CLINICAL DISEASES AND MANIFESTATIONS OF GOATS AND CATTLE RECORDED AT TEACHING VETERINARY HOSPITAL IN CHITTAGONG VETERINARY AND ANIMAL SCIENCES UNIVERSITY

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ABSTRACT

Teaching Veterinary Hospital (TVH) in Chittagong Veterinary and Animal Sciences University (CVASU) plays an important role of public service to animal welfare since the period of 1996. There are lots of goats and cattle are recorded in this hospital every year but previously no report published on it. So this research was conducted to determine the prevalence of clinical diseases and manifestations of goats and cattle recorded at TVH in CVASU during the period of January to December 2012. A total of 3090 clinical cases (goats 2778 and cattle 312) were registered. Diagnosis of these clinical diseases and disorders were based on clinical history, clinical sign and different lab test. Medicinal cases constituted highest percentage (goats 74.66% and cattle 66.35%) in comparison to surgical (goats 16.84% and cattle 24.04 %) cases and gynae-obstetrical (goats 8.50% and cattle 9.62%) cases. Among the (1) medicinal cases, highest percentage was recorded with the diseases of digestive system (goats 16.85% and cattle 20.83%) followed by parasitic diseases (goats 15.22% and cattle 12.82%), infectious diseases (goats 11.95% and cattle 12.18%), general systemic states (goats 7.91% and cattle 6.73%), disease of the respiratory system (goats 9.57% and cattle 4.16%), urinary system(goats 3.31% and cattle 1.28%), special sense organs (goats 3.99% and cattle 1.28%) and noninfectious diseases (goats 5.83% and cattle 4.17%). Among of the (2) surgical cases, general surgery (goats 11.77 and cattle 16.58%) was higher in percentage than special (goats 3.31% and cattle 3.20%) and orthopedic (goats 1.76% and cattle 3.85%) surgery. Among of the gynae-obstetrical cases, gynaecological disorders were recorded higher (goats 6.98% and cattle 8.33%) than obstetrical disorders (goats 1.51% and cattle 1.28%). Prevalence of clinical diseases and disorders were analyzed on the basis of age, sex, breed and season. P-value (P≤0.05) was considered as significant. So that an appropriate control strategy has to be designed and applied, which helps to prevent of these disease conditions in study area.

Key words: Prevalence, clinical diseases, menifestation, goats, cattle, Chittagong

INTRODUCTION

Livestock plays an important role in the development of the traditional economy of Bangladesh. Bangladesh is a densely populated agricultural country with an acute shortage of meat and milk. There are about 22.53 million cattle and 14.69 million goats in Bangladesh (DLS, 2008-2009). They provide mainly milk, meat, draught and hides and skins as important export item. The contribution of Livestock in Gross Domestic Product (GDP) is about 16.23 % in Bangladesh (BBS, 2008). Teaching Veterinary Hospital (TVH) in CVASU is one of the most important and reliable source of information about the diseases and manifestations in goats and cattle in the study area. There are some reports on clinical case records from Patuakhali Science and Technology University Veterinary Clinic, Babugonj, Barisal (Rahman *et al.*, 2012), Chandanaish Upazila of Chittagong district, Bangladesh (Pallab *et al.*, 2012), Ulipur Upazila Veterinary Hospital, Kurigram (Kabir *et al.*, 2010) and Bangladesh Agricultural University Veterinary Clinic (Samad, 2001; Samad *et al.*, 2002). This research works helps to describe the prevalence of clinical diseases and manifestations recorded in TVH in the district of Chittagong, Bangladesh during the period of one year.

MATERIALS AND METHODS

The study was conducted on 3090 animals (goats 2778 and cattle 312) with clinical cases were recorded at TVH in CVASU, in Chittagong district of Bangladesh during the period of 2012. The goats and cattle were registered with specific individual case registration number having full information of age, sex, and breed, Body Condition Score (BCS).

Clinical diseases and manifestations were categorized as (1) Medicinal cases, (2) Surgical cases and (3) Gynae-obstetrical cases. Medicinal cases were subcategorized as, general systemic state, disease of the digestive system, respiratory system, urinary system, parasitic diseases, Infectious diseases, non infectious diseases and diseases of the special sense organ. Surgical cases were subcategorized as (a) general surgery includes accidental injury, wound, abscess, cysts, myiasis, hoof trimming, dog bite wound (b) special surgery includes laparotomy, dehorning, urolithiasis, caesarean section, castration, rumenotomy and hernia (c) orthopedic surgery includes external fixation by using plaster of paris and internal fixation by using intramedullary pinning, dynamic compression plate (DCP). Gynae-obstetrical cases were subcategorized as (a) gynecological disorders includes anestrous, repeat breeder syndromes, pregnancy check up and mastitis (b) Obstetrical diseases include abortion, dystocia and retain fetal membrane. Age of the goats were categorized as kid (<4month), adult (4-12 month) and old (>12 month), in case of cattle calf (<7 month), adult (7-18 month) and old (>19 month). Breeds of goats were based on their phenotypic characters as Black Bangle Goat (BBG), Jamunapari goats and crossbreed goats, in case of cattle local indigenous cattle breed and exotic cross breed cattle. The year was divided into three seasons namely summer (March to June), rainy (July to October) and winter (November to February) according to the climatic condition of Bangladesh. Data were collected from clinical case investigation record to Microsoft Excel 2007@ ® spread sheet stored separately and percentages of clinical diseases and disorders were calculated. The collected data exported to analytical software STATA 11.2® 2011. Prevalence of clinical diseases and disorders were determined and measures of association with their age, sex breed and seasons by using Chi-square test, values of $p \leq 0.05$ were considered significant.

RESULTS AND DISCUSSION

A total of 3090 different clinical cases (goats 2778 and cattle 312) were registered at TVH during study the period of 2012. The total clinical cases were divided as medicinal cases constituted highest percentage (goats 74.66% and cattle 66.35%) in comparison to surgical (goats 16.84% and cattle 24.04 %) and gynae-obstetrical (goats 8.50% and cattle 9.62%) cases (Table 1). This observation agreed with the results of Rahman *et al.* (2012) who reported the highest prevalence of medicinal cases (goats 81.0% and cattle 84.1%) in comparison to surgical (goats 17.9% and cattle11.2%) and gynae-obstetrical (goats 1.1% and cattle 4.7%) cases, but disagree with the findings of Samad (2001) who showed that medicinal cases (goats 76.91% and cattle 90.76%), surgical cases (goats 19.42% and cattle 3.78%) and gynea-obstetrical cases (goats 3.67% and catle5.46%). A total of 3090 (goats 2778 and cattle 312) animals clinical diseases and disorders were recorded as the affected system, infectious and noninfectious diseases. The highest prevalence was recorded with the diseases of digestive system (goats 16.85% and cattle 20.83%) and surgical cases (goats 16.84% and cattle24.04%), followed by parasitic diseases (goats 15.22% and cattle 12.82%), infectious diseases (goats11.95% and cattle 12.18%), gynae-obstetrical diseases (goats 8.50% and cattle 9.62%), general systemic state (goats 7.91 and cattle 6.73%), respiratory system (goats 9.57% and cattle 4.16%) while the least recorded cases were diseases of urinary system (goats 3.31% and cattle 1.28%), noninfectious diseases (goats 5.83% and cattle 4.17%) and diseases of special sense organ (goats 3.99% and cattle 4.17%) (Table 1). Therefore medicinal cases were higher in compare to surgery and gynecological disorders throughout whole country. This observations is not consistent with the results of Rahman *et al.* (2012) who reported digestive disorders (goats 22.9% and cattle 14.2%), parasitic diseases (goats 20.04% and cattle 50.4%), infectious diseases (cattle 4.6%), respiratory disorders (goat16.8%) and eye infection (goats 13.5%) but in case of infectious diseases of goats 11.8%, respiratory disorders in cattle 5.5%, least recorded cases like nutritional deficiency, musculo-skeletal disorders, urogenital disorders and skin diseases had similar findings of this report. In terms of digestive disorders and skin conditions, this observation is not consistent with the report of Samad *et al.* (2002) who reported 60.55% digestive disorders and 14.92% skin diseases in calf. The results of the present study was not consistent with the results of Kabir *et al.* (2010) who recorded anorexia syndromes (goats 6.09% and cattle 3.17%), digestive disorders (goats 8.69% and cattle 11.5%), respiratory disorders (goats 6.96% and cattle 6.03%) and skin diseases (goats 9.56% and cattle 6.60%) but similar findings observed in case of viral diseases, FMD found highest in cattle and PPR in goats. The reported prevalence was not consistent with the results of Pallab *et al.* (2012) who observed the prevalence of digestive disorder 47.05%, infectious diseases 7.84%, respiratory disorders 6.20% and surgical affection 5.22% in cattle. There are variation of prevalence of clinical diseases and disorders observed due to different geographical location and study period. So that disease of the digestive system comprises highest prevalence in

comparison to others due to most of the owners with the clinical history of loss of appetite. On the other hand parasitic cases also in higher prevalence due to owners are unaware about the routine deworming program.

Table 1. Prevalence of clinical diseases and manifestations in goats and cattle recorded at Teaching Veterinary Hospital (TVH) in CVASU during the year of 2012

Parameters of clinical condition	Number of Goat (%)	Number of Cattle (%)
Weakness	77 (2.77)	7 (2.24)
Fattening	49 (1.76)	5 (1.60)
Idiopathic causes	94 (3.38)	9 (2.88)
General systemic states	220 (7.91)	21 (6.73)
Loss of appetite	244 (8.78)	29 (9.29)
Diarrhea	112 (4.03)	13 (4.16)
Ruminal tympany & acidosis	112 (4.03)	23 (7.37)
Digestive system	468 (16.85)	65 (20.83)
Upper respiratory tract infection	186 (6.69)	7 (2.24)
Pneumonia	80 (2.87)	6(1.92)
Respiratory System	266 (9.57)	13(4.16)
Dysuria	51 (1.83)	4 (1.28)
Urolithiasis	41 (1.48)	0 (00)
Urinary system	92 (3.31)	4 (1.28)
Endoparasitic diseases	319 (11.48)	25 (8.01)
Ectoparasitic diseases	53 (1.90)	5 (1.60)
Protozoal diseases	51 (1.83)	10 (3.20)
Parasitic diseases	423 (15.22)	40 (12.82)
Viral diseases	259 (9.32)	31 (9.94)
Bacterial diseases	73 (2.63)	7 (2.24)
Infectious diseases	332 (11.95)	38 (12.18)
Metabolic& nutritional diseases	101 (3.63)	7 (2.24)
Nervous & Musculoskeletal system	61 (2.19)	6 (1.92)
Non infectious diseases	162 (5.83)	13 (4.17)
Eye infection	57 (2.05)	4 (1.28)
Skin diseases	54 (1.94)	9(2.88)
Special sense organ	111 (3.99)	13(4.17)
1.Total Medicinal cases	**2074 (74.66)**	**207 (66.35)**
General surgery	327 (11.77)	53 (16.98)
Special surgery	92 (3.31)	10 (3.20)
Orthopedic surgery	49 (1.76)	12 (3.85)
2. Surgical cases	**468 (16.84)**	**75 (24.04)**
Gynecological disorders	194 (6.98)	26 (8.33)
Obstetrical disorders	42 (1.51)	4 (1.28)
3. Gynae-obstetrical	**236 (8.50)**	**30 (9.62)**
Total	**2778 (100)**	**312 (100)**

Goats and cattle were categorized as kid and calf, adult and old. Results showed that the prevalence of clinical diseases and disorders were highest in old animals (goats 38.0% and cattle 34.3%) followed by adult (goats 35.5% and cattle 33.0%) and lowest in kid and calf (goats 26.5% and cattle 32.7%) consistent with the findings of Kabir *et al.* (2010) who observed that higher prevalence observed in adult and old cattle but similar prevalence found in young and adult goats. So that prevalence of clinical conditions higher in old and adult animal than young animal due to disease resistance capacity lower in older animal rather than young animal (Table 2). In case of cattle, the results showed that the prevalence of endoparasitic diseases was higher in adult cattle 10 (3.20%) than calf 9 (2.88%) and old cattle 6 (1.92%) over ectoparasitic and protozoal diseases due to adult cattle get their infection by feeding of green roughage. In case of viral diseases FMD comprises higher in number in adult and old cattle were 12 (3.85%) than young calf over other viral diseases but it was not significant. The highest

prevalence was found in loss of appetite in adult goats 100(3.60%) and old goats 92(3.31%) than young kids over the other condition of digestive system like diarrhea and tympani with significant P value (P=0.000).

Table 2. Age wise clinical diseases and manifestations of goats and cattle at TVH

Parameters	Total number of goat N=2778 No (%)				Total number of Cattle N=312 No (%)			
	<4 month	4-12 month	>12 month	P-Value	<7 month	7-18 month	>19 month	P-Value
Weakness	18 (0.65)	21 (0.75)	38 (1.37)		4 (1.28)	2 (0.64)	1 (0.32)	0.554
Fattening	15 (0.54)	15 (0.54)	19 (0.68)	0.146	1 (0.32)	1 (0.32)	3 (0.96)	
Idiopathic	37 (1.33)	27 (0.97)	30 (1.07)		3 (0.96)	2 (0.64)	4 (1.28)	
Loss of appetite	52 (1.87)	100 (3.6)	92 (3.31)		5 (1.60)	14 (4.49)	10 (3.2)	0.923
Diarrhea	46 (1.66)	35 (1.26)	31 (1.12)	0.000*	2 (0.64)	7 (2.24)	4 (1.28)	
Tympani	14 (0.51)	48 (1.73)	50 (1.80)		4 (1.28)	9 (2.88)	10 (3.2)	
URTI[1]	34 (1.22)	94 (3.38)	58 (2.09)	0.041*	3 (0.96)	2 (0.64)	2 (0.64)	0.692
Pneumonia	20 (0.72)	27 (0.97)	33 (1.19)		4 (1.28)	1 (0.32)	1 (0.32)	
Dysuria	22 (0.79)	15 (0.54)	14 (0.50)	0.428	2 (0.64)	0 (0.00)	2 (0.64)	
Urolithiasis	18 (0.65)	16 (0.57)	7 (0.25)		0 (0.00)	0 (0.00)	0 (0.00)	
Endoparasite	78 (2.80)	107 (3.8)	134 (4.8)		9 (2.88)	10 (3.2)	6 (1.92)	0.048*
Ectoparasite	18 (0.65)	23 (0.82)	12 (0.43)	0.072	1 (0.32)	0 (0.00)	4 (1.28)	
Protozoa	11 (0.39)	22 (0.79)	18 (0.65)		3 (0.96)	6 (1.92)	1 (0.32)	
PPR	50 (1.80)	109 (3.9)	78 (2.80)	0.732	FMD (30) & wart (1)			
CE[2]	3 (0.10)	7 (0.25)	3 (0.10)		6 (1.92)	12 (3.85)	12 (3.85)	0.170
Others (Virus)	1 (0.03)	6 (0.22)	2 (0.07)		1 (0.32)	0 (0.00)	0 (0.00)	
Tetanus	11 (0.39)	0 (0.00)	3 (0.10)	0.000*	Anthrax (3) & others (4)			
Foot rot	1 (0.03)	4 (0.14)	8 (0.29)		0 (0.00)	3 (0.96)	0 (0.00)	0.140
Others (Bacteria)	4 (0.14)	23 (0.82)	19 (0.68)		2 (0.64)	1 (0.32)	1 (0.32)	
MN[3]	25 (0.90)	36 (1.29)	40 (1.43)	0.03*	3 (0.96)	1 (0.32)	3 (0.96)	0.296
Mus-Ner[4]	26 (0.94)	21 (0.76)	14 (0.50)		5 (1.60)	0 (0.00)	1 (0.32)	
Eye infection	16 (0.57)	17 (0.61)	24 (0.86)	0.964	2 (0.64)	1 (0.32)	1 (0.32)	0.598
Skin disease	14 (0.50)	17 (0.61)	23 (0.82)		2 (0.64)	4 (1.28)	3 (0.96)	
General	88 (3.17)	103 (3.7)	136 (4.9)		25 (8.0)	14 (4.5)	14 (4.5)	0.289
Special	74 (2.66)	14 (0.51)	4 (0.14)	0.000*	7 (2.24)	2 (0.64)	1 (0.32)	
Orthopedics	15 (0.54)	18 (0.65)	16 (0.57)		4 (1.28)	6 (1.92)	2 (0.64)	
Anestrous/RB[5]	13 (0.47)	28 (1.00)	46 (1.65)		1 (0.32)	1 (0.32)	7 (2.24)	0.588
Preg Check[6]	5 (0.18)	12 (0.43)	34 (1.22)	0.289	3 (0.96)	2 (0.64)	6 (1.92)	
Mastitis	6 (0.22)	11 (0.39)	39 (1.40)		0 (0.00)	1 (0.32)	5 (1.60)	
Abortion	1 (0.03)	6 (0.22)	19 (0.68)	0.922	0 (0.00)	1 (0.32)	2 (0.64)	0.505
Dystocia	1 (0.03)	4 (0.14)	11 (0.39)		0 (0.00)	0 (0.00)	1 (0.32)	
Total 2278 (100)	**737 (26.5)**	**986 (35.5)**	**1055 (38.0)**	**102 (32.7)**	**103 (33.0)**	**107 (34.3)**	**312 (100)**	

(URTI[1]-Upper Respiratory Tract Infection, CE[2]-Contagious ecthyma, MN[3]-Metabolic & Nutritional diseases, Mus-Ner[4]- Musculoskeletal and Nervous system, RBS[5]- Repeat Breeder Syndromes, Preg Check [6]- Pregnancy Check up *-Significant P≤0.05).

Table 3. Sex wise clinical diseases and manifestations of goats and cattle

Parameters	Total number of goat N=2778 No (%)			Total number of Cattle N=312 No (%)		
	Male	Female	P-Value	Male	Female	P- Value
Weakness	25 (0.90)	52 (1.87)	0.323	2 (0.64)	5 (1.60)	0.460
Fattening	22 (0.79)	27 (0.97)		3 (0.96)	2 (0.64)	
Idiopathic	32 (1.15)	62 (2.23)		5 (1.60)	4 (1.28)	
Loss of appetite	95 (3.42)	149 (5.36)	0.067	15 (4.08)	14 (4.49)	0.400
Diarrhea	48 (1.72)	64 (3.20)		4 (1.28)	9 (2.88)	
Tympani	32 (1.15)	80 (2.88)		9 (2.88)	14 (4.49)	
URTI[1]	71 (2.55)	115 (4.14)	0.219	2 (0.64)	5 (1.60)	0.853
Pneumonia	37 (1.33)	43 (1.55)		2 (0.64)	4 (1.28)	
Dysuria	26 (0.94)	25 (0.90)		0 (0.00)	4 (1.28)	
Urolithiasis	38 (1.37)	3 (0.11)		0 (0.00)	0 (0.00)	
Endoparasite	118 (4.25)	201 (7.24)	0.000*	13 (4.17)	12 (3.85)	0.504
Ectoparasite	23 (0.83)	30 (1.08)		4 (1.28)	1 (0.32)	
Protozoa	22 (0.79)	29 (1.04)		6 (1.92)	4 (1.28)	
PPR	105 (3.78)	132 (4.75)		FMD (30) & wart (1)		0.232
CE[2]	5 (0.18)	8 (0.29)	0.726	12 (3.85)	18 (5.77)	
Others (Virus)	5 (0.18)	4 (0.14)		1 (0.32)	0 (0.00)	
Tetanus	8 (0.29)	6 (0.22)		Anthrax (3) & others (4)		0.155
Foot rot	5 (0.18)	8 (0.29)	0.624	1 (0.32)	2 (0.64)	
Others (Bacteria)	22 (0.79)	24 (0.86)		4 (1.28)	0 (0.00)	
MN[3]	29 (1.04)	72 (2.59)	0.001*	2 (0.64)	5 (1.60)	0.853
Mus-Ner[4]	33 (1.19)	28 (1.00)		2 (0.64)	4 (1.28)	
Eye infection	15 (0.54)	42 (1.51)	0.010*	2 (0.64)	2 (0.64)	
Skin disease	27 (0.97)	27 (0.97)		4 (1.28)	5 (1.60)	
General	115 (4.14)	212 (7.63)	0.000*	27 (8.65)	26 (8.33)	0.890
Special	82 (2.95)	10 (0.36)		5 (1.60)	5 (1.60)	
Orthopedics	26 (0.94)	23 (0.83)		7 (2.24)	5 (1.60)	
Anestrous/RB[5]	0	87 (3.13)		0 (0.00)	9 (2.88)	
Preg Check[6]	0	51 (1.84)		0 (0.00)	11 (3.53)	
Mastitis	0	56 (2.02)		0 (0.00)	6 (1.92)	
Abortion	0	26 (0.94)		0 (0.00)	3 (0.96)	
Dystocia	0	16 (0.58)		0 (0.00)	1 (0.32)	
Total 2278 (100)	**1066 (38.37)**	**1712 (61.63)**		**132 (42.30)**	**180 (57.70)**	

(URTI[1]-Upper Respiratory Tract Infection, CE[2]-Contagius ecthyma, MN[3]-Metabolic & Nutritional diseases, Mus-Ner[4]-Musculoskeletal and Nervous system, RBS[5]- Repeat Breeder Syndromes, Preg Check [6]- Pregnancy Check up
*-Significant P≤0.05).

Loss of appetite was the most common owners complain rather than any other diseases and disorders at TVH. In case of respiratory disorders, higher prevalence was found in upper respiratory tract infection in adult goats 94 (3.38%) rather than young and old over the pneumonia with significant P value (P=0.041). In case of bacterial infection, prevalence of others bacterial diseases in adult goats were higher than young and old over the tetanus and foot rots with the significant P value (P=0.000).

The results showed that the prevalence of metabolic and nutritional diseases was high in old 40(1.43%) and adult goats 36 (1.29%) and low in kid 25 (0.90%) over the musculoskeletal and nervous disorders with significant P value (P=0.030).In case of surgical cases, higher prevalence was found in general surgical cases in old goats 136 (4.9%) and adult goats 103 (3.7%) than young goats 88 (3.17) over the special and orthopedic surgical conditions with significant P value (P=0.000).

Prevalence of clinical diseases and disorders in goats and cattle in relation with their sex revealed that highest numbers of female animals (goats 61.63% and cattle 57.70%) followed by male animals (goats 38.37% and cattle 42.30%) were admitted at TVH during the period of 2012. So that result revealed that there was highest and significant number female goats and cattle were registered over the male goats and cattle (Table-3) agreed with results of Kabir *et al.* (2010). The prevalence of urolithiasis was higher in male goat 38 (1.37%) than female goats over dysuria with significant P value (P=0.000). The observations of the present study showed that the prevalence of metabolic and nutritional diseases was higher in female goats 72 (2.59%) than male goats 29 (1.04%) over the musculoskeletal and nervous disorders with significant P value (P=0.001) due to no supplementation of vitamin mineral to old and adult animals were given to study area. Diseases of special sense organs results revealed that the prevalence of eye infection was higher in female goats 42 (1.51) than male goats 15 (0.54%) over the skin diseases with significant P value (P=0.010). In case of surgical cases higher prevalence was found in female goats in general surgery 212 (7.63%) than male goats 115 (4.14%) over special and orthopedic surgery with significant P value (P=0.000). In case of gynae-obstetrical cases, high prevalence were found in anestrous/repeat breeder syndromes (goats 3.13% and cattle 2.88%) followed by pregnancy check up (goats 1.84% cattle 3.53%), mastitis (goats 2.02% and cattle1.92%) and lest prevalence was found in obstetrical cases, abortion (goats 0.94% and cattle0.96%) and dystocia (goats 0.58% and cattle 0.32%) due to negative energy balance of feed most of the animal do not show heat after parturition or in young.

Prevalence of clinical diseases and disorders in goats and cattle due to seasonal variation revealed that highest prevalence was found in rainy season (goats 38.80% and cattle 34.30%) followed by summer (goats 29.77% and cattle 33.33%) and winter (goats31.43% and cattle 32.37%) (Table-4) agreed with the findings of Rahman *et al.* (2012) who showed that highest prevalence of clinical diseases and disorders in goats and cattle were found in rainy and winter season in compare to summer seasons due to after rainy season soil borne and parasitic disease condition might be aggravated and in case of winter most of the animal gather together in a shed . Among of the medicinal cases, the results showed that the highest prevalence of endoparasitic diseases were found in goats 163 (5.9%) in rainy season in compare to ectoparasitic and protazoal diseases over summer and winter season with the significant p value (p=0.000), followed by idiopathic causes of diseases 44(1.58%) with significant p value(p=0.000) , loss of appetite 101(3.6%) with significant p value (p=0.000), upper respiratory tract infection 74(2.66%) with significant p value (p= 0.001) and diseases of skin 28(1.00%) with significant p value (p=0.018) in goats during rainy season. Prevalence of dysuria in goat 24(0.86%) in winter season and urolithiasis 21(0.76%) in summer seasons with significant p value (p=0.025). In case of surgical cases, highest prevalence was found in general surgery in goats 139(5.0%) with significant p value (P=0.005). In case of gyne-obstetrics, highest prevalence was found in anestrous/ repeate breeder syndromes 44 (1.58) and pregnancy check up 22(0.79%) in goats during rainy season but p value was not significant (P=0.216). In case of obstetrical cases abortion rate was higher in goats 13(0.47%) during winter season with significant p value (P=0.016).

Prevalence of clinical diseases and disorders in goats and cattle in relation with the breeds revealed that highest clinical conditions were found in Black Bangle goat 1157(41.65%) and local breeds of cattle 192 (61.54%) followed by Jamunapari goat 878 (31.60%) and cross breeds of cattle 120 (38.46%) and cross breeds of goats 743(76.75%) due to black bangle goats are commonly known as poor man cows (Table-5). Among of the medicinal cases higher prevalence was found in loss of appetite in Black Bangle goats 87(3.13%) than other clinical conditions diarrhea and tymapni over tha Jamunapari goats and other cross breeds goats with significant P value (P=0.002). The prevalence of eye infection was higher in Black Bangle goats 34(1.22%) than skin diseases over the Jamunapari goats and other cross breeds goats with significant p value (P=0.021). In case of viral disease higher prevenlce was found in PPR in Black Bangle goats 109 (3.92%) than Jamunapari goats 66 (2.37%) and cross breeds goats 62(2.33%), but in case of cattle higher prevalence was found in FMD virus in local indigenous cattle 20(6.41%) than cross breeds cattle 10(3.21%) but p value was not significant in both cases of viral diseases. Among of the surgical cases, higher prevalence of general surgery was performed in Black

Bangle goats 128(4.60%) than Jamunapari goats and other cross breeds goats over the special and orthopedic surgery with significant P value (P=0.010).

Table 4. Season wise clinical diseases and manifestations of goats and cattle

Parameters	Total number of goat N=2778 No (%)				Total number of Cattle N=312 No (%)			
	Summer	Rainy	Winter	P-Value	Summer	Rainy	Winter	P-Value
Weakness	25 (0.90)	12 (0.43)	40 (1.44)	0.000*	2 (0.64)	2 (0.64)	3 (0.96)	0.473
Fattening	17 (0.61)	17 (0.61)	15 (0.54)		3 (0.96)	0 (0.00)	2 (0.64)	
Idiopathic	22 (0.79)	44 (1.58)	28 (1.01)		6 (1.92)	1 (0.32)	2 (0.64)	
Loss of appetite	87 (3.13)	101 (3.6)	56 (2.02)	0.000*	11 (3.5)	9 (2.88)	9 (2.88)	0.221
Diarrhea	25 (0.90)	45 (1.62)	42 (1.51)		2 (0.64)	4 (1.28)	7 (2.24)	
Tympani	40 (1.44)	24 (0.86)	48 (1.73)		3 (0.96)	10 (3.2)	10 (3.2)	
URTI[1]	42 (1.51)	74 (2.66)	70 (2.52)	0.001*	1 (0.32)	4 (1.28)	2 (0.64)	0.672
Pneumonia	34 (1.22)	30 (1.08)	16 (0.58)		1 (0.32)	2 (0.64)	3 (0.96)	
Dysuria	14 (0.50)	13 (0.47)	24 (0.86)	0.025*	1 (0.32)	3 (0.96)	0 (0.00)	
Urolithiasis	21 (0.76)	11 (0.40)	9 (0.32)		0 (0.00)	0 (0.00)	0 (0.00)	
Endoparasite	72 (2.59)	163 (5.9)	84 (3.02)	0.000*	5 (1.60)	12 (3.8)	8 (2.56)	0.670
Ectoparasite	31 (1.12)	10 (0.36)	12 (0.43)		2 (0.64)	2 (0.64)	1 (0.32)	
Protozoa	16 (0.58)	27 (0.97)	8 (0.29)		2 (0.64)	3 (0.96)	5 (1.6)	
PPR	59 (2.12)	97 (3.49)	81 (2.91)	0.909	FMD (30) & wart (1)			0.391
CE[2]	2 (0.07)	6 (0.22)	5 (0.18)		9 (2.88)	10 (3.2)	11 (3.5)	
Others (Virus)	2 (0.07)	3 (0.11)	4 (0.14)		0 (0.00)	1 (0.32)	0 (0.00)	
Tetanus	1 (0.04)	6 (0.22)	7 (0.25)	0.220	Anthrax (3) & others (4)			0.327
Foot rot	5 (0.18)	4 (0.14)	4 (0.14)		2 (0.64)	0 (0.00)	1 (0.32)	
Others (Bacteria)	11 (0.40)	23 (0.83)	12 (0.43)		1 (0.32)	2 (0.64)	1 (0.32)	
MN[3]	42 (1.51)	34 (1.22)	25 (0.90)	0.284	2 (0.64)	5 (1.60)	0 (0.00)	0.429
Mus-Ner[4]	20 (0.72)	19 (0.68)	22 (0.79)		3 (0.96)	3 (0.96)	0 (0.00)	
Eye infection	12 (0.43)	18 (0.65)	27 (0.97)	0.018*	2 (0.64)	2 (0.64)	0 (0.00)	0.263
Skin disease	14 (0.50)	28 (1.00)	12 (0.43)		2 (0.64)	3 (0.96)	4 (1.28)	
General	90 (3.24)	139 (5.0)	98 (3.53)	0.005*	24 (7.7)	16 (5.1)	13 (4.2)	0.482
Special	39 (1.40)	22 (0.79)	31 (1.12)		2 (0.64)	3 (0.96)	5 (1.60)	
Orthopedics	18 (0.65)	13 (0.47)	18 (0.65)		4 (1.28)	4 (1.28)	4 (1.28)	
Anestrous/RB[5]	24 (0.86)	44 (1.58)	19 (0.68)	0.216	4 (1.28)	1 (0.32)	4 (1.28)	0.952
Preg Check[6]	15 (0.54)	22 (0.79)	14 (0.50)		7 (2.24)	2 (0.64)	3 (0.96)	
Mastitis	17 (0.61)	18 (0.65)	21 (0.76)		3 (0.96)	1 (0.32)	2 (0.64)	
Abortion	3 (0.11)	10 (0.36)	13 (0.47)	0.016*	1 (0.32)	1 (0.32)	1 (0.32)	0.513
Dystocia	7 (0.25)	1 (0.04)	8 (0.29)		0 (0.00)	1 (0.32)	0 (0.00)	
Total 2278 (100)	**827 (29.77)**	**1078 (38.80)**	**873 (31.43)**		**104 (33.33)**	**107 (34.30)**	**101 (32.37)**	

(URTI[1]-Upper Respiratory Tract Infection, CE[2]-Contagious ecthyma, MN[3]-Metabolic & Nutritional diseases, Mus-Ner[4]- Musculoskeletal and Nervous system, RBS[5]- Repeat Breeder Syndromes, Preg Check [6]- Pregnancy Check up *-Significant P≤0.05)

The result of this study showed that digestive disorders, parasitic diseases and general surgical cases are predominantly present in goats and cattle among of the other medicinal and surgical cases. Proper feeding, housing, deworming, vaccination and management is therefore necessary for the development of goats and cattle industry in our country. The knowledge derived from this study will increase our understanding the clinical

diseases and disorders in goats and cattle in a particular area and taking necessary preventive measure against these diseases and disorders at national policy level.

Table 5. Breed wise clinical diseases and manifestations of goats and cattle

Parameters	Total number of goat N=2778 No (%)				Total number of Cattle N=312 No (%)		
	Black Bangle	Jamunapari	Cross	P- Value	Local breed	Exotic breed	P- Value
Weakness	31 (1.12)	26 (0.94)	20 (0.72)	0.737	5 (1.60)	2 (0.64)	0.780
Fattening	25 (0.90)	15 (0.54)	9 (0.32)		3 (0.96)	2 (0.64)	
Idiopathic	45 (1.62)	27 (0.97)	22 (0.79)		7 (2.24)	2 (0.64)	
Loss of appetite	87 (3.13)	76 (2.74)	81 (2.92)	0.002*	21 (6.73)	8 (2.56)	0.734
Diarrhea	48 (1.73)	46 (1.66)	18 (0.65)		10 (3.21)	3 (0.96)	
Tympani	55 (1.98)	34 (1.22)	23 (0.83)		15 (4.81)	8 (2.56)	
URTI[1]	78 (2.81)	55 (1.98)	53 (1.91)	0.170	2 (0.64)	5 (1.60)	0.429
Pneumonia	34 (1.22)	31 (1.11)	15 (0.54)		3 (0.96)	3 (0.96)	
Dysuria	22 (0.79)	16 (0.57)	13 (0.47)	0.773	4 (1.28)	0 (0.00)	
Urolithiasis	20 (0.72)	13 (0.47)	8 (0.29)		0 (0.00)	0 (0.00)	
Endoparasite	102 (3.67)	119 (4.3)	98 (3.53)	0.678	13(4.17)	12 (3.85)	0.504
Ectoparasite	19 (0.68)	21 (0.76)	13 (0.47)		4 (1.28)	1 (0.32)	
Protozoa	20 (0.72)	15 (0.54)	16 (0.57)		6 (1.92)	4 (1.28)	
PPR	109 (3.92)	66 (2.37)	62 (2.23)	0.118	FMD (30)& wart (1)		0.483
CE[2]	9 (0.32)	3 (0.11)	1 (0.04)		20 (6.41)	10 (3.21)	
Others (Virus)	7 (0.25)	0 (0.00)	2 (0.07)		1 (0.32)	0 (0.00)	
Tetanus	7 (0.25)	5 (0.18)	2 (0.07)	0.820	Anthrax (3) & others (4)		0.147
Foot rot	5 (0.18)	4 (0.14)	4 (0.14)		3 (0.96)	2 (0.64)	
Others (Bacteria)	19 (0.68)	13 (0.47)	14 (0.50)		0 (0.00)	2 (0.64)	
MN[3]	40 (1.44)	35 (1.26)	26 (0.94)	0.931	4 (1.28)	3 (0.96)	0.391
Mus-Ner[4]	26 (0.94)	20 (0.72)	15 (0.54)		2 (0.64)	4 (1.28)	
Eye infection	34 (1.22)	8 (0.29)	15 (0.54)	0.021*	2 (0.64)	2 (0.64)	0.569
Skin disease	19 (0.68)	17 (0.61)	18 (0.65)		3 (0.96)	6 (1.92)	
General	128 (4.60)	103 (3.7)	96 (3.45)	0.010*	30 (9.62)	23 (7.37)	0.380
Special	51 (1.84)	21 (0.76)	20 (0.72)		8 (2.56)	2 (0.64)	
Orthopedics	24 (0.86)	19 (0.68)	6 (0.22)		7 (2.24)	5 (1.60)	
Anestrous/RB[5]	28 (1.00)	30 (1.08)	29 (1.04)	0.945	5 (1.60)	4 (1.28)	0.590
Preg Check[6]	18 (0.65)	15 (0.54)	18 (0.65)		8 (2.56)	3 (0.96)	
Mastitis	21 (0.76)	18 (0.65)	17 (0.61)		3 (0.96)	3 (0.96)	
Abortion	14 (0.50)	5 (0.18)	7 (0.25)	0.378	2 (0.64)	1 (0.32)	0.505
Dystocia	12 (0.43)	2 (0.07)	2 (0.07)		1 (0.32)	0 (0.00)	
Total 2278 (100)	**1157 (41.65)**	**878 (31.60)**	**743 (26.75)**		**192 (61.54)**	**120 (38.46)**	

(URTI[1]-Upper Respiratory Tract Infection, CE[2]-Contagious ecthyma, MN[3]-Metabolic & Nutritional diseases, Mus-Ner[4]- Musculoskeletal and Nervous system, RBS[5]- Repeat Breeder Syndromes, Preg Check [6]- Pregnancy Check up *-Significant P≤0.05)

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