RETROSPECTIVE EPIDEMIOLOGIC STUDY OF DISEASES IN RUMINANTS IN KHAGRACHARI HILL TRACT DISTRICT OF BANGLADESH

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ABSTRACT

   A retrospective epidemiologic study of animal diseases was undertaken at Khagrachari Sadar Veterinary Hospital during January, 2006 to December, 2010 to determine prevalence and distribution of animal diseases. According to the diseases register, a total of 3988 sick animals were examined and 53 types of diseases were identified during this period. The commonly found various diseases were worm infestation (51.5%), pneumonia and pneumonitis (7.9%), ephemeral fever (3.7%), enteritis (3.4%), mastitis(3.2%), mange (3.2%), indigestion (2.8%), anestrous(2.6%). Rest of the diseases had lower percentage than 2%. Out of 3988 sick animals, 74.7% were female and 25.3 % were male animals. Animals aged between 2-5 (A1) years had high prevalence (54.0%) and it was low in age group 8-10 years (A4), 2.4%. Prevalence of diseases was high (42.3%) in rainy season (June-October) followed by (32.5%) in winter (November-February) and lowest (25.2%) in summer season (March-May). Gastrointestinal diseases 61.6 % (2458 cases) was seen highly prevalent among all groups of animals which was followed by infectious diseases 10.4% (416 cases), skin diseases 9.4 % (377 cases), respiratory diseases 8.27% (330 cases) and reproductive diseases 7.93% (cases). This study suggests that for a period of 15 years or more will help to identify the risk factors of diseases in this area.

Key words: Retrospective study, Epidemiology, Diseases, Ruminants

INTRODUCTION

   The magnitude of contribution of the livestock sector to the GDP is 2.6 % in Bangladesh and 80% rural people rear indigenous animals. The present population of cattle, goat, sheep and pig are 22970000, 22400000, 2870000 and 100000 respectively (DLS, 2010). Livestock sector provides full time employment to approximately 20% and part time employment to approximately 50% of the rural population of Bangladesh. It also generates an adequate amount of foreign currency every year by exporting hides and skin and their products. Besides, per capita income of Bangladesh is 750 US dollar and 49% of the total population of Bangladesh is malnourished. Per capita requirement of protein can not be fulfilled by our protein sources. So, continuous protein deficiency causes various nutritional deficiency diseases followed by infectious diseases and reproductive disturbances. If the livestock sector develops, it will be able to fulfill the existing requirement of protein for the country. Approximately 36% protein requirement is fulfilled by livestock sector.

   In the rural area of Plain land of Bangladesh livestock rearing such as beef fattening, goat rearing, buck rearing and sheep rearing are gradually increasing day by day. But in hill tract area of Bangladesh livestock rearing is not well established though there is a great prospect in hilly tracts. Red Chittagong cattle are more sustainable in Chittagong hill tract area. The goat is called the "Poor man's cow" is the second important livestock in Bangladesh which plays an important role in the rural economy and earn substantial amount of foreign currency by exporting skin and others byproducts (Kamaruddin, 2003). Each year goat production provides 127,000 MT meat, which accounts for 25% of total red meat in Bangladesh (FAO, 2007). Even in urban area goats are being raised under an intensive system of management by stall feeding with bran, fodder and tree leaves. Pig rearing is very uncommon in plain land area but there exists a great scope of pig rearing in hill tracts area (Khagrachari, Rangamati and Bandarban districts) as pig rearing and pork are very interesting to trivals people. There is government pig farm in Rangamati hill tracts district. Diseases of pig is less common in Bangladesh as their population is very small, but swine erysipelas is a diseases causing great harm in all ages of animals all the year round.

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There exists a variety of problems in livestock sector of Bangladesh such as insufficient pasture land, lack of technical expert, insufficient supply of vaccine, lack of epidemiologic study and shortage of government employee in the field level and various diseases of different systems of animals. Among various problems, diseases play an important role interfering with the development of healthy livestock and livestock industry in our country. Infectious diseases cause a great harm in livestock. It has been estimated that about 10% animals die annually due to diseases. Disease also causes nutritional deficiency and disturbances in fertility.

Understanding on the incidence, prevalence, distribution and determinants or risk factors of diseases in an area is necessary for undertaking efficient control program. Studying diseases of animals retrospectively is a rapid and cheap means to identify the strategy of effective disease control when it is analyzed statistically. Therefore, a retrospective study was carried out to elucidate the epidemiology of diseases in domestic animals.

MATERIALS AND METHODS

Selection of Research Site
The retrospective epidemiologic study of diseases in ruminants was done using of 5 years data in Khagrachari sadar Upazila Veterinary Hospital of Khagrachari Hill tract district.

Sources and Nature of Data
The retrospective data of 5 years from January 2006 to December 2010 were collected from patient register of Veterinary Hospital, Khagrachari sadar, Khagrachari maintained by veterinary surgeon. The data were analyzed retrospectively and interpreted to determine the prevalence of diseases; seasonal pattern and distribution of diseases. The age, sex, and body weight of the animals were collected from the register.

Data Processing
The data were checked manually for obvious inconsistencies, recording errors or missing data. The potential errors were evaluated and corrected. Data with suspicious values were excluded. Data were statistically analyzed by Statistical Package for Social Science (SPSS) software 17.0 version. Chi-square test was used to know the association between different groups in respective cases. According to age, diseased animals were grouped as 0-2, 2-5, 5-8 and 8-10 years. We considered three seasons as Summer from March to May, Rainy from June to October and Winter from November to February. During the period of study 3988 diseased animals were recorded from patient register. Among them 934 cases (23.4%) were cow, 180 cases (4.5%) were bull, 598 cases (15.0%) were heifer, 487 cases (12.2%) were calf, 1403 cases (35.2%) were goat, 45 cases (1.1%) were sheep and 341 cases (8.6%) were pig. Out of the total cases 1010 cases (25.3%) were male and 2978 cases (74.7%) were female. Male and female animal's ratio was 1:3 approximately.

RESULTS AND DISCUSSION

Age, sex and season wise distribution of diseases and disorders observed in different systems of cattle

The diseases and disorders observed in the different systems of cattle are shown in the Table 1-4. In the study 3938 ruminants were studied where cattle were 2199 and out of 53 detected diseases about 45 diseases were observed in case of cattle (Table1). In the study it was found that cattle of different aged were significantly suffering from various diseases and disorders, where maximum no. of cattle (1171) were affected by worm infestation. The study also revealed that most of cattle of all studied aged were affected with gastrointestinal diseases (Table 1 & 2). It was exerted from the study that only two numbers of deficiency & metabolic diseases (Agalactia and Milk fever) as well as three numbers of diseases related to sense organs (corneal opacity, Keratitis and Otitis) were found from the studied cattle during the period 2006-2010 in the Khagrachari hill tract district of Bangladesh. Dog bite was recorded as single case. Results acquired from the study that worm infestation was more frequent in all the studied aged of cattle as compared with other diseases and disorders. The study also gave interesting phenomena that 42.22% of cattle were suffering from 10 or less enlisted diseases and disorders whereas 20% of cattle were suffering from only one kind of diseases.

Table 1 & 2 also expressed that cattle of 0-2 years old were mostly significantly susceptible to diseases and disorders in contrast of cattle of other studied aged.

Sex wise diseases and disorders in cattle were presented in the Table 1 & 3. The study revealed that female cattle were significantly affected with diseases and disorder observed in the different systems of cattle where as male responded as minimum ones (Table 1 & 4). Likely the trend of age based phenomena, worm infestation was also ranked as the most frequent in case of female in the studied hill areas may be due to less attention against preventing

measures of worm. In the study some diseases such as dysentery, fasciliosis, arthritis, wound and corneal opacity were not identified from male, which is favorable for profitable cattle rearing in hill area. It can also be stated that male cattle were more prominent against dog bite as compared to female ones (Table 1).

Table 1. Distribution of diseases and disorders in Cattle observed in age, sex and season wise

Diseases occurred in the different systems	Age Grouping (Year)				Sex		Season			Total
	0-2 (A_1)	2-5 (A_2)	5-8 (A_3)	8-10 (A_4)	M	F	Summer	Rainy	Winter	
Gastrointestinal system										
Bloat	0	2	9	0	2	10	4	4	3	11
Dysentery	0	0	1	0	0	1	0	0	1	1
Enteritis	25	41	22	0	25	63	6	48	34	88
Fasciliosis	1	6	0	0	0	7	0	0	7	7
Indigestion	47	1	21	11	46	33	18	25	37	80
Tympany	0	41	5	5	43	8	14	19	18	51
Worm infestation	657	275	197	47	123	1048	308	505	359	1171
Total	**730**	**366**	**255**	**53**	**239**	**1170**	**350**	**601**	**459**	**1410**
Respiratory system										
Aspiration pneumonia	9	2	0	0	1	10	3	2	6	11
Pneumonia	12	0	0	0	2	10	5	0	7	12
Pneumonitis	27	0	0	0	8	19	10	7	10	27
Total	**48**	**2**	**0**	**0**	**11**	**39**	**18**	**9**	**23**	**50**
Reproductive system										
Abortion	0	1	0	1	0	2	0	0	2	2
Anestrous	1	102	0	0	0	103	30	37	36	103
Cervicitis	0	14	0	0	0	14	6	3	5	14
Mastitis	4	61	24	0	0	89	17	41	31	89
Mentritis	0	2	0	0	0	2	1	0	1	2
Posthitis	0	1	0	0	1	0	0	1	0	1
Retention of placenta	0	2	0	0	0	2	0	0	2	2
Vaginitis	0	5	0	0	0	5	0	4	1	
Dystocia	0	0	4	0	0	1	4	0	0	4
Total	**5**	**188**	**28**	**1**	**1**	**218**	**58**	**86**	**78**	**219**
Musculosketal system										
Arthritis	1	0	0	0	0	1	0	0	1	1
Broken horn	1	0	0	0	1	0	0	0	1	1
Yoke gall	0	17	0	0	15	2	5	9	3	17
Total	**2**	**17**	**0**	**0**	**16**	**3**	**5**	**9**	**5**	**19**
Integumentary system										
Abcess	5	0	0	0	0	5	0	1	4	5
Hump sore	0	1	0	0	1	0	0	1	0	1
Hypotrycosis	28	0	0	0	6	22	8	13	7	28
Lice infestation	33	0	0	27	12	48	10	24	26	60
Udder edema	0	8	0	0	0	8	2	2	4	8
Urticaria	11	1	0	0	9	3	5	3	4	12
Wound	1	0	0	0	0	4	1	0	0	1
Total	**78**	**10**	**0**	**27**	**28**	**90**	**26**	**44**	**45**	**118**
Disease of sense organs										
Corneal opacity	0	1	0	0	0	1	0	0	1	1
Keratitis	1	0	0	0	1	0	0	1	0	1
Otitis	0	0	0	14	12	2	3	7	4	14
Total	**1**	**1**	**0**	**14**	**13**	**3**	**3**	**8**	**5**	**16**

Table 1. Contd.

Diseases occurred in the different systems	Age Grouping (Year)				Sex		Season			Total
	0-2 (A_1)	2-5 (A_2)	5-8 (A_3)	8-10 (A_4)	M	F	Summer	Rainy	Winter	
Infectious diseases										
Babesiosis	6	25	0	0	15	16	3	28	0	31
Black quarter	23	0	0	0	5	18	0	23	0	23
Calf scour	3	0	0	0	1	2	0	3	0	3
Coccidiosis	16	0	0	0	11	5	4	5	7	16
Dermatophilosis	14	0	0	0	6	8	10	4	0	14
Eph. Fever	107	16	24	0	17	130	78	35	34	147
FMD	35	10	0	1	11	35	0	45	1	46
Foot rot	5	0	0	0	5	0	0	4	1	5
Navel ill	10	0	0	0	7	3	0	2	8	10
Papillomatosis	12	1	0	0	2	11	0	9	4	13
Total	**231**	**52**	**24**	**1**	**80**	**228**	**95**	**158**	**55**	**308**
Deficiency & Metabolic diseases										
Agalactia	0	42	4	0	0	46	8	20	18	46
Milk fever	0	12	0	1	0	13	0	4	9	13
Total	**0**	**54**	**4**	**1**	**0**	**59**	**8**	**24**	**27**	**59**
Dog bite	1	0	0	0	0	1	1	0	0	1

Season wise diseases and disorders in cattle were presented in the Table 1& 4. The results obtained from the study exerted that diseases and disorders of cattle were more prominent in the rainy season than that of summer and winter ones. It was also observed in the study that all of the diseases were not recorded in all the year round such as 17 no. diseases namely Dysentary, Abortion, Posthitis, Retention of placenta, Arthritis, Broken horn, Abscess, Hump sore, Corneal opacity, Keratitis, Black quarter, Calf scour, FMD, Foot rot, Navel ill, Papillomatosis and Milk fever were not recorded in summer. On the other hand 12 no. of diseases such as Dysentary, Fasciliosis, Pneumonia, Abortion, Metritis, Dystocia, Retention of placenta, Arthritis, Broken horn, Wound, Corneal opacity and Dog bite were not affect the cattle during the rainy season in the studied hill area whereas winter is the more favorable for cattle diseases hence in this time only 10 no. of diseases namely Dystocia, Posthitis, Wound, Hump sore, Keratitis, Babesiosis, Black quarter, Calf scour, Dermatophilosis and dog bite were not recorded for the period 2006-2010 (Table1).

Table 2. Cross tabulation of diseases and different types of cattle

Diseases	Types of Cattle				Total	Chi-square value
	Calf	Heifer	Bull	Cow		
Gastrointestinal system	312	440	117	540	1409	
Respiratory system	42	6	1	1	50	
Reproductive system	0	3	1	215	219	
Musculoskeletal system	1	0	1	17	19	
Integumentary system	50	19	10	39	118	717.97[**]
Eye & Ear	1	0	13	2	16	
Infectious diseases	81	129	37	61	308	
Deficiency & Metabolic diseases	0	0	0	59	59	
Dog bite	0	1	0	0	1	
Total	487	598	180	934	2199	

** There is statistically highly significant relation between diseases and different types of cattle.

Table 3. Cross tabulation of diseases and sex (m/f) for cattle

Diseases	Sex (M/F)		Total	Chi-square value
	M	F		
Gastrointestinal system	239	1170	1409	
Respiratory system	9	41	50	
Reproductive system	1	218	219	
Musculoskeletal system	1	18	19	
Integumentary system	22	96	118	124.15**
Diseases of sense organs	14	2	16	
Infectious diseases	70	238	308	
Deficiency & Metabolic	0	59	59	
Dog bite	0	1	1	
Total	356	1843	2199	

** There is statistically highly significant relation between diseases and sex for cattle.

Table 4. Cross tabulation of diseases and season for cattle

Diseases	Season			Total	Chi-square value
	Summer	Rainy	Winter		
Gastrointestinal system	349	601	459	1409	
Respiratory system	5	9	5	19	
Reproductive system	29	49	40	118	
Musculoskeletal system	55	86	78	219	
Integumentary system	8	24	27	59	53.02**
Diseases of sense organs	3	8	5	16	
Infectious diseases	95	158	55	308	
Deficiency & Metabolic	22	9	19	50	
Dog bite	1	0	0	1	
Total	567	944	688	2199	

** There is statistically highly significant relation between diseases and seasons for cattle.

Age, sex and season wise distribution of diseases and disorders observed in different systems of goat

Age wise distribution of diseases and disorders in goat as per systems have been summarized and presented in Table 5. All 6 cases of arthritis were found in age group A_1 in case of goat (Table 5 & 8). Deficiency and metabolic diseases are more common in age group A_1. Diseases of integumentary system (Skin diseases) were found more common 282 cases (74.80%) in age group A_1. Sex wise distribution of diseases and disorders in goat has been summarized and presented in Table 5.The diseases of gastrointestinal system were commonly found in female (516) than that of male (293). There is statistically highly significant relation between diseases and sex for goat (Table 9). In 9 cases diseases infestation was observed as single ones either the summer or rainy or winter in the studied areas of Bangladesh. Data on diseases infestation in goat related with season revealed that most of the diseases occurred during the rainy season than that of summer and winter ones except in case of deficiency and metabolic diseases as well as diseases related to integumentary system (Table 5). There is also statistically highly significant relation between diseases and season for goat (Table 10).

Age, sex and season wise distribution of diseases and disorders observed in different systems of sheep

In the study 45 sheep of different aged were recorded for investigating of 6 no. of enlisted diseases related with gastrointestinal system, respiratory systems as well as metabolic and deficiency (Table 6). It was observed that, sheep of 0-2 years aged were more susceptible than that of older aged. The study also revealed that sheep of older aged gave fully negative response against the diseases of pneumonia as well as zinc deficiency (Table 5). Based on sex wise diseases and disorders in sheep as per systems it can be stated that there were not strict differences between male and female as observed in the Table 6. Accordingly the findings of cattle and goat it was also dominant that sheep in the hill areas were mostly affected in the rainy season than that of other to seasons namely summer winter (Table 6). There is also statistically highly significant relation between diseases in sheep in relation with age, sex and seasons (Table 8-10).

Table 5. Distribution of diseases and disorders in goat observed in age, sex and season wise

Diseases occurred in the different systems	Age Grouping (Year)			Sex			Season			Total
	0-2 (A_1)	2-5 (A_2)	5-8 (A_3)	M	F	Summer	Rainy	Winter		
Gastrointestinal system										
Enteritis	22	5	0	8	19	1	18	8	27	
Indigestion	20	14	0	20	14	12	15	7	34	
PPR	48	22	0	16	54	0	56	14	70	
Worm infestation	328	348	2	249	429	180	269	229	678	
Total	**418**	**389**	**2**	**293**	**516**	**193**	**358**	**258**	**809**	
Respiratory system										
Aspiration pneumonia	1	2	0	1	2	0	1	2	3	
pneumonia	18	3	0	5	16	5	6	10	21	
Pneumonitis	122	93	0	77	138	64	80	71	215	
Total	**141**	**98**	**2**	**83**	**156**	**69**	**87**	**83**	**239**	
Reproductive system										
Abortion	4	0	0	0	4	3	1	0	4	
Cervicitis	0	5	0	0	5	1	3	1	5	
Mastitis	1	0	0	0	1	0	0	1	1	
Retention of placenta	0	3	0	0	3	0	3	0	3	
Total	**5**	**8**	**0**	**0**	**13**	**4**	**7**	**2**	**13**	
Musculoskeletal system										
Arthritis	6	0	0	6	0	0	6	0	6	
Integumentary system										
Abscess	10	16	0	1	25	3	6	17	26	
Contagious ecthyma	30	7	0	12	25	2	26	9	37	
Lice infestatios	16	0	0	16	0	1	8	7	16	
Manage	91	37	0	11	117	31	44	53	128	
Myiasis	32	10	10	27	25	9	22	21	52	
Total	**179**	**70**	**10**	**67**	**192**	**46**	**106**	**107**	**259**	
Diseases of sense organs										
Conjunctivitis	13	0	0	10	3	1	4	8	13	
Corneal opacity	0	3	0	0	3	0	3	0	3	
Keratitis	8	20	0	0	28	13	5	10	28	
Otitis	0	2	0	2	0	2	0	0	2	
Total	**21**	**25**	**0**	**12**	**34**	**16**	**12**	**18**	**46**	
Infectious diseases										
Coccidiosis	0	3	0	0	3	0	0	3	3	
Navel ill	7	0	0	5	2	3	2	2	7	
Total	**7**	**3**	**0**	**5**	**5**	**3**	**2**	**5**	**10**	
Deficiency & Metabolic diseases										
Agalactia	2	0	0	0	2	2	0	0	2	
Zinc deficiency	12	3	0	10	5	11	4	0	15	
Total	**14**	**3**	**0**	**10**	**7**	**13**	**4**	**0**	**17**	
Poisoning	4	0	0	1	3	0	4	0	4	

Age, sex and season wise distribution of diseases and disorders observed in different systems of pig

Age wise distribution of diseases and disorders in pig as per systems have been summarized and presented in Table 7. All the enlisted 7 cases of diseases, diseases related with gastrointestinal system, integumentery system and infectious were more prominent in age group 2-5 years. Sex wise distribution of diseases and disorders in pig has been summarized and presented also in Table 7.The diseases of gastrointestinal system were commonly found in female (137) than that of male (61). This phenomenon is also applicable in case of diseases related with integumentery systems and infectious but negatively in case of diseases recorded in the respirations system of pig (Table 7). Data on diseases infestation in pig related with season revealed that most of the diseases occurred

during the rainy season than that of summer and winter ones except in case of gastrointestinal system where the diseases occurrences were same in rainy and winter seasons (Table 5). There is also statistically highly significant relation between diseases in pig in relation with age, sex and seasons (Table 8-10).

Table 6. Distribution of diseases and disorders in sheep observed in age, sex and season wise

Diseases occurred in the different systems	Age Grouping (Year)		Sex		Season			Total
	0-2 (A_1)	2-5 (A_2)	M	F	Summer	Rainy	Winter	
Gastrointestinal system								
Dysentery	9	0	8	1	2	2	5	9
Enteritis	10	0	3	7	1	6	3	10
PPR	4	3	0	7	0	6	1	7
Worm infestation	10	6	9	7	2	6	8	16
Total	**33**	**9**	**20**	**22**	**5**	**20**	**17**	**42**
Respiratory system								
Pneumonia	1	0	1	0	0	0	1	1
Metabolic & deficiency								
Zinc deficiency	2	0	1	1	2	0	0	2

Table 7. Distribution of diseases and disorders in pig observed in age, sex and season wise

Diseases occurred in the different systems	Age Grouping (Year)			Sex		Season			Total
	0-2 (A_1)	2-5 (A_2)	5-8 (A_3)	M	F	Summer	Rainy	Winter	
Gastrointestinal system									
Enteritis	11	0	0	2	9	3	3	5	11
Worm infestation	62	110	15	59	128	59	65	63	187
Total	**73**	**110**	**15**	**61**	**137**	**62**	**68**	**68**	**198**
Respiratory system									
Aspiration pneumonia	0	1	0	0	1	0	1	0	1
pneumonia	18	0	0	14	4	0	12	6	18
Pneumonitis	21	0	0	15	6	8	7	6	21
Total	**39**	**1**	**0**	**29**	**11**	**8**	**20**	**12**	**40**
Integumentary system									
Wound	0	5	0	0	5	5	0	0	5
Infectious diseases									
Swine erysipelas	70	28	0	33	65	13	48	37	98

Table 8. Cross tabulation of diseases and different type of small ruminants

Diseases	Type of small ruminants			Total	Chi-square value
	Goat	Sheep	Pig		
Gastrointestinal system	809	42	198	1049	
Respiratory system	239	1	40	280	
Reproductive system	13	0	5	18	
Musculoskeletal system	6	0	0	6	
Integumentary system	259	0	0	259	476.14[**]
Eye & Ear	46	0	0	46	
Infectious diseases	10	0	98	108	
Deficiency & Metabolic	17	2	0	19	
Miscellaneous	4	0	0	4	
Total	1403	45	341	1789	

** There is statistically highly significant relationship between type of small ruminants and diseases.

Table 9. Cross tabulation of diseases and sex (m/f) for small ruminants

Diseases	Sex		Total	Chi-square value
	M	F		
Gastrointestinal system	372	677	1049	
Infectious diseases	34	74	108	
Respiratory system	119	161	280	
Reproductive system	0	18	18	
Musculoskeletal system	6	0	6	
Integumentary system	92	167	259	48.13[**]
Diseases of sense organs	15	31	46	
Deficiency & Metabolic	16	3	19	
Miscellaneous	0	4	4	
Total	654	1135	1789	

[**] There is statistically highly significant relationship between sex of small ruminants and diseases

Table 10. Cross tabulation of diseases and season for small ruminants

Diseases	Season			Total	Chi-square value
	Summer	Rainy	Winter		
Gastrointestinal system	260	446	343	1049	
Respiratory system	0	6	0	6	
Reproductive system	46	106	107	259	
Musculoskeletal system	9	7	2	18	
Integumentary system	15	4	0	19	74.94[**]
Diseases of sense organs	16	12	18	46	
Infectious diseases	16	50	42	108	
Deficiency & Metabolic	77	107	96	280	
Miscellaneous	0	4	0	4	
Total	439	742	608	1789	

[**] There is statistically highly significant relation between diseases and seasons for small ruminants.

Diseases in cattle, goat, sheep and pig

Among individual diseases the prevalence of worm infestation was highest followed by 5 diseases were more prevalent viz. enteritis, indigestion, pneumonia and pneumonitis, mange and ephemeral fever. The prevalence of other diseases was comparatively low. Among diseases of different systems those affecting reproductive system constituted highest occurrence is anestrous. This might be due to mainly for nutritional deficiency, infectious diseases, ovarian cyst and failure to heat detection by owners. The occurrence of diseases was found to be more in female than male due to the presence of higher number of female animals in the study area. The prevalence of mastitis was 2.3 % in the present study .The higher rates 18.6% had been recorded previously (Prodan *et al.,* 1996) and (Rahman *et al.,* 1996). Mastitis was also found more in rainy season in the study which was fully supported by Singh *et al.* (1996). Metritis was higher in A_2 age group. Rainy season was favorable for metritis which was coincided with previous study reported by (Marskusfeld, 1984). It is possibly due to fatness of cows, nutritional deficiency specially selenium, Vit-E and heavy grain feeding prior to parturition. The prevalence rate of abortion 0.2 % was fully coincided (Chourewar *et al.*, 2002). Abortion might be due to faulty management of pregnant cows, slippery floor, unhygienic environment of farm and other infectious diseases. Among viral diseases FMD was found high due to movement of cattle for different purposes. The prevalence of ephemeral fever 3.7% in the present study was merely resemble with 2.6 % reported by Yearuham *et al*. (2007).

Based on the results of this retrospective epidemiologic study of animal diseases of Khagrachari Sadar Veterinary Hospital, the most important 5 diseases were found: worm infestation, pneumonia and pneumonitis, enteritis, mange and ephemeral fever. Occurrence of the diseases was higher in female animals than male. Animals aged between 0-2 years are more likely to be affected by the diseases and disorders. More diseases were

reported in the rainy season. Gastrointestinal diseases were found more common. Retrospective epidemiologic analysis of diseases for a period of 15 years or more will help to identify risk factors of diseases. Identification of risk factors of diseases will help to initiate efficient control program.

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