

## Chapter: I

### INTRODUCTION

Livestock is an important component of the mixed farming system practiced in Bangladesh for centuries. Ruminant, especially cattle and goats constitute the major portion of the livestock. According to DLS, (2016) the population of cattle and goat in Bangladesh is 237.85 lakh and 257.66 lakh respectively. The number of livestock is increasing worldwide as well as our country and they are becoming increasingly important around the world for a variety of reasons. Most of these animals are reared under smallholder traditional management system in rural areas. In Bangladesh the livestock sector is highly important in rural area because it works as big economic source for the poor people. The economy of Bangladesh is agro based. About 52% of the gross domestic product (GDP) comes from agricultural sector of which crops alone shares 38.8%, livestock 65%, fisheries 3.5% and forestry 3.2% (Sikder, 1990). Basically there are two major production systems like milk and meat production in our country. As Bangladesh is a developing country it has various importances of livestock and its products and by products. Cattle and goat are important as they plays an important role as source of food, supply raw materials like milk, skin, and mostly they share in the GDP is 23.21% (DLS, 2008) which shows that it is an important sector in Bangladesh.

But there are some drawbacks in contrast of livestock rearing. Diminishing grazing land for animal, lack of livestock farm, lack of proper care of cattle and goat due to inadequate knowledge of illiterate people in rural areas. As rural people are poor and economically not strong they can't maintain between the high prices of animal feed and low prices of animal products.

The management practices of animals and geo-climatic condition of Bangladesh are favorable for the occurrence of various diseases.

The percentages of occurrence of fever was 5.1% to 12.1% in cattle (Samad, 2001; Samad *et al.*, 2002; Rahman *et al.*, 2012) and 10.37% and 4.4% cases of fever in goats ( Rahman *et al.*, 2012). Anorexia was one of the commonest problem amongst the non specific clinical

entities in routine ruminant practice (Prasad *et al.*, 1980). The percentage of occurrence of bloat was 2.2% in cattle and 2.5% in goats (Rahman *et al.*, 2012). Prevalence of bloat was 1.83% in cattle and 3.98% in goats (Samad, 2001). It was reported that 1.73% cases of bloat in cattle from some Upazilla Veterinary Hospitals (Sutradhar *et al.*, 2000). Non-specific diarrhoea in dairy cows was found as 6.94%, 8.99% in calves and 12.23% in goats (Hoque and Samad, 1996, 1997). The record was 7.6% in cattle and 12.1% in goats (Rahman *et al.*, 2012). It was reported that 25.97% and 9.91% of diarrhoeal diseases in cattle and goats, respectively (Samad, 2001). The prevalence of diarrhoeal diseases in cattle was 4.78% (Rahman *et al.*, 1999). It was recorded 5.1% and 16.8% cases of pneumonia in cattle and goats (Rahman *et al.*, 2012). Whereas it was 0.84% (Samad, 2001; Samad *et al.*, 2002) and 5.1% and 16.8% cases of pneumonia was in cattle and goats (Rahman *et al.*, 2012). Cases of pneumonia in cattle 0.84% (Samad, 2001, Samad *et al.*, 2002). Sub clinical prevalence of Fascioliasis in cattle was 21% (Howlader *et al.*, 1990). The clinical prevalence of Paramphistomiasis recorded in cattle has been reported from Bangladesh but detail studies on this disease have not yet been made from the country. Clinical mastitis was 0.89%, 0.71% and 0.9% in cows, (Sarker *et al.*, 1999, Samad, 2001, Rahman *et al.*, 2012). It was reported that 22.0% incidence of repeat breeding syndrome in cattle (Rahman *et al.*, 1975) and 63.0% incidence of repeat breeding syndrome among the reproductive disorders in cattle (Hossain *et al.*, 1986). However, It was reported 0.64% cattle with prevalence 1.26% (Rahman *et al.*, 1999) and 0.24% prevalence of repeat breeding syndrome was in cattle and goats (Samad, 2001). 1.1% cattle and 1.3% goats were affected with abscess at Patuakhali Science and Technology University Veterinary Clinic, Babugonj, Barisal (Rahman *et al.*, 2012). 1.2% cases of abscess in cattle was reported (Hossain *et al.*, 1986) and 1.56% abscess cases in goats was recorded (Samad, 2001). 10.1% navel-ill was in calves (Rahman *et al.*, 2012). Das and Hashim (1996) It was also reported that 6.40% navel-ill in calves. (Das *et al.*, 1996) However, it was recorded that 0.79% and 0.62% navel-ill cases in calves and kids, respectively (Samad, 2001).

Veterinary hospital is an ideal and reliable source of information about animal diseases and their solution. People from the neighboring areas bring their sick animals to the Veterinary hospital every day. But sufficient number of veterinary hospital is also not available. Analysis of the case record gives a comprehensive idea about the disease problems at local areas. In the last few decades, as the major infectious diseases of cattle in Bangladesh are brought under control by vaccination and farmer's awareness, emphasis has increasingly shifted to

economically important diseases to the dairy producers. However, more information is required to describe the pattern of occurrence of clinical diseases for the provision of appropriate veterinary care and effective disease control programme and animal production. For the development of economic condition essential remedy should be taken, especially for the developing country like us. Research center and veterinary hospitals should perform their activities properly. Foreign assistance for livestock can be authorized. As most of the people are unconscious about the proper way and time of deworming, vaccination etc., it should be ensured to teach them by various programmes, seminar and meetings.

As my study is related to figure out a proportional prevalence of different important disease and their to know the scenario of their management mainly in cattle and goat around my Upazilla veterinary hospital and I needed to collaborate with the rural people, it is helpful to estimate the rural livestock production, highly prevalent diseases which causes a greater losses in the livestock production at rural community.

In my study area parasitism is also one of the big problem which affects the health and productivity of livestock. The hygienic management of the animal can be the greatest solution of all sorts of disease. 80% mastitis case that I have found are due to proper management after parturition.

In the last few decades, as the major infectious diseases of cattle in Bangladesh are brought under control by vaccination and farmer's awareness, emphasis has increasingly shifted to economically important diseases to the dairy producers.

The current study was conducted with the aim of the following objectives:

**Objectives of the study:**

1. To estimate proportionate prevalence of various diseases in cattle and goat in Matlab South upazilla, Chandpur .
2. To know the pattern of occurrence of clinical diseases.
3. To explore probable potential risk factors associated with occurrence of the diseases under the study.
4. To determine the frequency of drugs prescribed against different diseases at upazilla veterinary hospital.

## CHAPTER: II

### MATERIALS AND METHOD

#### 2.1 Description of study area:

Chandpur, considered as the gate way of eastern Bengal located between 23°29' to 24°04' North latitudes and between 90°06' to 91°09' east longitude . The tropical monsoon climatic condition characterizes by annual average temperature of 17°C to 32°C, humidity of 79%. Around 1468 people/ sq Km live in this district. Livestock rearing is common practice in Chandpur as major or subsidiary income source. The predominant livestock includes cattle, goat as well as poultry (backyard and commercial). In Chandpur district the total population of cattle, goat and poultry are 115615 , 100566 and 159150. (DLS, 2011). Goat and cattle are reared in intensive, semi intensive, free range and tethering system in Chandpur. Farmers use to keep their animal in their own houses as well as separate houses with low biosecurity and hygienic standard. The backyard and smallholding farmers rear the animals as meat purpose.

#### 2.2 Study area:

The present study was conducted in Upazila veterinary hospital, Matlab south Chandpur . Most of the animal in this area are reared by farmers at their homestead and are managed under rural husbandry practice. The total number of cattle and goat at Matlab south are about 11275 and 14432.



Fig: Chandpur district



Fig: My study area (Matlab south)

Study population:

At first the animal (cattle and goat) were included in this study by observing clinical signs. The study was conducted with 164 animals which were collected from the upazilla veterinary hospital for a period of 2 months.

The diseases were determined by inspecting the physical characters of the animal or by carefully cross questioning to the owner

### **2.3 Data collection:**

A questionnaire was designed previously to collect information. It is a mixed type of open and close questionnaire. There was no age limitation in this study

### **2.4 Examination of the animal:**

In case of different diseases the clinical signs were different, such as in worm infestation the signs were: inappetance, loss of weight, bottle jaw syndrome, history of feeding of water hyacinth etc. In case mastitis there was hardening of quarter of udder, closing of teat canal. In case of acidosis of goat there was swelling of abdomen, cessation of feeding was the common signs. In case of nutritional deficiency there was history of low graded feed, no supply of vitamin supplement, imbalance in ration of daily feed.

### **2.5 Detection of diseases either by clinically or physical examination:**

#### ***Parasitic infestation:***

Parasitic infestation is very common for all types of animal like cattle, goat in current study area. The worm infestation was diagnosed by these clinical signs: profuse diarrhoea, emaciation, inappetance, history of no deworming.

#### ***Mastitis:***

Mastitis is very common disease for cow and doe. The main features of this disease are swollen udder, pain, block of teat canal, clotted milk, color change of udder.

#### ***Dog bite:***

Dog bite also a very common scenario for animal in my study area. The main features are - scratching mark, wound, and oozing of blood.

#### ***Nutritional deficiency:***

Nutritional deficiency is common to almost the entire animal. The farmers have not much knowledge about nutrition in food. so there is lacking of nutrition. The main features are - emaciation, lower growth rate, symptoms of other disease.

***Acidosis:***

I have found acidosis mainly in goat. In rural area it is a great problem. The common features by which the acidosis is diagnosed that are swollen abdomen, off feeding, There is history of feeding rice, bread etc. In PH meter low of PH of ruminal content was found.

**2.6 Statistical analysis**

All the data from the animals were entered into MS excel (Microsoft office excel-2007, USA). Data management and data analysis were done by STATA version-13 (STATA Corporation, 4905, Lakeway River, College Station, Texas 77845, USA). The association of disease occurrence with different variables was evaluated by using Fisher exact test.  $P < 0.05$  set for significance.

### Chapter: III

## RESULT AND DISCUSSION

During the study period a total of 164 clinical cases of which 121 cattle and 43 goat cases were recorded and analyzed. Among the clinical cases, parasitic infestation (cattle 26.45% and goats 39.53%), mastitis (cattle 7.44% and goats 6.98%), systemic infection (Cattle 4.13% and goat 4.65%), wound (cattle 6.61% and goat 4.65%), acidosis (cattle 1.65% and goat 2.33%), enteritis (cattle 8.26% and goat 6.98%), bloat (cattle 2.48%, goat 9.30%) were recorded as major disease problems in both cattle and goats. Beside these conditions cattle were presented in the hospital with abscess 0.83%, anestrous 6.61%, anorexia 2.48%, nutritional deficiency 18.18%, pneumonia 1.65%, naval ill 1.65% and hernia 1.65%. In case of goat arthritis 6.98%, dog bite 9.30%, PPR 4.65%, rabies 2.33% is also recorded.

**Table 1:** Prevalence of clinical conditions in cattle.

<b>Diagnosis</b>	<b>No. of cattle (%)</b>
<b>AI</b>	2 (1.65)
<b>Abscess</b>	1(0.83)
<b>Acidosis</b>	2(1.65)
<b>Allergy</b>	1(0.83)
<b>Anestrous</b>	8(6.61)
<b>Anorexia</b>	3(2.48)
<b>Atresia Ani</b>	1(0.83)
<b>Bloat</b>	3(2.48)
<b>Coccidiosis</b>	1(0.83)
<b>Cold</b>	1(0.83)
<b>Congenital skin scrub</b>	1(0.83)
<b>Enteritis</b>	10(8.26)
<b>FMD</b>	1(0.83)
<b>Heat stress</b>	1(0.83)
<b>Hernia</b>	2(1.65)
<b>Mastitis</b>	9(7.44)
<b>Naval ill</b>	2(1.65)

Nutritional deficiency	22(18.18)
Parasitic infestation	32(26.45)
Pneumonia	2(1.65)
Poisoning	1(0.83)
Post parturient bleeding	1(0.83)
Repeat breeding	1(0.83)
Systemic Infection	5(4.13)
Wound	8(6.61)
<b>Total</b>	<b>121(100.00)</b>

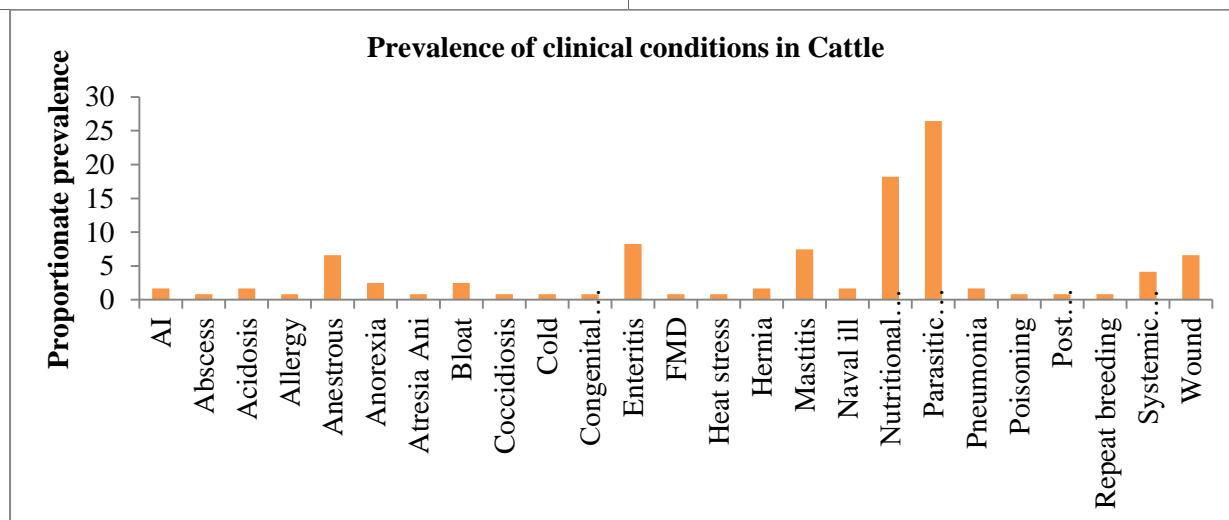


Fig 1: Prevalence of clinical conditions in cattle

A previous study showed that gastrointestinal nematodiasis (cattle 37.8% and goats 19.6%), diarrhoea (cattle 13.4% and goats 19.6%), fascioliasis (cattle 12.4% and goats 1.6%), paramphistomiasis (cattle 8.8% and goats 2.6%), fever (cattle 7.8% and goats 12.7%) (Karim *et al.*,2014) which supports our study. Among the gynaeco-obstetrical cases, retained placenta (cattle 30% and goats 50%) and repeat breeding (cattle 70% and goats 50%) were recorded found. Abscess was found in cattle 45.8% and in goats 5.6%. Myiasis was observed in 20.8% cattle and in 20.8% goats. navel ill was found in 12.5% cattle. 20.8% cattle and 44.4% goats were suffering from urolithiasis and overgrown hoof was found in 33.3% goats. gid disease was seen in 5.6% goats (Karim *et al.*, 2014).



Table 2: Prevalence of clinical conditions in goats.

<b>Diagnosis</b>	<b>No. of goats (%)</b>
<b>Acidosis</b>	1 (2.33)
<b>Arthritis</b>	3(6.98)
<b>Bloat</b>	4(9.30)
<b>Dog bite</b>	4(9.30)
<b>Enteritis</b>	3(6.98)
<b>Estrus</b>	1(2.33)
<b>Mastitis</b>	3(6.98)
<b>PPR</b>	2(4.65)
<b>Parasitic infestation</b>	17(39.53)
<b>Rabies</b>	1(2.33)
<b>Systemic infection</b>	2(4.65)
<b>wound</b>	29(66.28)
<b>Total</b>	43(100.00)

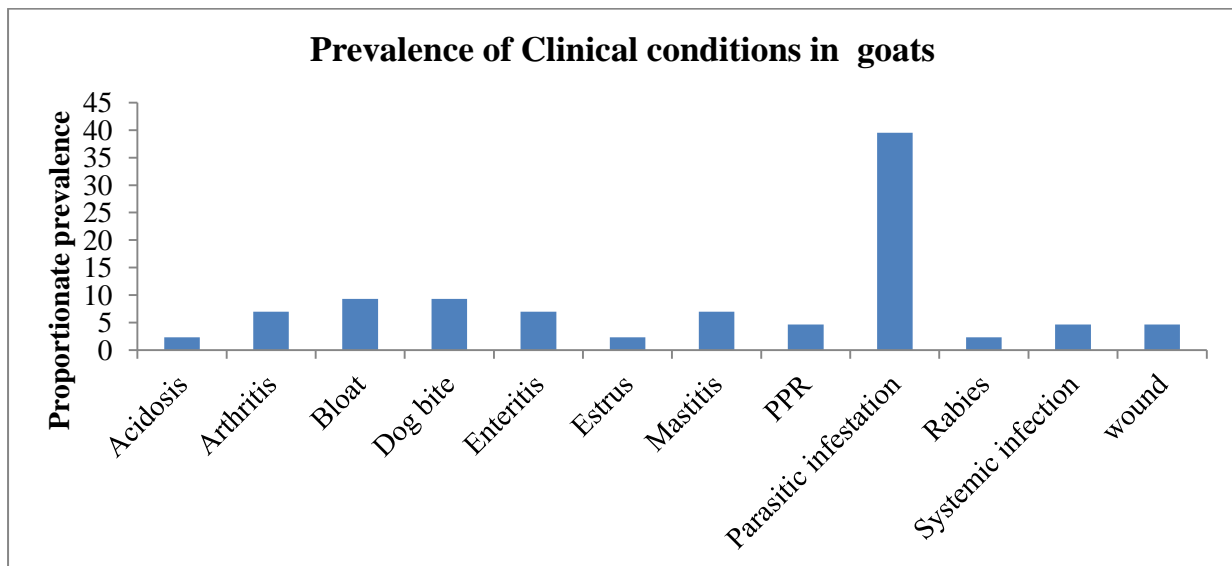


Fig 2:Prevalence of clinical conditions in goat

The overall scenario of drugs used for treatment of diseases in cattle at my study site Upazilla Veterinary Hospital was artificial insemination 2.48%, amoxicillin 3.31%, amoxicillin and ketoprofen 1.65%, appetizer 3.31%, calcium and phosphorus 14.88%, ciprofloxacin 0.83%, fluid therapy 0.83%, gentamycin 5.79%, ivermectin 2.48%, ketoprofen 3.31%, metronidazole 0.83%, nitroxynil 6.61%, oxytetracycline 10.74%, paracetamol 1.65%, sodium bi carbonate 4.13%, sulphadimidine 7.44%, triclabendazole 4.96%, triclabendazole and levamisole 14.88%, vit.suppliment 2.48% and vit-E and selenium 7.44%.

Table 3: Drugs used in cattle

<b>Treatment</b>	<b>No. of cattle (%)</b>
<b>AI</b>	2 (4.65)
<b>Amoxicillin</b>	4(3.31)
<b>Amoxicillin, Ketoprofen</b>	2(1.65)
<b>Appetizer</b>	4(3.31)
<b>Calcium, Phosphorus</b>	18(14.88)
<b>Ciprofloxacin</b>	1(0.83)
<b>Fluid trerapy</b>	1(0.83)
<b>Gentamycin</b>	7(5.79)
<b>Ivermectin</b>	3(2.48)
<b>Ketoprofen</b>	4(3.31)
<b>Metronidazole</b>	1(0.83)
<b>Nitroxynil</b>	8(6.61)
<b>Oxytertacycline</b>	13(10.74)
<b>Paracetamol</b>	2(1.65)
<b>Sodium bi carbonate</b>	5(4.13)
<b>Sulphadimidine</b>	9(7.44)
<b>Triclabendazole</b>	6(4.96)
<b>Triclabendazole, Levamisole</b>	18(14.88)
<b>Vit .Suppliment</b>	3(2.48)
<b>Vit-E and selenium</b>	9(7.44)
<b>Total</b>	121(100.00)

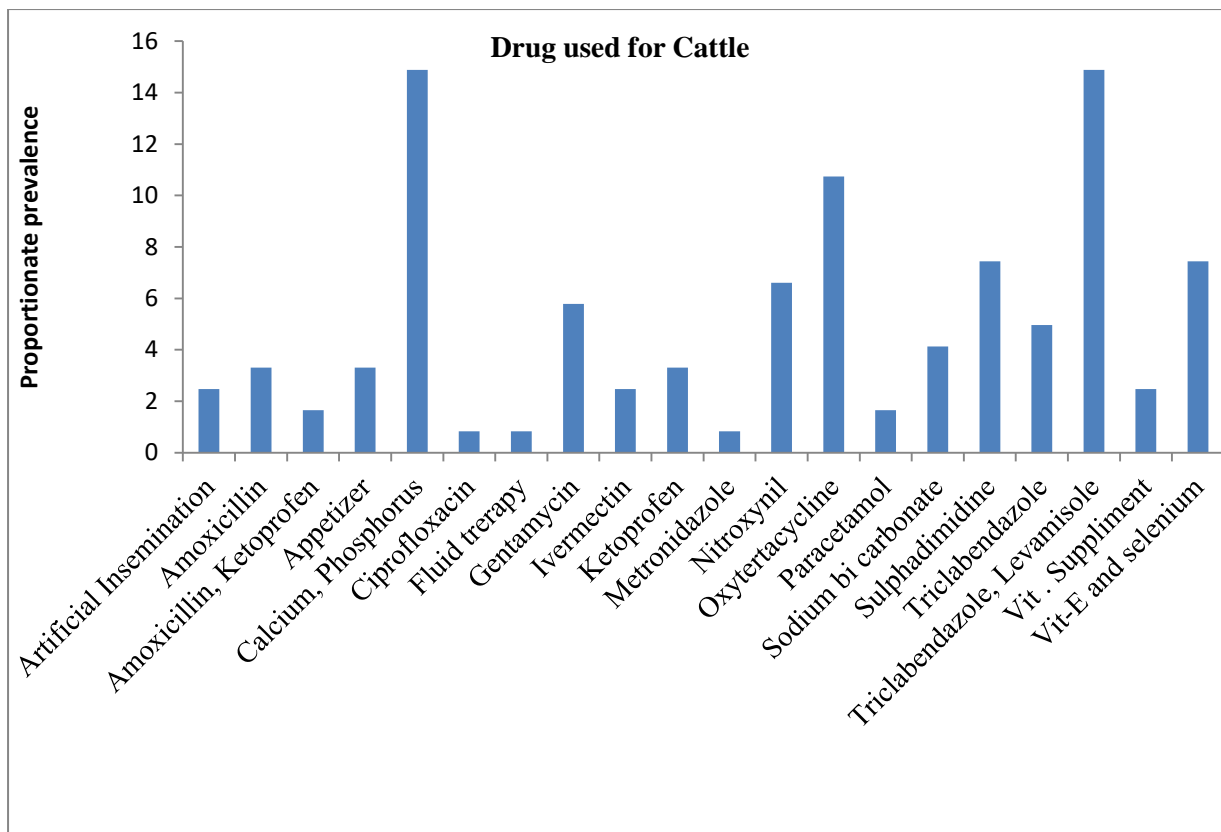


Fig 3:Drugs used for cattle

In case different disorders of goats amoxicillin 4.65%, appetizer 4.65%, doxycycline and oxytetracycline 2.33%, gentamycin 6.98%, ivermectin 2.33%, ketoprofen 9.30%, nitroxylnil 25.58%, oxytetracycline 13.95%, renamycin 2.33%, sodi bi carb 11.63%, triclabendazole 4.65%, triclabendazole and levamisole 2.33%, sulfadimidine 6.98%, vit-E and selenium 2.33% were used for the treatment. The result shows that in case of both cattle and goat anthelmintics such as triclabendazole ,levamisole and nitroxylnil were highly used.

Table 4: Drugs used in goats

Treatment	No. of goats (%)
Amoxicillin	2 (4.65)
Appetizer	2(4.65)
Doxycycline and Oxytetracycline	1(2.33)
Gentamycin	3(6.98)
Ivermectin	1(2.33)
Ketoprofen	4(9.30)
Nitroxylin	11(25.58)
Oxyteracycline	6(13.95)
Renamycin	1(2.33)
Sodi-bi-carb	5(11.63)
Triclabendazole	2(4.65)
Triclabendazole and Levamisole	1(2.33)
Sulfadimidine	3(6.98)
Vit-E and Selenium	1(2.33)
<b>Total</b>	<b>43(100.00)</b>

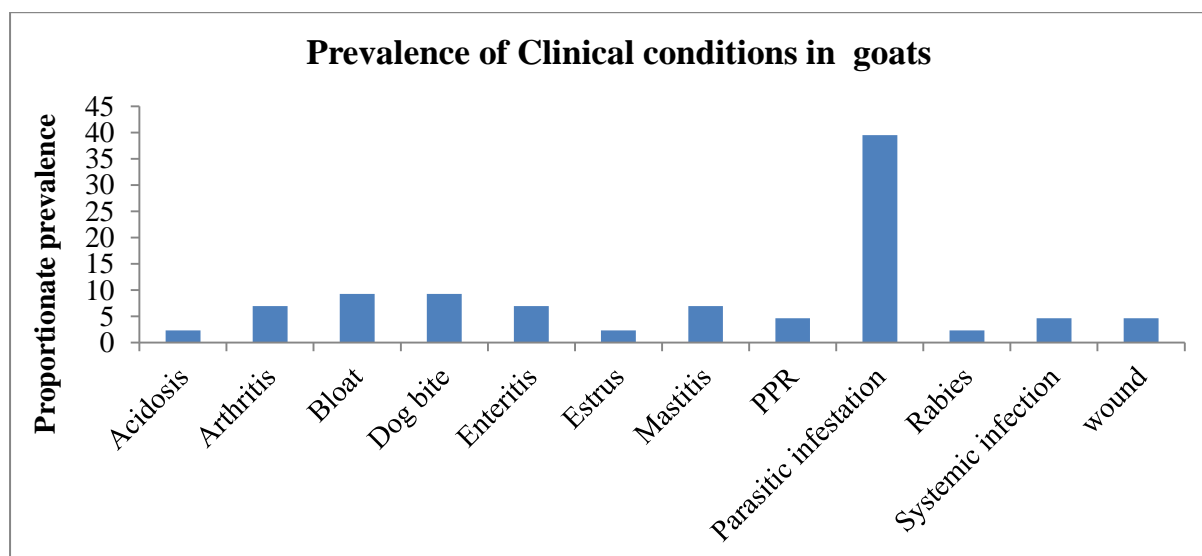


Fig 4:Drugs used for goats

In this study proportionate prevalence of parasitic infestation was found as most prevalent disease. The current study evidenced that of parasitic infestation was found

significantly higher in cross breed cattle (32.2%) compared to indigenous breed (19.4%) ( $p=0.079$ ). Maximum prevalence for parasitic infestation was for native cattle in Mymensingh, (sarder *et al.*, 2006) which partially disagrees with this study. The contrasts in findings of present study might be due to the feeding and management status as well as genetic variations of cattle.

Table 4.1 : Univariate association between selected factors and Parasitic Infestation in cattle in UVH.

Factor	Category	Parasitic Infestation		p (Fisher's exact test)
		Positive (%)	Negative	
Breed	Cross	19(32.2)	40	0.079
	Indigenous	12(19.4)	50	
sex	Male	10(23.26)	33	0.415
	Female	21(26.92)	57	
Age	Calf	4(12.90)	27	0.135
	Heifer/bullock	10(33.33)	20	
	Adult	17(28.33)	43	
Weight	Mi/40	9(23.68)	29	0.770
	41/80	6(21.43)	22	
	81/Max	16(29.09)	39	

Higher prevalence of parasitic infestation was observed in female (26.92%) in contrast with male (23.26%) ( $p=0.415$ ). According to a previous study the parasitic infestation was recorded higher in female (82.6%) than male (17.4%) (Das *et al.*,2010) which supports the current study.

One of the previous study showed that the age specific prevalence of parasitic infestations especially, *Paramphistomum* spp, *Schistosoma* spp, *Haemonchus* spp and *Fasciola* spp is higher in adult (22.12%,7.78%,3.33%,3.21%) cattle then young (Akanda *et al.*, 2014) which supports our study having higher prevalence in heifer and or bullock (33.33%), in adult cattle (28.33%) and in young calf (12.90%) ( $p=0.135$ ).

In case of goat the prevalence of parasitic infestation found higher in indigenous breed (32.35%) compared to cross bred goat (22.22%) ( $p=0.442$ ).

Table 4.2 : Univariate association between selected factors and Parasitic Infestation in goats in UVH.

Factor	Category	Parasitic Infestation		p (Fisher's exact test)
		Positive (%)	Negative	
Breed	Cross	2 (22.22)	7	0.442
	Indigenous	11 (32.35)	23	
Age	Min/12 month	7(30.43)	16	0.619
	13 /max	6(30.00)	14	
weight	Min/20	11(32.35)	23	0.442
	21/max	2(22.22)	7	
Sex	Male	2(20)	8	0.351
	Female	11(33.33)	22	

The current study showed that there is higher prevalence of parasitic disease in young goat (30.43%) than in adult (30.0%) ( $p=0.619$ ). It was found that prevalence of parasitic disease was higher in adult (3.57%) and old (4.29%) goat compared to young animal (1.43%) (Hossain *et al.*, 2011) which differ from our study. This contrast may be due to environmental condition, management and feeding habit.

This study also shows that there is higher prevalence of parasitic disease in female (33.33%) than male goat (20%) ( $p=0.05$ )

## **Chapter: I V**

### **LIMITATION**

The study area is located in a remote area of the Chandpur. Peoples of the area are not very much educated and aware about animal rearing and treatment. Sometimes they do not bring their animal for follow up and very often owners come to the hospital without the diseased animal for treatment. So it is needed to administer treatment without checking the animal.

## **Chapter: V**

### **CONCLUSION**

Cattle and goats are one of the promising species for future income generation for many people, offering scopes for reducing poverty and unemployment problem in Bangladesh. During the study period at my study area I have found different diseases in cattle and goat. Common infected diseases were parasitic infestation, nutritional deficiency ,mastitis, wound etc. Control of these diseases is essential for the improvement of national economy. So special attention should be given in rearing, management, vaccination, deworming etc .Poverty and lack of education among the rural people who mostly rear the domestic livestock are the main hinders to the better profitability and productivity. It can be concluded that on the basis of disease frequency worm infestation or parasitism ,nutritional deficiency causing the great health hazards in cattle and goat in my study area as well as Chandpur district.



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**The Author**

## **BIOGRAPHY**

I am Biethee Rani Sarker Daughter of Arun Chandra Sarker and Swapna Rani Sarker .I am from Chandpur district,Bangladesh. My SSC passing year is 2008 and HSC passing year is 2010.Now, I am intern student of faculty of Veterinary Medicine of Chittagong Veterinary and Animal Sciences University obtaining session (2011-2012). I hope to become a good veterinarian in future. I would like to serve the innocent animal by treating them and I feel lucky myself that almighty give me such type of opportunity to remain in close touch with the animal and serve the society as well as nation.