CONTENTS

ABSTRACT

Reproductive problems are one of the most important factors which causes serious economic loss in livestock by reducing fertility. The objectives of this study were to observe the prevalence of reproductive diseases and associated factors in different animals at SAQTVH, CVASU. Total 1212 cases were recorded from registered case sheet from SAQTVH,CVASU during the period of 2014 to 2016.All the reproductive diseases were categories in 3 groups; gynecological, obstetrical and andrological cases .The prevalence of gynecological cases were highest in goat 85.5%(524) than the dog 6%(37), cat 4.5%(27) and cattle 3.5%(25).the prevalence of obstetrical cases in goat(91%) ,which was higher than dog(5%),cattle(3%)and cat(1%). Again the most prevalence of andrological cases in goat (49%) than dog (29.5%), cattle (13.5%) and cat (8%).The gynecological cases was highest prevalence in HFX breed cattle with the age of >2-4 years old at winter season. The obstetrical cases were more in cross breed cattle with >2-4 years old aged at winter and summer season. Andrological cases were most in HFX breed cattle at 1 year old age in rainy season. The gynecological cases were most percentage in cross breed goat with the age of >1-2 years old in rainy season. The obstetrical cases were more in local breed goat at >1-2 years old in rainy season. Andrological cases were more percentage in local breed of goat with 1 year old age at rainy season. The gynecological cases were higher in local breed cat with the age of >2-4 years in winter season. The obstetrical cases in pet animal were most prevalent in the local dog breed at age of 1 year old in winter season. The andrological cases were highest in local dog breed at 1 year old age pet in rainy season. The reproductive cases are more prevalent in SAQTVH, CVASU and this report may help develop control strategies against reproductive diseases reported in the study.

Key words: Reproductive diseases, ruminants, pet animals, prevalence, SAQTV

CHAPTER 1

INTRODUCTION:

Livestock is the most prospective sector which addresses the problems of landless, marginal and small-scale farmers and capable of helping in poverty alleviation. This sector contributes about 2.7% of national Gross Domestic Product (GDP) in Bangladesh (Economic Review, 2010). Pet animal has also great important among pet lover. People rear pet animal for companion, recreation and business.But the productivity of those entire animals are decreasing by affecting different reproductive diseases. Reproduction is important for milk production in cow, more off spring in goat, maximum pappy in dog and maximum kitten in cat. Reproductive disorders of goat and sheep are the great economic problems. The reproductive disorders are the major causes of reduced fertility in cattle, goat, sheep and pet animal. Reproductive abnormalities have been described as the largest single cause of loss of livestock production (McDowell, 1972). It has negative effect on meat production since pregnancy and parturition are prerequisite for reproduction. Reproduction of goats has an impact on successful fertility (Sattar and Khan, 1988). About 34 types of reproductive diseases and disorder were included in that study .All the diseases were sorted in three major group of reproductive diseases and disorder; gynecological, obstetrical and androlgical .

The different management and production systems and environmental conditions under which cattle, goats and sheep are maintained could greatly affect the occurrence of reproductive diseases and disorders. Although major reproductive disorders greatly responsible for high economic loss in dairy cow, goat and pet animals. Limited researches have been done on the prevalence of the categories reproductive diseases in SAQTVH, CVASU.But no significant systemic studies have been done on reproductive disorders of cow, goat and pet animal. Therefore, the study was designed to investigate the   reproductive diseases and disorders in cattle, goat and pet animals at SAQTVH in Chittagong veterinary and animal sciences university (CVASU).

CHAPTER 2

MATERIALS AND METHODS

Study area and selection of animal:

The research works was done in Shahidul Alam Quaderi teaching veterinary hospital (SAQTVH), CVASU, Chittagong. Total 1212 cases were recorded from case record sheet assigned for SAQTVH, CVASU, where cattle cases 41,goat 1073,dog 64 and cat cases were 34 in number.

Study design and data collection:

 From the SAQTVH case registered sheets, 2014-2016 periods was selected to record the different reproductive diseases and disorders in cattle, goat, god and cat. After patient registration in SAQTVH, CVASU the case registered sheet was filled up by graduate or sometimes undergraduate students with the help of registered veterinarian. The SAQTVH case registered sheet was defined for Medicine, Surgery and Theriogenological (Reproductive) case recorded according to the owner's complained. The reproductive cases were confirmed by the data recorded after physical, clinical and sometimes laboratory test were done.

Data analysis:

All the data related to reproduction from the registered case sheet recorded at SAQTVH during the period from 2014-2016 were entered in the Microsoft Excel 2007. The data were coded, scored, compiled, tabulated and descriptive analyzed in stata.

CHAPTER 3

RESULT

The investigation was carried out to observe the clinical trend of occurrence of reproductive diseases and disorders in different species including: cattle, goat, dog and cat at the Shahidul Alam Quaderi Teaching Veterinary Hospital (SAQTVH), Chittagong Veterinary and Animal Sciences University (CVASU), Chittagong during the period from 2014 to 2016. Prevalence of reproductive diseases in different species at SAQTVH, CVASU during the period of 2014-2016 is presented in table.1.The highest prevalence of gynecological cases were observed in goat (85.5%) followed by dog (6%), cat (4.5%) and cattle (4%). Similarly, the highest percentages of Obstetrical and Andrological cases were found in goat (91% and 49%, respectively) followed by dog 5% and 29.5%, respectively), cattle (3% and 13.5%, respectively) and cat (1% and 8%, respectively).(table 1)

Table 1: Prevalence of reproductive diseases in different species at SAQTVH, CVASU during the period of 2014-2016

Species	Reproductive diseases		
	Gynecology	obstetrics	Andrlogy
Cattle	4%(25)	3%(7)	13.5%(8)
Goat	85.5%(524)	91%(209)	49%(30)
Dog	6%(37)	5%(11)	29.5%(18)
Cat	4.5%(27)	1%(2)	8%(5)

The cross breed cattle was observed the highest susceptible breed to the occurrence of obstetrical problems (87.5%) followed by local (12.5%) and HFX (0%). In relation to the Gynecological problems, the HFX breed of cattle was found the highest susceptible (45%) followed by local (40%) and cross (15%).In andrological problems, the HFX breed of cattle was found highest susceptible (50%) followed by local (25%) and cross (25%).

The age was varied the prevalence of different reproductive diseases. More than 2-4 years old cattle showed comparatively highest percentages of Gynaecological cases (38%) followed by 1 years old (33%), >4 years old (24%) and >1-2 years old cattle (5%). In Obstetrical cases, 57% problems were observed in cattle belonging the age >2-4 years old which was followed by >1-2 years (28%), and >4 years (14%) and 1 year(0%). Age was also varied the andrological cases in SAQTVH, CASU during that definite period. Cattle with 1 year old was suffered comparatively highest due to Andrological problems (45%) followed by 33% Andrological cases were found in cattle with >1-2 years old and 22% problems were recorded in cattle with >4 years old.

Season was also an important factor to vary the prevalence of reproductive diseases in cattle. Winter season showed that the highest percentages of gynecological cases (38%) compared with summer (35%), rainy season (27%).Obstetrical cases were similar in winter (42%) and summer season (42%) which was comparatively higher than rainy season (16%). It was reverse that in rainy season regarding andrological cases. In rainy comparatively highest percentages of andrological problems (75%) were register in SAQTVH, CVASU than that of summer and winter (25% and o%, respectively. (Table 2)

Table.2.Factors associated with the reproductive diseases in cattle during 2014-2016.

Factors		Reproductive diseases and disorders		
		Gynecology	Obstetrics	Andrlogy
Breed	HFX	45%(9)	0	50%(4)
	Local	40%(8)	12.5%(1)	25%(2)
	Cross	15%(3)	87.5%(7)	25%(2)
Age (yrs)	1	33%(14)	0	45%(4)
	> 1-2	5%(2)	28%(2)	33%(3)
	>2-4	38%(16)	57%(4)	0
	> 4	24%(10)	14%(1)	22%(2)
Seasons	Winter	38%(10)	42%(3)	0
	Summer	35%(9)	42%(3)	25%(2)
	Rainy	27%(7)	16%(1)	75%(6)

The local breed goat was observed the highest susceptible breed to the occurrence of obstetrical problems (50%) followed by cross (28%) and jamnapari (22%).   In relation to the Gynecological problems, the cross breed goat was found the highest susceptible (47%) followed by cross (39%) and jamnapari (14%).in relation to andrological problems, the local breed of goat was found highest susceptible (53%) than the cross breed (31%) and jamnapari(16%) were respectively.

The age was varied the prevalence of different reproductive diseases. More than 1-2 years old goat showed comparatively highest percentages of Gynaecological cases (35%) followed by above 4 years old (32%), >more than2-4 years old (26%) and 1 years old cattle (7%). In Obstetrical cases,(37%)problems were observed in cattle belonging the age >1-2 years old which was followed by >4 years (33%), and >2-4 years (24%) and 1 year(6%). Age was also varied the andrological cases in SAQTVH, CVASU during that definite period. Cattle with 1 year old was suffered comparatively highest due to Andrological problems (77%) followed by (33%).Andrological cases were found in cattle with >4 years old(10%)and problems were recorded in cattle with >2-4 years old(8%)and 1 years old (5%).

Season was also an important factor to vary the prevalence of reproductive diseases in goat. Rainy season showed that the highest percentages of gynecological cases (56%) compared with winter (27%) and summer season (17%). Obstetrical cases were highest in rainy (48%) than winter season (32%) which was comparatively higher than summer season (20%). It was reverse that in rainy season regarding andrological cases. In rainy comparatively highest percentages of andrological problems (49%) were register in SAQTVH, CVASU than that of summer and winter (18% and 34 %,) respectively. (Table 3)

Table .3 Factors associated with reproductive diseases in goat during 2014-2016

Factors		Reproductive diseases and disorder		
		gynecology	obstetrics	Andrlogy
Breed	Local	39%(198)	50%(90)	53%(188)
	Cross	47%(240)	28%(49)	31%(110)
	jamnapari	14%(70)	22%(40)	16%(55)
Age	1 year	7%(17)	6%(12)	77%(290)
	Above 1-2	35%(90)	37%(70)	5%(21)
	Above 2-4	26%(67)	24%(45)	8%(30)
	Above 4	32%(81)	33%(62)	10%(39)
Season	Winter	27%(78)	32%(60)	34%(43)
	Summer	17%(50)	20%(39)	18%(23)
	Rainy	56%(160)	48%(90)	49%(60)

The local breed of cat was observed the highest susceptible breed to the prevalence of gynecological problems (43%) followed by local breed of dog (33%) and spitz (13%), golden retriever(6%),German shepherd(5%) and cross breed (0%).In relation to the Gynecological problems, the local breed dog was found the highest susceptible (37%) followed by local German shepherd (27%) and local cat breed(18%),cross breed (18%),golden retriever(0%) and spitz (0%).in relation to andrological problems, the local breed of dog was found highest susceptible (38%) and local cat breed(14%),golden retriever(14%)spitz 14%)and German shepherd (0%) were respectively.

The age was varied the prevalence of different reproductive diseases. More than 2-4years old showed comparatively highest percentages of Gynaecological cases (38%) followed by above 4 years old (27%), >more than1-2 years old (19%) and 1 years old cattle (14%). In Obstetrical cases,(44%)problems were observed in pet animal belonging the age 1 years old which was followed by >1-2 years (28%), and >2-4 years (22%) and >4 year(5%). Age was also varied the andrological cases in SAQTVH, CVASU during that definite period. Pet animal with 1 year old was suffered comparatively highest due to Andrological problems (67%) followed by (22%)Andrological cases were found in cattle with >1-2years old(11%)and problems were recorded in cattle with >4 years old (0%) were recorded in >2-4 years aged pet.

Season was also a valuable factor to vary the prevalence of reproductive diseases in goat. Winter season showed that the highest percentages of gynecological cases (38%) compared to rainy (37%) and summer season (35%).Obstetrical cases was similar in winter(43%) and summer (43%) but which were comparatively higher than rainy season (14%). It was reverse that in rainy season regarding andrological cases. In rainy comparatively highest percentages of andrological problems (55%) were registered in SAQTVH, CVASU than that of winter and (27% and (18%) respectively. (Table 4)

Table.4, Factors associated with reproductive diseases in pet animals.

Factors		Reproductive diseases and disorder		
		gynecology	obstetrics	Andrlogy
Breed	Local(cat)	43%(27)	18%(2)	14%(3)
	German shepherd	5%(3)	27%(3)	-
	Cross	-	18%(2)	9%(2)
	Golden retriever	6%(4)	-	14%(3)
	Local (dog)	33%(21)	37%(4)	38%(8)
	Spitz	13%(8)	-	14%(3)
Age	1 year	14%(5)	44%(8)	67%(12)
	Above 1-2	19%(7)	28%(5)	22%(4)
	Above 2-4	38%(14)	22%(4)	-
	Above 4	27%(10)	5%(1)	11%(2)
Season	Winter	38%(10)	43%(3)	27%(3)
	Summer	35%(9)	43%(3)	18%(2)
	Rainy	37%(7)	14%(1)	55%(6)

The results revealed that the number of reproductive cases were comparatively higher in 2015 (450) than that of 2016 (424) and 2014 (340) (Fig 1).
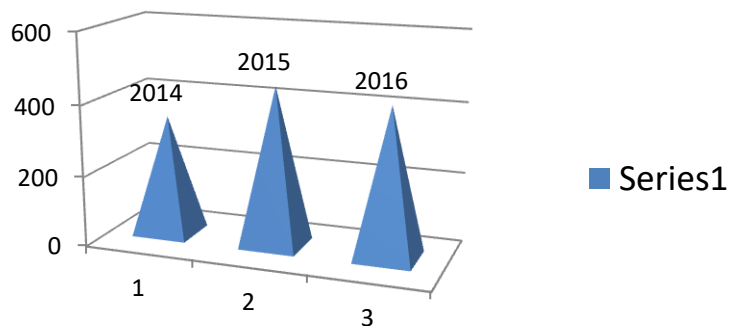

Fig.1: number of reproductive cases in different years in SAQTVH, CVASU.

CHAPTER 4

DISCUSSION

The prevalence of gynecological cases during the study period (2014-2016) was highest in goat (85.5%) which is more than the prevalence of dog(6%),cat(4.5%)and cattle (4%),this is due to the goat can be easily transportable animal and also dogs are increasing day by day as people now rearing dogs for companion,recreation and investigation purposes(Rahman et .al .2012).The prevalence of obstetrical cases is highest in goat(91%) than dog(5%),cattle(3)and cat(1%).It might be due to high number of goat cases came to hospital. The andrological cases were high prevalence in goat (49%) more than dog (29.5%) and cattle (13.5%) and cat (8%).low prevalence of cat because of few pet lover rear pet animals than other species. The cross breed cattle had high prevalence of obstetrical cases (87.5%) than local (12.5%) and HFX (0%).Which is similar to the previous survey of (Atikuret.et.al 2015) that happened may be the crossbreed cow always inseminated with pure high yielding breed so large size of fetus happened dystocia in dam. The highest gynecological cases were in HFX (45%),more than local(40%)and cross(15%).due to the repeat breeder syndrome ,uterine and virginal prolapsed etc type diseases are more in HFX.Andrological cases also high in HFX(50%) than local and cross breed this may be due to hamper on adjustment of breed in new environment.

In 1 year old animal is highest prevalence of andrology cases (45%) which was higher than all other aged group animal. During 1 year age generally urolithiasis and castration is done. So that age might be higher andrology cases. The highest gynecological cases was in >2-4 years old cattle this may be heat detection and dystocia is happened on that age. The obstetrical cases were more in >2-4 years old cattle may be aged animal has more reproductive diseases.

The winter season has more prone to gynecological cases (38%) in cattle than other seasons. Obstetrical cases were similar prevalence in winter (42%) and summer (42%) that might be lack of green grass in winter and environmental stress in summer.Andrological cases were highest in rainy season (75%) than other season this is due to moisture environment and houses.

Among the 3 breed studied the cross breed goat had more prevalence value of gynecological cases(47%)than others two breed this might be due to cross breed are more in Chittagong than other two breed. But obstetrical cases were more in local breed (50%) than the cross and jamnapari and also andrological cases also higher in local than cross and jamnapari breed goat. That happened may be due to all local breed goat done castration but other breeds are used for reproduction purposes or the Hindu festival.

 1 years old goat had more andrological cases (77%) than the other ages. That was due to castration of goat is done in that age. Gynecological cases are higher in age <1-2 years than others ages this is due to goat shows repeat breeder syndrome and anestrous at that period of age.obstetricals cases was higher in age >4 years that was due to pyometra, mummified fetus is happened on that period.

In the season of rainy the gynecological cases (56%) was higher than other seasons due to moisture environment and cloudy wet land. The obstetrical cases are higher in rainy season due to moisture environment.Andrology cases also high in rainy season due to moist housing and environment.

Among the pet animal local breed of cat was susceptible to gynecological disease(s 43%) that other pets .that was due to cat had more repeat breed and anestrous than others pet animals.

Local breed of dog had more prevalence of obstetrical cases (37%) than other pet breeds. This is due to low nutrition, unhygienic environment provided to that animal.Andrological cases is more in local breed dog (38%) than others that happened because of almost all local breed dog are performed castration by owners and also unhygienic environment.

Age of 1 year pet animal are high prevalence of Andrology cases (67%) than other ages because of castration of pet animal s is done within 1 year normally. The obstetrical cases was more in age of 1 years in pet animal due to that age happened first parturition time. The gynecological case (38)was more in age >2-4 years aged

animal than other ages that happened due to anestrous and pyometra was occurred on that time.

In winter season highest gynecological cases was (38%) than summer and rainy season that happened due to poor some pet animals are seasonal breeder. The obstetrical cases more prevalence in winter(43%) and summer (43%) which are higher than rainy season .that was due to impact of environment .The andrology cases more prevalent in rainy season that was due to moisture season occurred more reproductive disease and castration also done in that season as the seasonal breeder dog aged 6-8 month on that season.

CHAPTER 5

LIMITATION

The study has following constraints:

- Small number of cattle cases recorded due to lack of transportation facilities
- All reproductive cases of Chittagong not included
- Goat cases are huge number due transportation facilities and metropolitan area
- Lab test not done due to lack of financial support.

CHAPTER 6

CONCLUSIONS

The reproductive diseases and disorders in SAQTVH, CVASU, Chittagong are more prevalent in goat (88.5%) followed by dog (5%), cattle, (3.5%)and cat(3%) respectively.

- ✓ The gynecological cases was highest prevalence in HFX breed cattle with the age of >2-4 years old at winter season.
- ✓ The obstetrical cases were more in cross breed cattle with >2-4 years old aged at winter and summer season.
- ✓ Andrological cases were most in HFX breed cattle at 1 year old age in rainy season.
- ✓ The gynecological cases were most percentage in cross breed goat with the age of >1-2 years old in rainy season.
- ✓ The obstetrical cases were more in local breed goat at >1-2 years old in rainy season.
- ✓ Andrological cases were more percentage in local breed of goat with 1 year old age at rainy season.
- ✓ The gynecological cases were higher in local breed cat with the age of >2-4 years in winter season.
- ✓ The obstetrical cases in pet animal were most prevalent in the local dog breed at age of 1 year old in winter season.
- ✓ The andrological cases were highest in local dog breed at 1 year old age pet in rainy season. The reproductive cases are more prevalent in SAQTVH, CVASU and this report may help develop control strategies against reproductive diseases reported in the study.

REFERENCES

Ahmed JU, 1993. Incidents of gynaeco-obstetrical disorders in Black Bengal goats. *Bangladesh Agriculture University Research Progress*, 7: 499-505.

Ahmed YF, SM Sokkar, HM Desouky and AH Soror, 2008. Abortion due to Toxoplasmosis in small ruminants. *Global Veterinaria*, 2: 337-342.

Alam J, 1993. The sector for more investment in Bangladesh. *Asian Livestock*, 7: 77-78.

Dholakia PM, Shah NM, Purohit JH and Kher HN (1987). Bacteriological study on non-specific genital infection and its antibiotic spectra in repeat breeders. *Indian Veterinary Journal* 64 (8): 637-640.

FAO (Food and Agricultural Organization of the United Nations), 1999. *Production Year Book*. Rome, Italy,53:213-219.

Hossain MA, Shamsuddin M and Ali MA (1986). Surgical diseases and reproductive disorders at the veterinary hospital of Bangladesh agricultural university,Mymensingh.bangladesh.20:1-5

McDowell RE, 1972. *Improvement of livestock production in warm climates 3rd (Ed.)* W.H. Freeman and Company, San Fransisco.

Rahman A, A Hossain, MU Ahmed and MM Sen, 1977. Studies on some reproductive performance and biometry of the female genital tract of Black Bengal goat. *Indian J. Anim. Sci.*, 47: 724-725.

Sattar A and MZ Khan, 1988. Incidence and pathology of ovarian diseases of goats. *Pakistan Vet. J.*, 3: 18-21.

ACKNOWLEDGEMENT

These are few lines of acknowledgement can never substitute the deep appreciation that I have for all those without whose help, support and inspiration this dissertation would not have taken its present shape. I would like to express the deepest sense of gratitude and all sorts of praise to the almighty Allah, whose blessing enabled me to complete this study successfully. I would like to express the first and foremost heartiest appreciation, deepest sense of gratitude, immense indebtness to my supervisor prof. Dr. Azizunnesa, Professor, Department of Medicine and Surgery, Chittagong Veterinary and Animal Sciences University (CVASU), Chittagong for her valuable advice and scholastic guidance. It is my great privilege to express my deep regards to DR. Tanjila Hasan, Lecturer, Department of Medicine and Surgery for her physical support for sample collection and valuable advice a out scientific report writing and DR.Shah jalal for his kind help. My sincere thanks to all of my friends and well wishers for their help, encouragement and inspiration during the study period and preparations of report.

BIOGRAPY

This is Saddam Hossain, son of Abdul Gapur and Azimon Nahar. I am the dweller of Cox's Bazar. I completed S.S.C in 2009 and H.S.C in 2011.I got admitted in Doctor of Veterinary Medicine course under Chittagong Veterinary and Animal Sciences University in 2012- 2013 session. During internship program, I got the opportunity to make a clinical report on the occurrence of reproductive diseases in SAQTVH during January 2014 to December 2016 under supervision of Prof. Dr. Azizunnesa, Professor, Department of Medicine and Surgery . I am enthusiastic to be a researcher on therigenology and want to be a skilled poultry practitioner in future.