

Clinical cases at Fatikchari Upazila Veterinary Hospital: A focus on Contagious Ecthyma and Umbilical Hernia



A clinical report submitted by

Roll No: 16/44

Reg.No: 01661

Intern ID : 39

Session: 2015-16

A clinical report submitted in partial fulfillment of the requirement for
Doctor of Veterinary Medicine.

Faculty of Veterinary Medicine

Chattogram Veterinary and Animal Sciences University

Khulshi, Chattogram-4225, Bangladesh

Clinical cases at Fatikchari Upazila Veterinary Hospital: A focus on Contagious Ecthyma and Umbilical Hernia



Approved as to style and content by

Professor Dr. Sharmin Chowdhury
Department of Pathology and Parasitology

Faculty of Veterinary Medicine
Chattogram Veterinary and Animal Sciences University
Khulshi, Chattagram-4225, Bangladesh

Table of content

CHAPTER	CONTENTS	PAGE No
1	Abstract	01
2	Introduction	02 - 03
3	Materials and Methods	04 - 08
4	Results and discussion	09 - 11
5	Conclusion	12
6	Limitation	13
7	References	14 - 15
8	Acknowledgements	16
9	Biography	17

Abstract

A significant number of animals of different species were regularly presented to Fatikchari Upazilla Veterinary Hospital (UVH) from surrounding villages for treating clinical cases, deworming, vaccination etc. Diagnosis of cases were made based on clinical history, clinical signs as well as using common classical laboratory techniques. Distribution of cattle cases in the study area was as follows: 30.44% Foot and Mouth Disease, 13.04% diarrhoea, 8.69% umbilical hernia, 13.04% myiasis, 4.34% acidosis and 4.34% vaginal prolapse. Recorded goat cases were 13.64% dog bite, 4.54% keratoconjunctivitis, 13.64% contagious ecthyma, 27.27% PPR, 11.36% bloat and 9.09% acidosis. Contagious ecthyma was one of the unusual diseases found during the study. Among the surgical cases, 8.69% of the cases were umbilical hernia. As FMD in cattle and PPR in goat cases were high, strict vaccination schedule along with good standards of farm hygiene and bio-security recommended. Dog bite was found to be a problem for goats and proper care should be given if it is bitten by rabid dogs.

Chapter 1: Introduction

Bangladesh is the world's most densely inhabited, rural, and agrarian country. Cattle have long been an integral part of the mixed farming system utilized in Bangladesh. Similar to Bangladesh's high population density, the country's livestock population is similarly significant, with agriculture and livestock production employing about 80% of the population (BBS, 2021). Livestock is an integral sector of agricultural economy of Bangladesh performing multi-dimensional functions such as provision of food, nutrition, income, savings, draft power, manure, transport, social, and cultural functions (Tareque and Chowdhury, 2010). Bangladesh generates foreign currency through exporting a variety of byproducts such as hides, skin, and bone, and it is now creating biogas from cattle dung. In Bangladesh, livestock contributes roughly 1.44% of the country's Gross Domestic Product (GDP) whereas livestock subsector contributes 13.10% to agricultural GDP. Bangladesh has a population of 24.39 million cattle, 26.6 million goats and 320.6 million poultry (DLS, 2021). Furthermore, the livelihoods of almost 10 million people are directly dependent on these industries (Karim et al., 2010). It provided full-time work to 20% of the population and part-time employment to 50% of the population, as well as livestock products (meat, milk and eggs). However, due to starvation and infections, the majority of the animals are weak and malnourished, with poor productivity. Infectious and noninfectious diseases are the most significant limiting factors in the development of cattle, resulting in large mortality of adult cattle and neonatal calves each year (Debnath et al. 1990, Debnath et al. 1995). Variation in cow breed, sex, and environmental factors have been shown to have a significant impact on disease prevalence in livestock, including cattle (Alim et al. 2011, Sarker et al. 2011, and Islam et al. 2014).

The management practices of animals and the geoclimatic condition of Bangladesh are favorable for the occurrence of various diseases (Onneshan et al., 2014). It has been reported that about 10% of animals die annually because of diseases (Ali et al., 2011). These diseases are responsible for reduced production and mortality. Viral diseases like foot and mouth disease (FMD), bovine ephemeral fever, peste des petits ruminants (PPR), goat pox, contagious ecthyma, and rabies, and bacterial diseases such as mastitis, black quarter, pneumonia, tetanus, enterotoxaemia, foot rot and colibacillosis, and fungal diseases like ring worm infection are common causes for ruminant mortality in rural areas (Kashem et al., 2012). People from the surrounding areas frequently send their sick animals to the UVH in Upazila for clinical diagnosis and treatment. Other private and government veterinarians, as

well as non-veterinarians, refer cases to the UVH. In general, veterinarians assess patients and provide necessary therapy as well as guidance to their owners.

The purpose of this study was to observe the occurrence of livestock diseases in Fatikchari upazila sites in Bangladesh's Chattogram division, focusing on contagious ecthyma and umbilical hernia, taking into account breed, sex, and seasons. The current study's findings will provide an overall picture of the distribution of livestock diseases in the region, which will help researchers and clinicians plan and implement priority-based research on specific diseases, as well as develop effective disease control techniques.

Chapter 2: Materials and Methods

2.1 Study area

The study was conducted in Upazila Veterinary Hospital (UVH), Fatikchari, Chattogram. Fatikchari is one of the largest Upazila of Chattogram having a total area of 773.1 square kilometers.

2.2 Study period

Animals that brought to the UVH, Fatikchari were chosen during the period from February to April 2021.

2.3 Study population

A total of 67 cases including 23 cattle and 44 goats were included randomly in this study from the cases came to the UVH during the study period.

2.4 Questionnaire and data collection

A structured questionnaire was developed and administered to the owners to obtain information related to identity data of farmers as well as patient's details. Identity data include socio-economic status, education of owners and date of data collection. Patient data includes species, breed, age, sex, rearing system, vaccination, deworming etc. Other questions were filled after clinically examining the patient and providing treatment and follow up.

2.5 Anamnesis

The history of the sickness of the animals were recorded by carefully asking questions to the owners. Age and sex of the animals were also recorded. Age of the animals was determined by dentition and asking the owners.

2.6 Clinical Examination

Among clinical examinations body condition, temperature, consistency of feces and any prominent clinical signs were recorded. Based on these findings a presumptive diagnosis was made. In addition, skull bone was palpated to feel the thickness of bone, the umbilical region of the calves was examined for any swelling, wound or hernial ring. The hindquarter and thigh muscles were observed to see lameness and crepitation on palpation. The udders of the

cows were palpated to detect any enlargement, reddening or pain. The body surface of animals was examined for any swelling, wound or solid outgrowth. In ungulate animal mouth and feet were observed to detect any vesicle, wound or salivation. Cows with the history of failure to conceive were examined by rectal palpation whether there are any abnormalities of reproductive tract. Cows were observed with the hanging of retained fetal membrane after 12 hours of parturition. Ruminal movement was observed through palpation. Different joints of the animals were examined to detect any swelling or pain. Abnormal sound of respiratory tract was detected through stethoscope.

The following conditions were diagnosed on the basis of above mentioned procedure and clinical findings:

Medicinal cases: Case definition

Anorexia

Anorexia syndrome were diagnosed on the basis of owner's complaint with the history of partial and complete absence of appetite with varying decreased food intake. Prasad *et al.*, (1976).

Acidosis

In rural area it is a great problem mainly in cattle and goats. The common features by which the acidosis is diagnosed are swollen abdomen, off feeding. History of feeding rice, bread etc were taken into consideration also. In PH meter low PH of ruminal content was found.

Dermatitis

Dermatitis was diagnosed by the presence of hard, dry hyperkeratotic skin, alopecia, pruritis, reddening of skin etc.

Contagious ecthyma:

A contagious ecthyma case was initially suspected if an animal showed formation of erythematous macule, papule, vesicle, pustule and scab in lips, nostril, udder or hairless area of the body. Lesions often occurred first on the gum line as small, raised, red areas that become blisters. These blisters eventually rupture and combine into large scabs. Lesions were most common on the mouth of lambs/kids and on the udders of ewes/does. Animal loss their body weight due to inability to eat. All the clinical signs were properly noted in the record sheet.

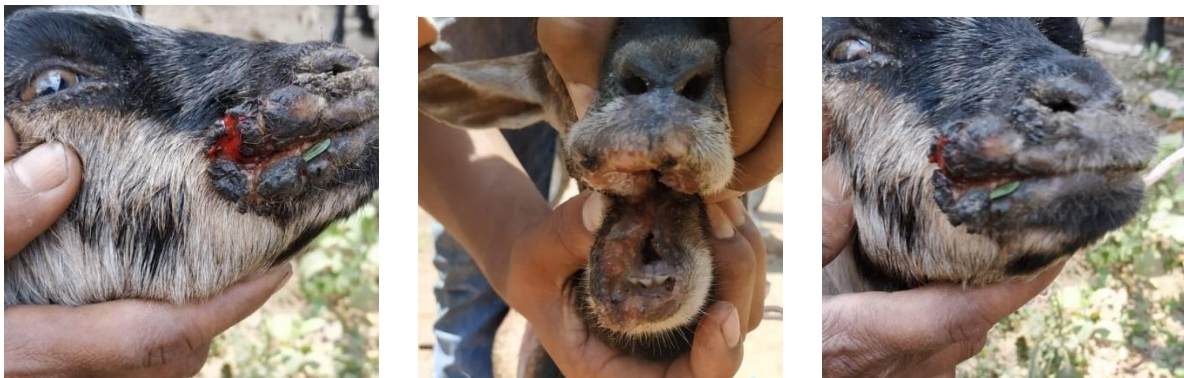


Figure 3: Contagious ecthyma

Foot and Mouth Disease (FMD)

FMD were diagnosed in calves and adult cattle on the basis of clinico-epidemiological determinants. The presence of fever and vesicular eruption in the mouth and on the feet of same animal with the history of rapid spread of the disease in bovine population wereregarded as Foot and Mouth Diseases.

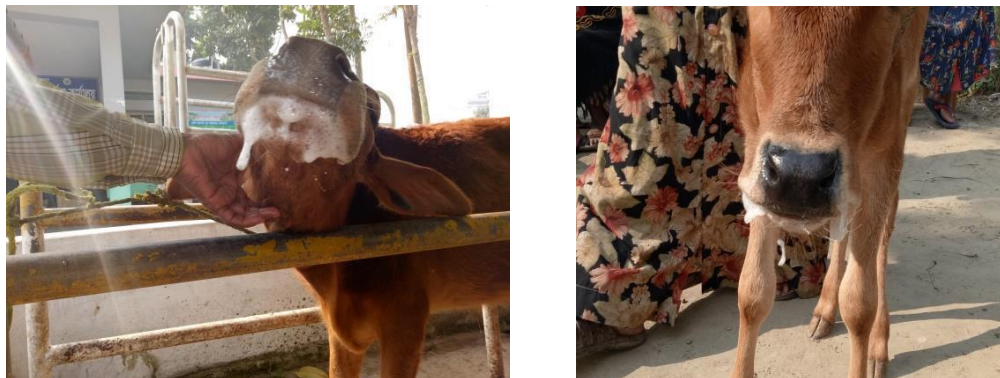


Figure 4: FMD in cattle

Infectious Keratoconjunctivitis

Infectious keratoconjunctivitis was diagnosed on examination. The presence of blephaarospasm, conjunctivitis, lacrimation, varying degrees of corneal opacity and ulceration was diagnosed as infectious keratoconjunctivitis.



Figure 5: Corneal opacity

PPR

Some common signs of PPR were noted as nasal discharge, intermittent diarrhoea, rising of body temperature etc. PPR was diagnosed in both kids and goats on the basis of clinico-epidemiological determinants (Samad, 2008).

Pneumonia

This disorder was diagnosed on the basis of owner's complaint and recording abnormal function of respiratory system like polypnoea, dyspnoea, coughing, sneezing, nasal discharge, thoraco- abdominal breathing etc.

Hypocalcemia

Hypocalcemia was shown as parturient paresis or milk fever. It was manifested by changes in mentation, generalized paresis and circulatory collapse.

Mastitis

Mastitis is very common disease for cow and doe. The main features of this disease was recorded as swollen udder , pain, block of teat canal, clotted milk, color change of udder (Radostits *et al.*, 2007).

Surgical cases: Case definition

Umbilical hernia

Confirmative diagnosis was made by exploratory puncture of the navel swelling and demonstration of intestinal contents. Detection of hernia ring with the index finger also aided diagnosis. Reducibility of the contents was detected by pushing the contents back to the abdominal cavity.



Figure 6: Umbilical hernia

Castration

There also had a few cases of castration in UVH. It was done in goats by close method.

Dog bite

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

Fracture

Fractures of long bones in cattle and goats were diagnosed by palpation method and presence of pain, swelling and discontinuation in the continuity of bone.

2.7 Statistical analysis

The data generated were entered into Microsoft Excel Worksheet (Microsoft excel 2010). Descriptive statistics were performed by calculating percentage of diseases according to age and sex.

Chapter 3: Result and discussion

Table !: Occurances of Diseases in Cattle and Goats Recorded at Upazilla Veterinary Hospital, Fatikchari, Chattogram

Sl. No.	Diseases	Cattle (n=23)		Goat (n=44)	
		No. of Affected Cattle	Percentage (%)	No. of Affected Goats	Percentage (%)
1.	Contagious ecthyma	0	0	6	13.64
2.	Keratoconjunctivitis	0	0	2	4.54
3.	Tetanus	0	0	2	4.54
4..	Acidosis	1	4.34	4	9.09
5.	Bloat	0	0	5	11.36
6.	Diarrhoea	3	13.04	0	0
7.	Pneumonia	1	4.34	2	4.54
8.	Actinomycosis	1	4.34	0	0
9.	FMD	7	30.44	0	0
10.	PPR	0	0	12	27.27
	Orchitis	0	0	1	2.27
	Lameness	1	4.34	1	2.27
Sub-total (Medicinal Cases)		14	60.84	35	79.52
11.	Vaginal prolapse	1	4.34	0	0
14.	Umbilical Hernia	2	8.69	0	0
15.	castration	2	8.69	0	0
16.	Urolithiasis	0	0	1	2.27
	Myiasis	3	13.04	2	4.54
17.	Dog bite	0	0	6	13.64
	Hematoma	0	0	0	0
	Atresia ani	1	4.34	0	0
Sub-total (Surgical Cases)		9	39.1	9	20.45
Overall		23	99.94	44	99.97

A total of total 67 animals were included into the study among which 33% and 64% were cattle and goats, respectively. Table 1 it represents the percentage of occurrence of different diseases in cattle and goat recorded at UVH.

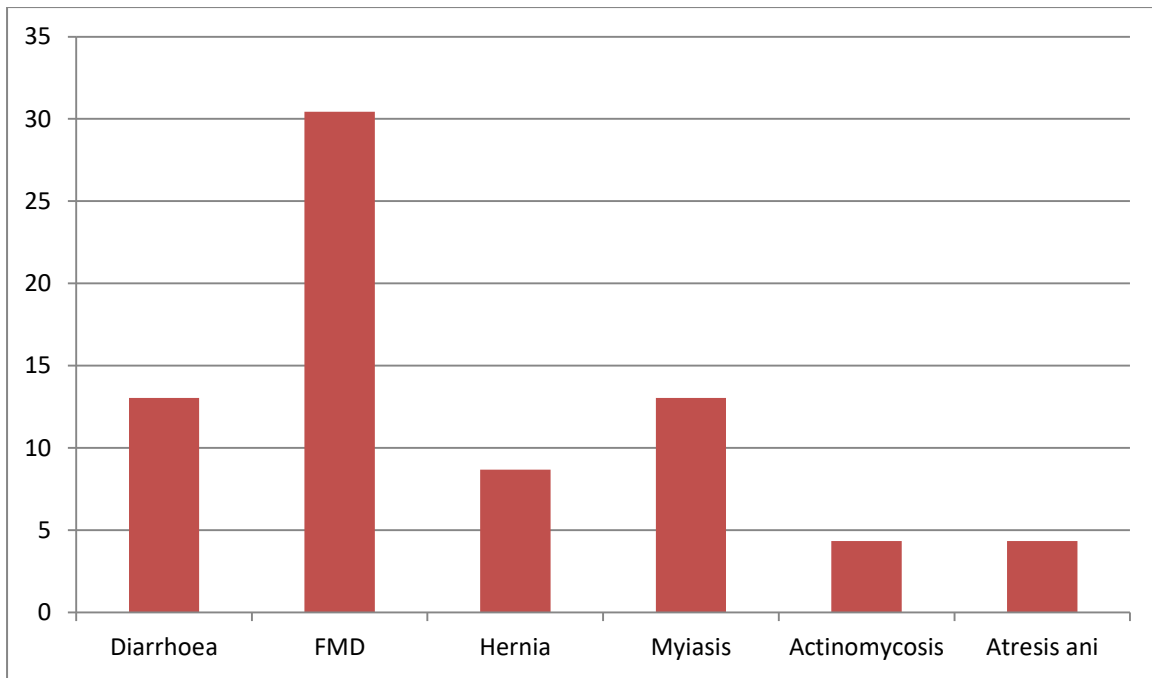


Figure 7: Percentage of occurrence of Diseases in Cattle

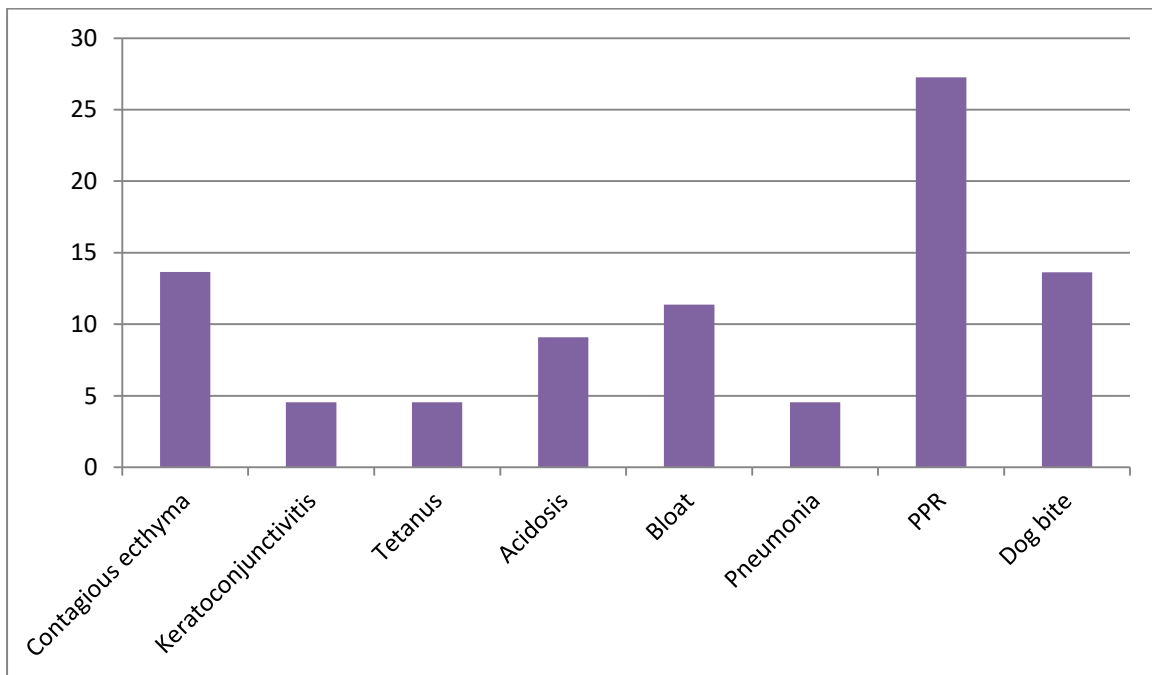


Figure 8: Percentage of occurrence of Diseases in Goat

Among the clinical cases, diarrhoea (13.04%), FMD (30.44%), myiasis (13.04%) and umbilical hernia (8.69%) were recorded as major disease problems in cattles. Beside this, dog bite (13.64%), contagious ecthyma (13.64%), acidosis (9.09%), bloat (11.36%) and PPR (27.27%) were recorded as major disease problems in goats.

Goat is frequently affected with diseases, caused by a wide range of infectious agents including viruses, bacteria, parasites and noninfectious agents (Taylor et al., 1984). Among the viral diseases of the goat, the current study recorded 27.27% prevalence of PPR in goat which is contradicted with other investigations (Poddar et al., 2018 and Raquib et al., 2020) where the prevalence of PPR in goat was reported as 13.72% and 13.74% respectively. The variation might be due to various geographical factors and animal husbandry practices (Balamurugan et al., 2014). Contagious ecthyma was one of the unusual cases found during the study in goat was about 13.64%. A study lead by Azad et al, 2016 found clinical cases of contagious ecthyma in about 23.44%. Prevalence of umbilical hernia in calf found during the study was 8.69%, which is slightly higher than the prevalence given by another reporter (Rahman et al., 2017) where prevalence was 1.7%. The prevalence of opacity was 3.25% which is supported by the finding of (Prasad *et al.*, 1980). The prevalence of pneumonia in goat was 4.54% which is slightly lower than the previous study (Hossain *et al.*, 2001) where 7.5% prevalence of pneumonia was reported. Heavy rainfall and cold environmental condition are predisposing factor for pneumonia. Other bacterial disease has more or less same prevalence. The prevalence of urolithiasis was 2.27% which is slightly lower than the prevalence given by others (Mia, 1967; Hossain *et al.*,1979, Dewan and Das, 1988) who reported the prevalence of urolithiasis was 3.9% in goats.

A previous study showed that diarrhea in cattle occurred at a rate of (13.04%) (Karim *et al.*,2014) which supports our study. The occurrence of bloat in goat contradicts the earlier finding from (Rahman *et al.*, 2012) who reported 2.2% bloat in cattle and 2.5% in goats. The % occurrence of FMD is 30.44 was much higher than the finding of Samad (2001) and Rahman *et al.* (2012) reported as 1.79% and 1.3% cases of FMD in cattle.

Chapter 4: Conclusion

Cattle and goats are one of the most promising species for future income generation for many people, offering scopes for reducing poverty and unemployment problem in Bangladesh. From the study it was observed that both cattle and goats were susceptible to different infectious and non-infectious diseases which causes heavy economic losses every year.

As FMD in cattle and PPR in goat were also high, strict vaccination schedule along with good standard of farm hygiene and bio-security should be followed. Dog bite was also problem for goats and proper care should be taken if it is bitten by rabid dogs. As a whole proper planning and program should be undertaken to prevent and control diseases of cattle and goat in the study area.

Limitation

The study period was short and the study area is located in a remote area of Chattogram. 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.

References

Ali, M.H., Bhuiyan, M.K.J. and Alam, M.M., 2011. Retrospective epidemiologic study of diseases in ruminants in Khagrachari Hill Tract District of Bangladesh. *Bangladesh Journal of Veterinary Medicine*, 9(2), pp.145-153.

Balamurugan V, Das S, Raju DS, Chakravarty I, Nagalingam M, Hemadri D, Govindaraj G, Singh NI, Ltu K, Devi M, Sharma K. Prevalence of peste des petits ruminants in goats in North-East India. *Virusdisease*. 2014 Dec;25(4):488-92.

DLS(2020-2021). Department of livestock Services, Government of Bangladesh

Hossain MA, Shahidullah M, and Ali MA (1986). A report on surgical diseases and reproductive disorders reported at the Veterinary Hospital of Bangladesh Agricultural University, Mymensingh. *Bang. Vet. J.* 20: 1-5.

Karim, Z., Huque, K.S., Hussain, G., Ali, Z. and Hossain, M., 2010. Growth and development potential of livestock and fisheries in Bangladesh. Government of the People's Republic of Bangladesh.

Kashem, M.A., Hossain, M.A., Ahmed, S.U. and Halim, M.A., 2012. Prevalence of diseases, morbidity and mortality of Black Bengal Goats under different management systems in Bangladesh. *University Journal of Zoology, Rajshahi University*, 30, pp.01-04.

Mia, Taimur MJFA and Nanday P (1967). The distribution and Epidemiology of Urolithiasis of goat. *Bang. Vet. J.* 41: 50-54.

Md. Thoufic Anam Azad, Sukumar Saha , Md. Shahin Alam , Papia Monoura , Md. Giasuddin , Shake Mohammed Shariful Islam, Mahbub Jang Fatey Ali Taimur and Jahangir Alam. Epidemiological investigation and phylogenetic analyses of contagious ecthyma virus from goat in Bangladesh. *Asian Journal of Medical and Biological Research*.2016. 2 (4), 555-561.

Onneshan, U., 2014. Recent Trends of Growth in Agriculture. *Industry and Power, Bangladesh Economic Update*, 5(3).

Poddar S, Tuli DE, Sultana J, Akter S, Alauddin M. Prevalence of Peste des petits ruminants in Goat at Upizalla Veterinary Hospital, Pirojpur Sadar, Bangladesh. Turkish Journal of Veterinary Research. 2018;2(1):5-8.

Rahman, Md & Sultana, Salma & Ali, Md & Hassan, Md. (2017). Prevalence of umbilical hernia of calves and its risk factors at Tangail Sadar of Bangladesh. Asian-Australasian Journal of Bioscience and Biotechnology. 2017. 154-158.

Raquib A, Uddin MM, Chowdhury MS, Hossain MM, Rahman MM. Occurrence and distribution patterns of the diseases of goat in Dhaka, Bangladesh. Turkish Journal of Veterinary Research. 2020;4(2):51-6.

Sarker, Y.A., Miah, A.H., Sharif, N., Himel, M.H., Islam, S., Ray, R.C., Paul, T.K., Islam, M.T. and Sikder, M.H., 2015. A retrospective study of common diseases at Veterinary Teaching Hospital, Bangladesh Agricultural University, Mymensingh. Bangladesh Journal of Veterinary Medicine, 13(2).

Samad MA (2001). Observations of clinical diseases in ruminants at the Bangladesh Agricultural University Veterinary Clinic. Bangladesh Veterinary Journal 35: 93-120.

Taylor WP. The distribution and epidemiology of peste des petits ruminants in the sultanate of oman. Veterinary Microbiology. 1984., 22:341–352.

Tareque, A.M.M. and Chowdhury, S.M.Z.H., 2010. Agricultural Research Priority: Vision-2030 and beyond. Dhaka: Bangladesh Agricultural Research Council.

Acknowledgments

All the praises and deepest sense of gratefulness belongs to the Almighty, the Merciful, the Omnipotent, and the Beneficent but the Supreme Ruler of the Universe Who enabled me to complete my work successfully for the Internship program.

The author gratefully expresses first and foremost his heartiest appreciation, deepest sense of gratitude and best regards to his internship supervisor, Professor Dr. **Sharmin Chowdhury**, Department of Pathology and Parasitology, Chattogram Veterinary and Animal Sciences University for his advice, encouragement, constructive criticism, scholastic supervision and intellectual guidance throughout this work continuous supervision to complete the report.

The author expresses his profound gratitude, gratefulness, and heartfelt Fatikchari Upazila for all the technical support and their assistance in the two months study period. Thanks to Prof. **Dr. A.K.M. Saifuddin**, Director of external affairs, Chattogram Veterinary and Animal Sciences University, Khulshi, Chattogram, for their factual advice, kind cooperation, and continuous encouragement during the study.

Finally, the author extended her appreciation to her parents, all patient owners, and all well-wishers

BIOGRAPHY

I am Dibakar Chowdhury, son of Mr. Goatham Chowdhury and Mrs. Simla Chowdhury. I passed Secondary School Certificate examination in 2012 (GPA-5.00) from Chattogram Government High School, Chattogram followed by the Higher Secondary Certificate examination in 2012 (GPA-5.00) from Chattogram Government City College, Chattogram. Now I am an intern veterinarian under the Faculty of Veterinary Medicine at Chattogram Veterinary and Animal Sciences University. In the future I would like to work as a veterinary practitioner and do research on zoonotic diseases and public health significance in Bangladesh.