miligram	2.89million tons	13.15million tons	(-)10.25
Egg	104pcs/person/year	41pcs/person/year	8395lack	14997lack	(-)6602
Meat	120gm/person/day	20.60gm	1.17million tons	6.31million tons	(-)5.137

Source: DLS 2013

Now days the cattle meat price is 500/kg and goat meat is 700/kg. The cattle meat price was 260/kg and goat meat is 450/kg in 2010.Generally the carcass price is obtain 60% farmer 15% butcher and 25%middle man. In 2015 human population will be increasing 1.37% and the demand of meat production is increasing about 2.90%.As a result the total production of meat will be increasing 1.0 million tons. The production of pure meat to export will be increasing in East Asia and Middle East Asia. There are many border are imported of cattle like Noagaon, Dinajpur, Rajshahi, Chapainawabgonj (Bakerali, Sultangong, Monohora, Satroshia, Bishroshia, Monacosha etc). Bakerali is the most important border to imported cattle & buffalo are legal & illegal way. Most of the cattle and buffalo are imported is illegal way. My study area is Bakerali which the large amount of cattle and buffalo are imported from India to Bangladesh its illegal

way due to political problem. I study some days in three month (February, March, and July) in Bakerali border due short time internship program.

Objectives:

1. To know how many cattle's and buffaloes are imported through the Indian boarder.
2. To know the conditions of the imported cattle and buffaloes.

CHAPTER- 2

MATERIALS AND METHODS

2.1. Description of study area:

Rajshahi is the largest city, located in northwestern part of Bangladesh. Chapainawabganj is a district under Rajshahi Division. Chapainawabganj is a district which is situated beside the Indian boarder. As a result most of the cattle's and buffalos are imported in our country through this border. In chapainawabgonj there are many places for importing the cattle's and buffalos like Bakerali, Jahurpur, Sultangonj, Shatrosia, Bishrosia, Monakasha, Monohorpur etc. Among them Bakerali is the largest boarder for importing animals. For this reason we selected the Bakerali for our study.

Figure 2.1: Study area map.

2.2. Study duration:

The study was conducted during the period of February to July, 2015. Animal information was collected from cattle herd (bit) in a pre-structured questionnaire. Total number of (N=2569) animals were selected, of which Hariana cattle (n= 1273), Nepali cattle (n= 206) and buffalo (n=1090), were selected.

| Bakerali border in chapainawabganj | Bakerali Cattle & buffalo Market | Collection of information. |
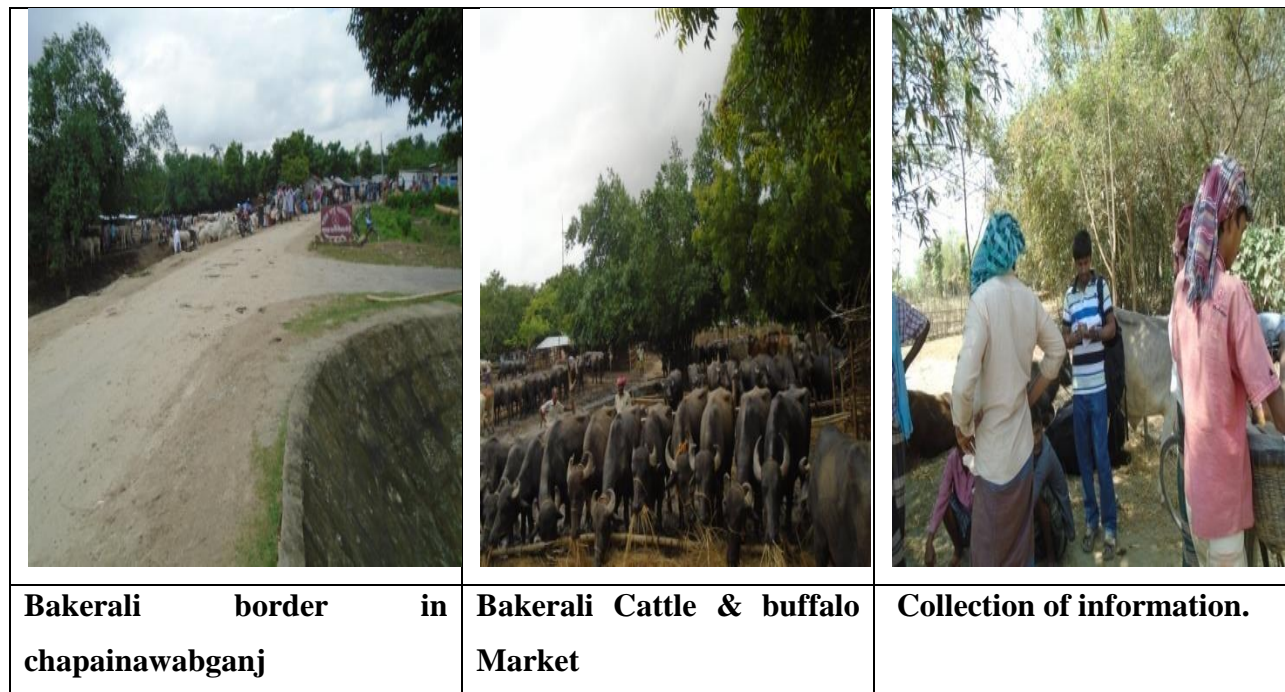
Figure 2.2: Cattle markets and collection of information

2.3. Age determination

According to the form and location in the mouth, the teeth are classified as incisors, canines, premolars and molars. In ruminants including cattle upper incisors are replaced by dental pad. With the advancement of the animal's age, the teeth start wearing off and the changes in the teeth at different period of life span serve as the indicator of the animal's age (Banerjee, 2000).

Table 2.1: Determination of animal age by dentition (Banerjee, 2000).

Name of teeth	Approximate age (Years)
Incisor 1	$1\frac{1}{2} - 2$
Incisor 2	$2 - 2\frac{1}{2}$
Incisor 3	$2\frac{1}{2} - 3$
Incisor 4	$3\frac{1}{2} - 4$

2.4. Determination of breed:

The Hariana cows are fairly good milkers. These animals have small heads with long, narrow faces, long and curve horn, legs are long. The tail is thin and short. In cows the udder is well developed with prominent teats. These cattle are generally white or light grey. Nepali breed are red in color and large in size triangular head legs are large in size and tail is long. Murrah have heavy wedge shaped body with small head, long face and neck. It has a jet black color, the tail is long reaching the fetlock joint. The skin is soft, smooth with scanty hairs as compared to other buffaloes. The udder is fully developed, drooping, with the teats equally distributed over the udder but hind teats are longer than fore teats.

2.5. Determination of Body Weight:

Body weight of cattle will be measured both in immediately after transportation and after 24 hours of rest by using body weight measuring tape. The formula is

$$BW(Kg) = \frac{LG^2}{600}$$

Where, L= Length from

G = Heart Girth

Body weight shrinkage was determined by the following formula and expressed as percentage:

% Body weight recovery $= \frac{(W_1 - W)}{W_1} \times 100$

Where,

W= Body weight of cattle immediately after transportation

W_1= Body weight of cattle after 24 hours of transportation

2.6 Statistical analysis:

Means with standard deviations of different age and live weight of imported animals were analyzed using the following statistical design with PROC GLM of SAS (SAS, 2012). The statistical design is as:

$Y_{ijkl} = \mu + T_i + B_j + S_k + e_{ijkl}$

Where

Y_{ijkl} is the values of age and live weight of imported animals

μ is the overall mean;

T_i is the effect of ith time (month);

B_j is the effect of jth breeds;

S_k is the effect of kth sex;

e_{ijkl} is the effect of error, which is normally distributed as N $(0,\sigma^2)$.

Mean differences were separated using least significant difference (LSD) test (Steel et al., 1997).

CHAPTER-3

RESULTS AND DISCUSSION

The Number of imported animals according to month, species, breeds, sex and coat color through Bakerali boarder is presented in table 4.1

Table 3.1: Number of imported animals according to month, species, breeds, sex and coat color through Bakerali boarder

Parameters	Number	Percent (%)
Month		
July	2054	79.95
February	309	12.03
March	206	8.02
Species		
Cattle	1479	57.57
Buffalo	1090	42.43
Breeds		
Hariana	1273	86.07
Nepali	206	13.93
Sex		
Bullock	2316	90.15
Male	218	8.49
Female	35	1.36
Coat color		
White	1258	48.97
Black	1105	43.02
Red	206	8.01

The total no of animal was 2569, among them the number of cattle was 1479 (57.57%) and buffalo was 1090 (42.43%). The highest 79.95% cattle and buffalo were imported in July due to the time is before Eid-ul-Azha, in that time the river is full of water and available grass are present, the boarder is easy to importation of animal. In February and March that was 12.03% and 8.02% respectively. In that time the river is not full of water, the boarder is not easy to importation of animal. Among the two breed of importation of Hariana breed was 86.07% and in case of Nepali breed it was 13.93%. The Hariana breed is available than Nepali breed due to the origin and geographical location of our country. For bullock importation was 90.15% and for male and female it was 8.49% and 1.36% respectively. The importation of animal was highest for white coat color (48.97%), for black it was little bit less (43.02%) and it was lowest for red coat color animal (8.01%). The Hariana breed (white coat color) is draught cattle which are bullock and red color breed is Nepali so Hariana is higher imported than Nepali. From the report of Daily Star, (11 September 2015) we saw that 35,147 Cattle and Buffalo 10,152 were imported in Bangladesh through Kurigram boarder. The number of cattle and Buffalo which is imported from India to Bangladesh through Kurigram boarder which is dissimilar to Bakerali boarder due to before the Eid-Ul-Azha ,easy transpiration system of cattle and buffalo, less political harassment and weak Boarder Check post in Kurigram. From the another report of Prothom Alo(1 September 2015) we saw that the number of imported cattle and buffalo from Myanmar through Cox' Bazar border were cattle 10,512 and buffalo 2526 which is dissimilar to our study due to the cattle and buffalo production is less in Myanmar, the border check post is strong, transportation system is difficult.

Table 3.2: Age and weight of imported cattle and buffaloes from India through Bakerali border in different months

Month	Breed	Sex	color	Age (month)	Weight
February	Hariana	Male	White	59.88±12.72	288.52±41.82
		Bullock	White	74. 28±13.92	311.52±31.24
		Female	White	57.96±4.8	266.66±25.81
	Nepali	Male	Red	66.96±14.04	369.16±41.72
		Bullock	Red	63.36±11.4	364.28±47.55
March	Hariana	Bullock	White	72.72±8.4	327.04±25.81
			Black	79.68±14.04	320.66±26.31
	Nepali	Male	Red	84±13.8	366.67±43.30
		Bullock	Red	77.16±12.12	346.98±23.88
July	Hariana	Male	White	72±14.48	320.73±24.93
		Bullock	White	72±12.48	322.12±26.25
	Nepali	Male	Red	66±8.52	359.58±31.74
		Bullock	Red	70.92±9.84	361.98±22.28

The weight and age of different animal imported from Bakerali border is presented in table (4.2). In February 2015 there was found two types of cattle imported through Bakerali border, Hariana and Nepali respectively. For Hariana there was white male, female and bullock. Mean age of White Hariana male was 59.88±12.72 months where the mean weight of Hariana male was found 288.52±41.82 kg. Mean age of White Hariana bullock was 74.28± 13.29 months and their mean weight was 311.52 ±31.24 kg. For white Hariana female the mean age was found 57.96 ±4.8 months and their mean weight was 266.66 ±25.81 kg. In case of Nepali there was red male and red bullock. The mean age of Nepali red male was 66.96±14.04 months and mean weight was 369.16±41.72 kg. Age of Nepali red bullock was 63.36±11.4 months and their mean weight was 364.28±12.8 kg.In March 2015 there was found two types of cattle imported through Bakerali border, Hariana and Nepali respectively. For Hariana there was white and black bullock. Mean age of White Hariana bullock was 72.72±8.4 months black Hariana bullock was 79.68±14.04 months and their mean weight was 320.66±26.31 kg. In case of Nepali there was red male and red bullock. The mean age of Nepali red male was 84±13.8 month and mean weight was 369.16

±43.30kg .Age of Nepali red bullock was 77.16±12.12 months and their mean weight was 346.98±23.88 kg.In July 2015 there was found two types of cattle imported through Bakerali border, Hariana and Nepali respectively. For Hariana there was white and black bullock. Mean age of White Hariana bullock was 72±14.48 months where black Hariana bullock was 72± 12.48months and their mean weight was 320.73±24.93 kg. In case of Nepali there was red male and red bullock. The mean age of Nepali red male was 66±8.52 months and mean weight was 359.58±31.74 kg. Age of Nepali red bullock was 70.92±9.84 months and their mean weight was 361.98 ±22.28kg. From the Study of Joyeeta Bhattacharjee, (July- 2013) we saw that, the average age and weight of imported Hariana cattle were 72 months and 300-350 kg which is similar to our present study because of all cattle and buffalo are imported in Bangladesh for slaughter purpose. As a result the mature cattle and buffalo are imported from India.

CHAPTER- 4

CONCLUSION AND RECOMMENDATION

The study was done to evaluate the frequency of cattle and buffalo are imported from India to Bangladesh in different period. During Eid-Ul-Azha more animal are imported due to more demand of meat. More emphasis should be given to increase the production of indigenous cattle so that we can meet our demand of meat by our native cattle. From this view following recommendation are:

1. In case of commercial dairy farm the male calf rearing is costly due to feeding of mother milk, if the male calf are rearing by milk replacer and using developing rearing system of this calf to easily increase the meat production.
2. The subsidy of livestock farmer like cattle feed, treatment, management and different technique to rearing male calf directly from government to fulfillment of meat demand.
3. Our Government should be given the beef fattening program.

REFERENCES

A report on livestock in Bangladesh, Department of Livestock Services -2013

A report on livestock in world, World Health Organization -2014

Banerjee, G.C. 2000. Determination of Age of Cattle. A textbook of Animal Husbandry, 8th ed., Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi, India. pp: 761-763.

Joyeeta, B. (July, 2013) India Bangladesh border management, The challenge of cattle smuggling, Observer research foundation.

Report on cattle and buffalo import on Cox's Bazar border, The Prothom Alo, 1st September, Report on cattle and buffalo import on Kurigram border, The Daily Star, 11th September, 2015

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BIOGRAPHY

My name is Md. Abu Musa. I am from Roghupara, Bagmara, Rajshahi. I passed SSC   from Mochmail High School in 2006 and HSC from New Govt. Degree College in 2008 from Rajshahi board, Bangladesh. Now I am intern student of faculty of veterinary medicine, Chittagong Veterinary and Animal Sciences University. This study was the inauguration of myself in the era of research and I have a strong intention to involve myself in this types of activities in future.