**INTRODUCTION**

Bangladesh is an over populated, rural and agrarian country in the world and livestock has been an important component of the mixed farming system practiced in Bangladesh for centuries. About 80% of our population is employed in agriculture and livestock farming. Twenty percent people involved in livestock sector as permanent occupation.. The goat place in world agriculture is primarily in developing countries and its future depends on the direction that development place. This refutation of standard slanders against the goat is based on the reports and policy discussions of the headquarters of FAO of United Nation, main channel of aid and advice of developing countries.

From time to time, changes in economic condition or agricultural techniques deprive goat of its usefulness in an area where it has long played an important role.

Goat plays a potential role in the subsistence economy of Bangladesh, where they are generally raised by the poor farmers and distressed women with very little capital investment.

It is one of the most commonly eaten red meat, which is highly acceptable to the people of all castes. Meat and milk derived from goats have long been recognized as an excellent source of high quality animal protein.

The important of goat and its disease emphasized for their versatile production profile and valuable contribution like meat & milk industrial raw materials as skin fibers, and manure, Socio-economic relevance as security by incoming generation and human nutrition

The production of meat, milk and skin is second position representing about 38.0%, 23.0%, & 28.0% respectively total contribution of livestock in Bangladesh.

Due to various diseases of livestock (viral, bacterial, parasitic & other non-infectious diseases) and the endemic status of PPR in Bangladesh with mortality rate of 50% or more in susceptible goat population.PPR considered being main limitation to production in the small ruminant industry.

The literatures on various aspects of diseases of goat are highly massive. Among these peste des petis ruminants is one of them. In this section only the major references having relations with the present work are briefly reviewed. Prevalence of various diseases of goats is described under consideration mostly in PPR.

PPR was not clearly recognizable up to 1972, but the true extend of the disease has become apparent in recent years and is still being clarified (Reader and Obi, 1999).

Rahman and Samad(1984) studied the diseases of goat in some areas of Bangladesh and reported 12% mastitis, 10% colibacillosis, 5% Salmonellosis and 7% otitis externa. It is assumed that 75% of the districts in Bangladesh are affected with PPR. Since there are no previous records of PPR. In Bangladesh it is thought that the disease might have come from India (Debnath, 1995). PPR in goat has been recorded in 1993 from the border belt areas of southwestern districts (Sathkhira, Jessore and Barguna) of Bangladesh. ). In endemic condition, it may be less dramatic or may occur as a sub clinical or even in apparent form (Debnath, 1995).

In Nigeria Babaloa and Schiuron (1976) conducted an investigation on the incidence of Goat pox by examining clinically. They reported 31.7 % animal to be affected with this virus. Clinical manifestation of the goat pox is common in goats after 10 to 15 days of incubation period. Clinical finding indicate that cutaneous disease is the more common type in adult goats. The first signs of disease are rhinitis, conjunctivitis, and pyrexia. Lesions commence as papules then become nodules (0.5-1.0cm diameter) vesicular, pastular and finally scabs. Lesions are most obvious in the arch of skin where the wool /hair is shortest, like the head, neck, ears, groin, and perineum and under the tail. (Babaloa and Schiuron, 1976).

Rahman and Samad (1984) studied the diseases of goat in some areas of Bangladesh and reported 12% mastitis, 10% colibacillosis, 5% Salmonellosis and 7% otitis externa.

Considering these important demands the present study was under taken the following objectives:

1. To know the clinical feature of various diseases of goat.
2. To determine the prevalence of diseases.

**MATERIALS AND METHOD**

**Study area:**

The study was carried out at Upazila Veterinary Hospital, Muktagachha, Mymensingh.

**Reference/target population:**

All goats under Upazila Veterinary Hospital, Muktagachha, Mymensingh.

**Source of population:**

Several village, union and sadar Thana under Muktagachha Upazila with household raising at least one domesticated ruminants (goat) with history and clinical signs of various diseases to be source population.

**Study population:**

Total 130 goats were study population

**Duration of study:**

The study was conducted from 1st March to 7th April and 5th July to 4th August ,2017

**Study design:**

It was a cross sectional study.

**Population and tools for used for data collection:**

About 130 goats at different ages and sex were registered from different areas of Upazila Veterinary Hospital at Muktagachha, Mymensingh during the part of internship period.

Mainly the two ways patients were gathered, one was clinics at which farmers willingly came with the patients with complain, another was at field where VS along with myself went to the field.

A structured record keeping sheet was used for registration of diseases data of goats with their diagnosis, their demographic information, and nature of feeding apart from owner, which is given below:

**Case definition of various diseases:**

Certain clinical signs, general exam, inspection, palpation, percussion, auscultation, etc methods were used to diagnosis of diseases.

**Detection of diseases either by clinical or other methods of examination:**

**PPR (peste des petis ruminants):**

It is called 3D diseases for having symptom of diarrhea, dyspnea, and death

**Initially manifested by a febrile syndrome, characterized by—**

#High fever (105-106°F)

#Dried exudates on muzzle, rhinitis & conjunctivitis

#Hind quarter is soiled with liquid feces

#Ulceration on lips & tongue and respiratory distress.

**Pneumonia:**

In general history were firstly taken, then the following points were noted to diagnosis

#High rise of temperature (105°F)

#Severe dyspnea, moist rales

#Nasal secretion

#Vesicular murmur & rough body coat.

**Rabies:**

#Goat showed more aggression and continuous bleating.

#Profuse salivation, increased temperature.

#Afraid of drinking water

#Posterior paralysis & frequent urination.

**Goat pox:**

**#**Papules are covered within the whole body, head and udder

#Red maculae’s appear on the hairless part of skin

#High fever, totally off feed

#Mucous membrane of eye , nose ,lips and vulva become necrotic

**Tetanus:**

In generally wound was located in its hind quarters,

Then other signs were

#Stiff gait, apathy to feed.

#Developed saw horse stance.

#Mouth was closed due to locked jaw.

**Mastitis:**

#Udder was swollen ,goat was restless due to pain to touch.

#Milk became watery& brown fluid with flakes.

#Redness of udder and teat with fever.

**Retention of placenta:**

The placenta is normally passed within three or four hours. If the placenta has not been expelled within twelve hours after delivery of the last kid, it is then considered to be retained placenta. Retained placenta increased incidence in cattle abnormal calving, as in twins, forced extraction, abortion, induced parturition and premature birth. The condition has also been associated with nutritional factors such as vitamin deficiency (carotin, vitamin A and vita E) minerals deficiencies or imbalances (calcium and phosphorus). Major pathogenic conditions affecting place tom separation include immature placetomes associated with shortened gestation, edema associated with caesarian section or uterine torsion and placentitis associated infection like brucellosis, bovinerhinotracheitis, enzootic abortion, and salmonellosis etc. Uterine atony associated with milk fever and hydropic condition also contributes to the incidence of retained placenta.

**Bloat:**

#Abdomen became distended

#Restless, arched back was found

#Rapid & deep breathing

#Try to kick belly

**Simple indigestion:**

History of heavy seasonal harvesting crops feeding then found

#Ceased rumen movement,

#Lacrimation, depression

#Weak, emaciation and pot belly appearance

**Wound:**

The area become lacerated, redness and oozing of blood is observed pain and lameness of goat was found.

**Urolithiasis:**

In general the diagnosis is based on clinical history and following clinical signs—

#Ceased urination

#Restlessness

#Kicking towards the abdomen

#Abnormal gait & posture

**Fascioliosis:**

#Goats infested *fasciola gigantica* became lazy, dull & depressed

#Anemic with rough & off colored skin coat

#Bottle jaw was located under the mandible

#Faeces were loose consistency; pot belly appearance

#Pale mucous membrane were observed.

**Coenurosis (Gid disease):**

The clinical sign which helped to diagnosis were

#Partial blindness in one eye

#Dullness and clumsiness

#Head pressing, ataxia in complete mastication and

#Periodic epileptiform convulsion was found.

**Colibacillosis:**

Mainly kid were infected which shown the following manifestations.

#Depression, in appetence

#Shunked eyes, Tucked up abdomen

#Yellowish brown to grayish white feces

#Soiling of anal, perianal and hind quarter region

**Congenital and other anomalies:**

Atresia ani and other several deficiency cases were observed during the period of study. Congenital absence or abnormal narrowing of a body opening. Artesia of the alimentary tract can occur at most point along the tract. This causes blockage of the tract and marked abdominal distention soon after birth. Death normally occurs within days. Atresia ani is quite common and in believed to be inherited. It can be surgically corrected in some areas of the colon has been recorded in goats. Atresia ani is recorded as a congenital defect in newborn animals. It occurs mainly sporadic and animal die at 7 to 19 days of age unless the defect is corrected surgically.

**RESULT**

The number and percentage of clinical diseases and disorders were recorded during 2 months of goat represented in tables. Total 130 affected goats were brought to Upazila Veterinary Hospital ,Muktagachha, Mymensingh. Viral, bacterial, ectoparasitic, surgical case and other diseases were 34.6%, 27.7%, 5.7%, 10.1%, 5.4%and 22.3% respectively.

**Table—1: Overall frequency of distribution of clinical diseases and disorders of study population on the basis of category of diseases.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Category of**  **disease** | **Name of disease** | **Kid(age)**  **6 months** | **1—2 years** | **Above**  **2 years** | **Total (%)** |
| Viral diseases | PPR  Rabies  Pox | 8(6.2%)  --  1(0.8%) | 20(15.4%)  2 (1.5%)  -- | 14(10.8%)  --  -- | 42(32.3%)  2(1.5%)  1(0.8%) |
| Bacterial  diseases | Pneumonia  Tetanus  Colibacillosis  Mastitis  Urolithiasis | 5(3.8%)  --  5(3.8%)  --  -- | 7(5.4%)  2(1.5%)  4(3.1%)  -  2(1.5%) | 6(4.6%)  --  1(0.8%)  4(3.1%) | 18(13.8%)  2(1.5%)  10(7.7%)  4(3.1%)  2(1.5%) |
| Other disorders | Bloat  Indigestion  Wound | --  2(1.5%)  -- | 3(2.3%)  5(3.8%)  3(2.3%) | 5(3.8%)  3(2.3%)  2(1.5%) | 8(6.2%)  10(7.8%)  5(3.8%) |
| Parasitic  cases | Mange  Fascioliosis  Coenurosis | --  --  -- | --  3(2.3%)\  2(1.5%) | 3(2.3%)  4(3.1%)  1(0.8%) | 3(2.3%)  7(5.5%)  3(2.4%) |
| Reproductive  Case | Retained  Placenta | -- | -- | 6(4.6%) | 6(4.6%) |
| Surgical case  &  Non specific | Hoof enlargement | --  -- | 2(1.5%)  -- | --  5(3.9%) | 2(1.5%)  5(3.9%) |

The above table shows the overall frequency of distribution of clinical diseases & disorders of studied population on the basis of category of diseases and age wisely. Among viral diseases prevalence of PPR (32.3%) was high. Among bacterial diseases pneumonia (13.8) was high. In case of metabolic diseases simple indigestion (7.8%) was high.

**Table—2: Frequency distribution of diseases according to sex.**

|  |  |  |
| --- | --- | --- |
| **Name of diseases** | **Male** | **Female** |
| PPR | 18(13.8%) | 24(18.5%) |
| Pox | 1(0.8%) | -- |
| Rabies | -- | 2(1.5%) |
| Pneumonia | 8(6.2%) | 10(7.7%) |
| Tetanus | 2(1.5%) | -- |
| Colibacillosis | 7(5.4%) | 3(2.3%) |
| Mastitis | -- | 4(3.1%) |
| Bloat | 3(2.3%) | 5(3.8%) |
| Indigestion | 5(3.8%) | 5(3.8%) |
| Wound | 3(2.3%) | 2(1.5%) |
| Retained placenta | -- | 6(4.6%) |
| Urolithiasis | 2(1.5%) | -- |
| Fascioliasis | 4(3.1%) | 3(2.3%) |
| Gid disease | 3(2.3%) | -- |
| Mange | 3 (2.3%) | 1(0.8%) |
| Hoof enlargement | 2(1.5%) | 1(0.8%) |
| Congenital | 1(0.8%) | 2(1.5%) |

Above table shows the frequency distribution of diseases of goats according to sex. In that study period the frequency distribution of diseases of male and female were 47.7% and 52.3% respectively. The prevalence of disease of female (52.3%) was higher than male.

**Table 03—Temporal distribution of clinical diseases and disorders in goat.**

|  |  |  |
| --- | --- | --- |
| **Name of diseases** | **No. of affected** | **Prevalence (%)** |
| Viral disease | 45 | 34.6 |
| Bacterial disease | 36 | 27.7 |
| Metabolic disease | 8 | 6.2 |
| Ectoparasitic disease | 3 | 2.3 |
| Endoparasitic disease | 10 | 7.7 |
| Surgical disease | 2 | 1.5 |
| Reproductive disease | 6 | 4.6 |
| Other disorders | 20 | 15.4 |

**Graph-1: Prevalence (%) of clinical diseases and disorders in goat**

**.**

The above table shows that the prevalence of clinical diseases and disorders of goat of viral disease, bacterial disease, ectoparasitic disease, endoparasitic disease, reproductive disease, metabolic disease, surgical disease and other disorders was 34.6%, 27.7%, 2.3%, 7.7%, 4.6%, 6.2%, 1.5% and 15.4% respectively. In this study period viral diseases was high.

**Age wise distribution of clinical diseases and disorders in goat.**

**Graph- 2: Prevalence (%) of clinical diseases and disorders in goat.**

Above the graph shows that the prevalence of clinical diseases and disorders in goat. In case of age up to 6 months, 1-2 years, above 2 years, was 35.7%, 41.26%, and 23.0% respectively. In that study period the prevalence of clinical diseases and disorders was high in 1-2 years group.

**DISCUSSION**

**Viral diseases:**

According to area the proportionate prevalence 34.6% of major viral diseases were recorded at Upazila Veterinary Hospital, Muktagachha, Mymensingh. Out of 130 goats 45 goats were affected with viral diseases. Among this 32.3% (42) were peste des petis ruminant, 0.8% (01) goat pox and 1.5% (02) were rabies. According to sex , female of black Bengal goats (65%) were susceptible than male goats (35%). This may be due to sex variation of the species.

**PPR:**

PPR are initially manifested a febrile syndrome characterized by high fever (105-106°F), nasal discharge etc.

According to area higher proportionate incidence 50% was recorded at Upazila Veterinary Hospital, Muktagachha, Mymensingh. Muddy floor and poor drainage system are most vulnerable risk factor to develop disease. Rainy season is more susceptible to occur the disease as compared with dry season.

**Goat pox:**

Clinical examination revealed that 0.8% had goat pox. Goat pox are considered host specific & goat affected this disease of all ages but more severe in young animal. The occurrence of goat pox 31.7% were recorded in all seasons but comparatively higher prevalence rate was found in summer season (Babaloa *et al,*1976).

**Rabies:**

During two months of study a total 1.5% (02) was brought to Vet. Hospital for treatment with the history of dog bite.

**Bacterial disease:**

**Pneumonia:**

During study time a total 18 (13.8%) cases were brought as pneumonic case. An etio-pathological investigation of pneumonia in black Bengal goat revealed that, out of 11 types of respiratory diseases the different percentage of condition was ,bronchitis 1.2%,bronchopneumonia,0.4%,bronchointerstitialpneumonia,0.33%,purulentbronchial pneumonia,o.4%,hemorrhagicpneumonia,1.3%,fibrinouspneumonia 0.4% emphysema 0.7%, and unidentified lesions o.7%. Season wise analysis of data revealed highest occurrence during winter (7.5%) followed by spring (6.9%), rainy season (5.9%) and lowest during summer (5.6%) months.

**Tetanus:**

Tetanus was only 02(1.5%) goats. The report on the incidence of tetanus in animal especially in goat is very limited in inland literature. Toxigenic strains of *Clostridium tetani,* causative agent of tetanus have been isolated from soil samples collected from different districts of west bangle puncture wounds of hoofs and introduction to the genital tract at the time of parturition are the usual portals of entry of this organism.

**Colibacillosis:**

Colibacillosis was recorded 10 (7.7%) of goat. Colibacillosis is one of the major problem of young calves with a multifactor etiology which leads to significant morbidity and mortality . In case of colibacillosis the disease in common under 3 days of age but it occurs as early as 12 to 18 hours after birth and it occurs in goat mainly during the first 3 weeks of life. Enteric colibacillosis is characterized by pine-apple juice diarrhea. (Rahman *et al*,1984). Sulpher drug, oral saline should be used to protect the secondary bacterial infection and to maintain the reduction of hydration. (Riched and Adams, 1982).

**Mastitis:**

Clinical mastitis was recorded in 04 (3.1%) goat. The clinical mastitis of goat and cow has been reported from Bangladesh (Rahman and Samad,1984) but a systemic study on this disease has not yet been in Bangladesh.

**Reproductive disease:**

**Retained placenta:**

Reproductive problems of Black Bengal goats have an impact on successful fertility (Bhuiyan *et al*, 1998).

Retaintion of placenta was recorded in 06(4.6%) goats.

**Parasitic diseases:**

**Fascioliosis:**

Among 130 goats 07(5.5%) were recorded as fascioliosis.The 16.2% prevalence of gastro-intestinal parasite infection in goats supports the earlier report of who reported 13.8% gastro-intestinal parasitism in goats of Mymensingh and same as present findings.

**Mange:**

The prevalence of mange was recorded 03(2.3%) in goat population at Upazila Vet. Hospital, Muktagachha, Mymensingh. Clinical exam revealed that 2.3% goat clinical skin disease.

(Nooruddin *et al,* 1987) reported higher prevalence of skin disease in black Bengal goats under rural condition in Bangladesh. Skin diseases caused by dermatitis were recorded as an important problem. The highest prevalence was recorded during spring seasons.

**Other diseases and disorders:**

Clinical examination revealed that 8(6.2%) goats had clinical diseases of alimentary tract (Bloat) and 7.8% was recorded as simple indigestion. It was found in all the 4 seasons but the highest prevalence 21% was recorded during spring seasons. (Hannan *et* *al.*, 1985).

Urolithiasis was recorded in 02 (1.5%) goats. The high incidence of urolithiasis observed in urban area (Dhaka city) due to excessive feeding of wheat bran which is very rich in phosphate has been reported by (Mia *et al*, 1967).

Hoof enlargement was recorded only 02(1.5%) of goats. and other nonspecific & deficiency case were recorded 05 (3.8%) of goats. Atresia ani is a frequent occurrence in our country but occasionally this condition was associated with defects of other body systems like tailless, supernumerary limbs.

**LIMITATION OF THE STUDY**

**During my study period at Upazila Veterinary Hospital, Muktagachha, Mymensingh, the following limitations were observed:**

\*Due to the short duration of the assigned period the relation of different types of diseases and disorders with the season cannot be studied.

\*Small number of sample population. So it cannot be studied widely.

\*Lack of laboratory diagnosis facilities.

\*All the diseases and disorders were mainly diagnosis by taking clinical history from owner and by observing the clinical findings. If Lab diagnosis was available then the accuracy of the result will be more significant.

**CONCLUSION**

The study was conducted at Upazila Veterinary Hospital, Muktagachha, Mymensingh to measure and evaluate the prevalence of general diseases and disorders of goats in relation to ages, sexes, breeds etc. in study area based on history, anamnesis and clinical findings. Among these diseases PPR is highly contagious and devastating viral disease. Control of the viral of an epidemic disease like PPR, pox will require various tools; availability of an efficacious vaccine will be most important prerequisite. So vaccination program will be very much effective to control diseases (Samad,2000).However. Poor management, inadequate drugs, lack of awareness of farmers, malpractise of farming, different topographic region, different places and environment enhances the high incidence and prevalence of diseases and disorders.

**REFERENCE**

Babaloa AR, Schillorn WS and van CM (1976). An investigation on the incidence of Goat pox. *Bang. Vet. J.,* 9: 1 – 4.

Bhuiyan, Amin MR and Islam MR (1998). Effect of successful fertility in goats due to reproductive disorder. *Bang. Vet. J.* 17: 20-23.

Debnath NC (1995), peste des petits ruminants (PPR). An overview, proceeding of the BSVER symposium on eradication of Rinderpest and related disease. 2 Dec. 1995, Dhaka. PP (9-13).

Hannan MA, Ahmed MD and Haq MM (1985). Observation of production loss due to indigestion of goats. Journal pathology. 37: 14-19.

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.*

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

Nooruddin M, Haque MH, Barik MA and Islam SMN (1987). Prevalence of skin diseases in Black Bengal goats. *Bang. Vet. J. 4: 5-9*

Qadir ANMA (1981). A preliminary study on the epidemiology of fascioliasis in goats. *Bang. Vet. J. 15: 7-12.*

Rahman MM and Samad MA (1984). A note on the incidence of mastitis in Black Bengal goats. *Bang. Vet. J. 8: 11.*

Rahman MM, Samad M, and Majibur R (1984). Examination of goat in some areas associated with bacterial diseases of Bangladesh.

Raser CM (1986), Peste des petits ruminants (PPR). The marck veterinary manual 6th edition U.S.A: 402-403.

Reader and Obi RS (1999). Prevalence of peste des petits ruminants of goat in rural area of Dhaka. *Ind. Vet. Med. J. 13:50-51*

Richard YP and Adams MP (1982). Sulpher drug used in peste des petits ruminants for prevention of bacterial infection. *Ame. Vet. J. 61: 50-53.*

Samad, M.A. (2000). Veterinary practitioners guide, LEP publication.07 pp (231-268).

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****

# BIOGRAPHY

Monwara Akter passed Secondary School Certificate (SSC) examination from N.N.Pilot Girls High School, Muktagachha, Mymensingh in 2008 and then Higher Secondary Certificate (HSC) examination from Muktagachha College in 2010. He enrolled his internship program for Doctors of Veterinary Medicine (DVM) Degree in Chittagong Veterinary and Animal Sciences University (CVASU), Bangladesh. He has immense interest to work in the Prevalence ofvarious disease and disorder of goat at our Upazila Veterinary Hospital, Muktagachha, Mymensingh.