

Article

Incidence of clinical diseases and disorders in native sheep at the sheep research farm of Bangladesh Livestock Research Institute, Savar, Dhaka, Bangladesh from 2012 to 2014

Md. Nuruzzaman Munsif^{1*}, Md. Ershaduzzaman², Md. Mamunur Rahman³ and Mohammad Mojibur Rahman⁴

¹Goat and Sheep Production Research Division, Bangladesh Livestock Research Institute (BLRI), Savar, Dhaka-1341, Bangladesh

²System Research Division, Bangladesh Livestock Research Institute (BLRI), Savar, Dhaka-1341, Bangladesh

³Conservation and improvement of native sheep through community and commercial farming project, Bangladesh Livestock Research Institute (BLRI), Savar, Dhaka-1341, Bangladesh

⁴Upazila Livestock Officer (leave/deputation/training reserve post) and PhD fellow, Department of Livestock Services (DLS), Bangladesh

*Corresponding author: Md. Nuruzzaman Munsif, Senior Scientific Officer, Goat and Sheep Production Research Division, Bangladesh Livestock Research Institute, Savar, Dhaka 1341, Bangladesh. Mobile: +8801717255443; E-mail: nzaman_blri@yahoo.com

Received: 08 March 2016/Accepted: 06 April 2016/ Published: 30 April 2016

Abstract: Livestock species play an important role in the agro-based economy of Bangladesh. The present study was performed to determine the magnitude and trends of clinical diseases and disorders in native sheep in order to design a set of strategies to be applied for the prevention and control of these problems in this farm. A total of 1870 indigenous sheep at BLRI sheep research farm, Savar, Dhaka, Bangladesh were included under this study. The study was carried out during the period from January 2012 to December 2014. Diagnoses and records of clinical diseases and disorders were based on pertinent clinical history, clinical findings and laboratory tests. The major clinical diseases and disorders were determined diarrhoea (5.18%), malnutrition (2.85%), lameness (1.93%), pneumonia (1.02%), alopecia (0.88%), tapeworm infection (0.81%) and fever (0.51%). In case of seasons, the highest incidence was found during rainy season (2.26%) followed by winter (5.85%) and summer (4.25%); whereas in respect of age groups, the highest incidence was found in growing sheep (26.14%) followed by adults (12.15%) and lambs (10.93%). Although some diseases and disorders took place in the BLRI sheep research farm, the incidence were very low and most of the infectious diseases did not occur because of proper management of the farm particularly regular deworming, dipping and vaccination. Moreover, on the basis of these findings measures should be taken for further prevention of such diseases and manifestations.

Keywords: incidence; clinical diseases and disorders; sheep; season; sheep research farm

1. Introduction

The role of livestock sub-sector in the agro-based economy of Bangladesh is highly important and promising (Uddin *et al.*, 2012). The livestock production has been increasing day by day in Bangladesh putting a significant effect on farm families' livelihood and health (Uddin *et al.*, 2011). But still there is a large deficit in production to meet the growing demand. So, we should try to enhance the productivity of the farm animals. Bangladesh Livestock Research Institute (BLRI) plays a vital role in generating technologies and scientific information about the diseases and disorders of livestock population. Accordingly, the present study was designed and implemented. Some researchers (Alam *et al.*, 2015; Islam *et al.*, 2015; Kabir *et al.*, 2010; Karim *et al.*, 2014; Munsif *et al.*, 2015; Pallab *et al.*, 2012; Parvez *et al.*, 2014; Rahman *et al.*, 2012; Sarker *et al.*, 2013;

Siddiki *et al.*, 2015) carried out their research works on clinical cases of cattle and goats in the last decade but that of sheep are not available. Therefore, the present study was conducted at BLRI sheep research farm, Savar, Dhaka, Bangladesh. The incidence data of clinical diseases and disorders were analysed on the basis of year, season and age group. The study was performed to determine the magnitude and trends of clinical diseases and disorders in native sheep in order to design a set of strategies to be applied for the prevention and control of these problems in this farm. Thus this research work can help to describe the occurrence of clinical diseases and manifestations recorded at BLRI in the district of Dhaka, Bangladesh and eventually to control them in entire Bangladesh.

2. Materials and Methods

2.1. Study area, animals and period

The study was carried out on 1870 native sheep at BLRI sheep research farm, Savar, Dhaka, Bangladesh. The study work was conducted during the period from January 2012 to December 2014. The study period was divided into three seasons viz. summer (March to June), rainy season (July to October) and winter (November to February) on the basis of local climatic conditions.

2.2. Nutritional management of the animals

All animals were reared in semi-intensive method and allowed for grazing in the selected land of BLRI from 8 AM to 2 PM. The concentrate feeds were supplied as per standard feeding schedule.

2.3. Deworming, dipping and vaccination of the animals

The sheep of this farm were regularly dewormed at three months interval, whereas dipping was implemented once in every month. The vaccination against PPR and tetanus was performed once in a year on regular basis in this farm.

2.4. Diagnosis of diseases/disorders and data recording

The clinical history, clinical findings and relevant laboratory tests were considered for the diagnoses of diseases and disorders. The data were recorded properly in a particular register.

2.5. Data analysis

The data were analysed by using SPSS software version 12 (SPSS, Inc., Chicago, IL, USA) to determine the incidence of clinical diseases/disorders.

3. Results and Discussion

During the study period (2012-2014) the following diseases and disorders were recorded and their incidence were determined accordingly.

3.1. Diarrhoea

The average incidence of diarrhoea in the native sheep of this farm irrespective of age, sex and season was 5.18% although the highest incidence (7.72%) was seen in the year of 2013 (Table 1 and Figure 1). But Nath *et al.* (2014) found 6.93% and 4.95% prevalence of diarrhoea in Black Bengal and Jamunapari goats, respectively which were almost similar to our present findings.

Considering the seasons, the highest incidence (1.71%) was found in summer season followed by rainy season (1.55%) and winter season (1.33%) (Table 2 and Figure 2).

Regarding the age, the highest incidence (7.46%) was determined in growing sheep followed by adults (3.51%) and lambs (2.98%) (Table 3 and Figure 3).

3.2. Pneumonia

The average incidence of pneumonia in the native sheep of this farm irrespective of age, sex and season was 1.02% although the incidence was higher in 2013 (1.47%) than those in 2012 (0.45%) and 2014 (1.14%) (Table 1 and Figure 1). But Nath *et al.* (2014) reported 5.11% and 5.41% prevalence of pneumonia in Black Bengal and Jamunapari goats, respectively which were much higher than our present findings in sheep.

Regarding the seasons, the incidence were found 0.37% and 0.53% in rainy season and winter season, respectively but there was no incidence of pneumonia during summer (Table 2 and Figure 2). This is, however, a very good indication of preventive measures adopted against pneumonia in this farm.

In respect of age, incidence was determined higher in lambs (1.73%) than growing (0.73%) and adult sheep (0.83%) (Table 3 and Figure 3). The lowest incidence of pneumonia in growing sheep may be due to their potent immunity at this stage of life.

3.3. Fever

The incidence of fever on an average in the native sheep of this farm irrespective of age, sex and season was 5.18% although the highest incidence (7.72%) was seen in the year of 2013 (Table 1 and Figure 1).

In case of seasons, the highest incidence was found in winter season (0.32%) followed by rainy season (0.16%) and summer season (0.10%) (Table 2 and Figure 2).

Regarding the age, the highest incidence was found in growing sheep (1.21%) followed by lambs (0.54%) and adults (0.21%) (Table 3 and Figure 3).

3.4. Malnutrition

The average incidence of malnutrition in the native sheep of this farm irrespective of age, sex and season was 2.85% although the highest incidence was seen in the year of 2013 (3.12%) (Table 1 and Figure 1).

Considering the seasons, the highest incidence was found in winter season (1.22%) followed by rainy season (1.01%) and summer season (0.64%) (Table 2 and Figure 2). The highest incidence of malnutrition during winter may be due to feed scarcity in that period.

In case of age group, the highest incidence was found in growing sheep (6.25%) followed by lambs (1.63%) and adults (1.31%) (Table 3 and Figure 3). The highest incidence of malnutrition in growing sheep might be due to tapeworm infection and some other factors.

3.5. Lameness

The mean incidence of lameness in the native sheep of this farm regardless of age, sex and season was 1.93% although the highest incidence was recorded in the year of 2014 (2.96%) (Table 1 and Figure 1).

Considering the seasons, the highest incidence was found in winter season (0.86%) followed by rainy season (0.48%) and summer season (0.32%) (Table 2 and Figure 2). The highest incidence of lameness during winter may be due to long time keeping of some sheep in the shed, congenital malformation, traumatic injury and overgrown hoofs.

In case of age group, the highest incidence was found in adult sheep (2.14%) followed by growing sheep (1.73%) and lambs (0.27%) (Table 3 and Figure 3). The highest incidence of lameness in adults might be due to old age and overweight.

3.6. Tapeworm infection

The overall average incidence of tapeworm infection in the native sheep of this farm was 0.81% although the highest incidence was found in the year of 2013 (1.83%) (Table 1 and Figure 1).

Considering the seasons, the highest incidence was found in rainy season (0.37%) followed by summer season (0.21%) and winter season (0.10%) (Table 2 and Figure 2). The highest incidence of tapeworm infection during rainy season may be due to favourable environs of the parasites in that period.

In case of age groups, the highest incidence was found in growing sheep (1.90%) followed by adults (0.21%) and lambs (0%) (Table 3 and Figure 3). The highest incidence of tapeworm infection in growing sheep may be due to vulnerability at this stage of life.

3.7. Alopecia

The overall mean incidence of alopecia in the farm was found 0.88% (Table 1 and Figure 1); while the highest incidence (1.59%) was recorded in 2014. It may be due to zinc and other minerals deficiency in the feeds and fodders.

In respect of seasons, the highest incidence was found in rainy season (0.42%) followed by summer season (0.21%) and winter season (0.05%) (Table 2 and Figure 2).

Regarding age group, the highest incidence was found in growing sheep (1.90%) followed by adults (0.21%) and lambs (0%) (Table 3 and Figure 3).

3.8. Dysentery

The overall average incidence of dysentery in the native sheep of this farm was 0.16% whereas the yearwise incidence were 0.12%, 0.36% and 0% in 2012, 2013 and 2014, successively (Table 1). Considering the seasons, the incidence were equal (0.05%) in both summer and winter but there was no incidence in the rainy season

(Table 2). In case of age, the incidence were 0.27%, 0.17% and 0% in lambs, growing sheep and adults, respectively (Table 3).

3.9. Enterotoxaemia

The overall incidence of enterotoxaemia on an average in the native sheep of this farm was 0.07%, whereas the yearwise incidence were 0%, 0% and 0.22% in 2012, 2013 and 2014, respectively (Table 1). Regarding the seasons, the incidence (0.05%) was found only in the rainy season (Table 2). Considering the age groups, the incidence (0.10%) was found only in adults (Table 3). This is an indication of very good management practices in the farm.

3.10. Actinomycosis

The overall average incidence of actinomycosis in the native sheep of this farm was 0.06%, whereas the yearwise incidence were 0%, 0.18% and 0% in 2012, 2013 and 2014, successively (Table 1). Conversely, Nath *et al.* (2014) reported 1.82% and 1.30% prevalence of actinomycosis in Black Bengal and Jamunapari goats, respectively which were much higher than our present findings. This may be due to species variation and management practice.

Considering the seasons, the incidence (0.05%) was found only in the rainy season (Table 2). Regarding the age groups, the incidence (0.17%) was found only in growing animals (Table 3). This is also an indication of proper management of the farm.

3.11. Abortion

The average incidence of abortion in the native sheep of this farm without considering age, sex and season was 0.34%, whereas the yearwise incidence were 0.11%, 0.91% and 0% in 2012, 2013 and 2014, respectively (Table 1). But Nath *et al.* (2014) found 1.60% and 2.19% prevalence of abortion in Black Bengal and Jamunapari goats, respectively which were much higher than our present findings. This may be due to variation in species and management system.

About seasons, the incidence was higher in the winter (0.16%) than those of summer (0.05%) and rainy season (0.10%) (Table 2). In regards to age groups, the incidence (0.65%) was found only in adults (Table 3).

3.12. Dermatitis

The overall average incidence of dermatitis in the native sheep of this farm was 0.37%, whereas the yearwise incidence were 0.67%, 0% and 0.45% in 2012, 2013 and 2014, in due order (Table 1). On the other hand, Nath *et al.* (2014) reported 2.55% and 1.37% prevalence of dermatitis in Black Bengal and Jamunapari goats, respectively which were much higher than our present findings. This may be due to species variation and management approach.

Regarding seasons, the incidence was higher in the rainy season (1.26%) than those of summer (0.10%) and winter (0.05%) (Table 2). It may be due to humid weather during rainy season. About the age groups, the highest incidence was determined in growing sheep (1.04%) followed by lambs (0.27%) and adults (0.10%) (Table 3).

3.13. PPR

The overall average incidence of actinomycosis in the native sheep of this farm was 0.22%, whereas the yearwise incidence were 0.67%, 0% and 0% in 2012, 2013 and 2014, successively (Table 1). But Nath *et al.* (2014) determined 13.87% and 10.14% prevalence of PPR in Black Bengal and Jamunapari goats successively, which were much greater than our present findings. This could be due to species variation and management practices.

Considering the seasons, the incidence (0.32%) was found only in the winter season (Table 2). Regarding the age groups, the incidence (1.04%) was found only in growing animals (Table 3).

3.14. Myiasis

The overall mean incidence of myiasis in the native sheep of this farm was 0.11%, whereas the yearwise incidence were 0.11%, 0% and 0.22% in 2012, 2013 and 2014, respectively (Table 1). In case of seasons, the incidence (0.10%) was found only in the winter season (Table 2). Regarding age groups, the incidence (0.21%) was found only in adult animals (Table 3).

3.15. External wound

The average incidence of external wound in the native sheep of this farm irrespective of age, sex and season was 0.10%, whereas the yearwise incidence were 0%, 0.30% and 0% in 2012, 2013 and 2014, in due order (Table 1). Considering the seasons, the highest incidence was found in winter (0.10%) followed by summer (0.05%) and rainy season (0.05%) (Table 2). In case of age groups, the highest incidence was noticed in growing sheep (0.52%) followed by lambs (0.27%) and adults (0%) (Table 3).

3.16. Dystocia

The mean incidence of dystocia in the native sheep of this farm regardless of age, sex and season was 0.30%, whereas the yearwise incidence were 0%, 0.91% and 0% in 2012, 2013 and 2014, in due succession (Table 1). Considering the seasons, the highest incidence was found in rainy season (0.16%) followed by summer (0.05%) and winter (0.05%) (Table 2). For age groups, reasonably the incidence (0.55%) was found only in adults (Table 3).

3.17. Metritis

The overall incidence of metritis in the native sheep of this farm was 0.06%, whereas the yearwise incidence were 0%, 0.18% and 0% in 2012, 2013 and 2014, in due order (Table 1). But Nath *et al.* (2014) determined 1.46% and 1.83% prevalence of metritis in Black Bengal and Jamunapari goats successively, which were distinctly greater than our present findings. It could be due to species variation and management practices. About seasons, the incidence (0.05%) was found only in the rainy season (Table 2). For age groups, reasonably the incidence (0.10%) was found only in adults (Table 3).

Table 1. Yearwise incidence of clinical diseases and disorders in sheep at BLRI sheep research farm (2012-2014).

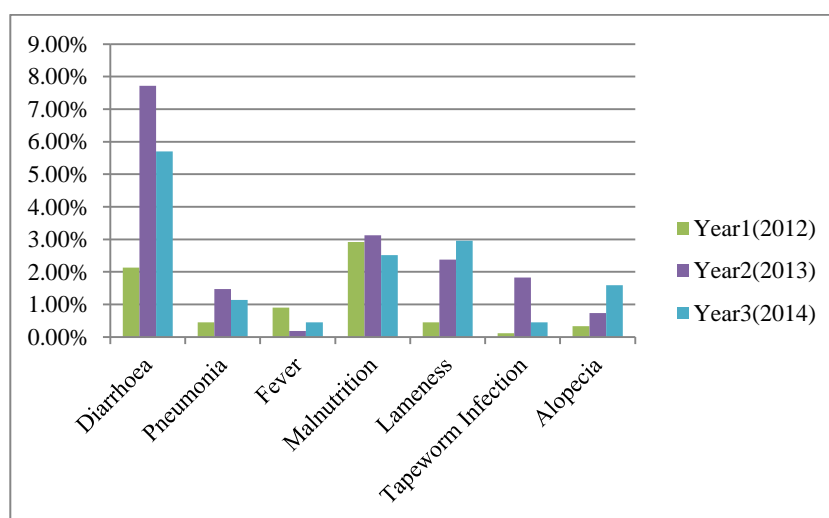
Disease/Disorder	Incidence (%) in sheep			Average
	2012 (n ₁ =888)	2013 (n ₂ =544)	2014 (n ₃ =438)	
Diarrhoea	2.13	7.72	5.70	5.18
Dysentery	0.12	0.36	-	0.16
Pneumonia	0.45	1.47	1.14	1.02
Malnutrition	2.92	3.12	2.51	2.85
Fever	0.90	0.18	0.45	0.51
Enterotoxaemia	-	-	0.22	0.07
Actinomycosis	-	0.18	-	0.06
Abortion	0.11	0.91	-	0.34
Dermatitis	0.67	-	0.45	0.37
PPR	0.67	-	-	0.22
Myiasis	0.11	-	0.22	0.11
External wound	-	0.30	-	0.10
Dystocia	-	0.91	-	0.30
Metritis	-	0.18	-	0.06
Pregnancy toxaemia	-	-	0.22	0.07
Tympany/Bloat	0.11	0.91	0.22	0.41
Hypothermia	0.11	-	-	0.03
Lameness	0.45	2.38	2.96	1.93
Fox bite	-	0.55	-	0.18
Retained Placenta	-	-	1.14	0.38
Tapeworm Infection	0.11	1.83	0.45	0.81
Hepatitis	-	-	0.22	0.07
Alopecia	0.33	0.73	1.59	0.88
Fascioliasis	-	0.18	-	0.06
Mechanical Injury	0.22	0.36	0.22	0.26
Abdominal Rupture	0.11	-	-	0.03
Rupture of Urinary Bladder	0.11	-	-	0.03
Indigestion	-	0.73	-	0.24
Total	9.63	21.79	17.71	16.73

Table 2. Seasonwise incidence of clinical diseases and disorders in sheep at BLRI sheep research farm (2012-2014).

Disease/Disorder	Incidence (%) in sheep (N=1870)		
	Summer season (March-June)	Rainy season (July -October)	Winter season (November-February)
Diarrhoea	1.71	1.55	1.33
Dysentery	0.05	-	0.05
Pneumonia	-	0.37	0.53
Fever	0.10	0.16	0.32
Malnutrition	0.64	1.01	1.22
Enterotoxaemia	-	0.05	-
Actinomycosis	-	0.05	-
Abortion	0.05	0.10	0.16
Dermatitis	0.10	1.26	0.05
PPR	-	-	0.32
Myiasis	-	-	0.10
External wound	0.05	0.05	0.10
Dystocia	0.05	0.16	0.05
Metritis	-	0.05	-
Pregnancy toxaemia	0.05	-	-
Tympany/Bloat	0.20	0.05	0.10
Hypothermia	0.05	-	-
Lameness	0.32	0.48	0.86
Fox bite	-	-	0.16
Retained Placenta	0.10	0.05	0.10
Tapeworm Infection	0.21	0.37	0.10
Hepatitis	-	0.05	-
Alopecia	0.21	0.42	0.05
Dystocia	0.05	0.16	0.05
Fascioliasis	-	-	0.05
Mechanical Injury	0.16	0.05	0.10
Abdominal Rupture	0.05	-	-
Rupture of Urinary Bladder	-	0.05	-
Indigestion	0.10	0.05	0.05
Total	4.25	6.59	5.85

Table 3. Agewise incidence of clinical diseases and disorders in sheep at BLRI sheep research farm (2012-2014).

Disease/Disorder	Incidence (%) in sheep of different age groups		
	Lamb (0-3 months) (N1=384)	Growing (>3-6 months) (N2=576)	Adult (>6 months) (N3=910)
Diarrhoea	2.98	7.46	3.51
Dysentery	0.27	0.17	-
Pneumonia	1.73	0.73	0.83
Fever	0.54	1.21	0.21
Malnutrition	1.63	6.25	1.31
Enterotoxaemia	-	-	0.10
Actinomycosis	-	0.17	-
Abortion	-	-	0.65
Dermatitis	0.27	1.04	0.10
PPR	-	1.04	-
Myiasis	-	-	0.21
External wound	0.27	0.52	-
Dystocia	-	-	0.55
Metritis	-	-	0.10
Pregnancy toxaemia	-	-	0.10
Tympany/Bloat	-	0.34	0.53
Hypothermia	-	0.17	-
Lameness	0.27	1.73	2.14
Fox bite	0.81	-	-
Retained Placenta	-	-	0.54
Tapeworm Infection	-	1.90	0.21
Hepatitis	-	-	0.10
Alopecia	1.35	1.21	0.10
Dystocia	-	-	0.55
Fascioliasis	-	1.17	-
Mechanical Injury	0.27	0.69	0.10
Abdominal Rupture	-	0.17	-
Rupture of Urinary Bladder	-	0.17	-
Indigestion	0.54	-	0.21
Total	10.93	26.14	12.15

**Figure 1. Yearwise incidence of major clinical diseases and manifestations in sheep at BLRI sheep research farm (2012-2014).**

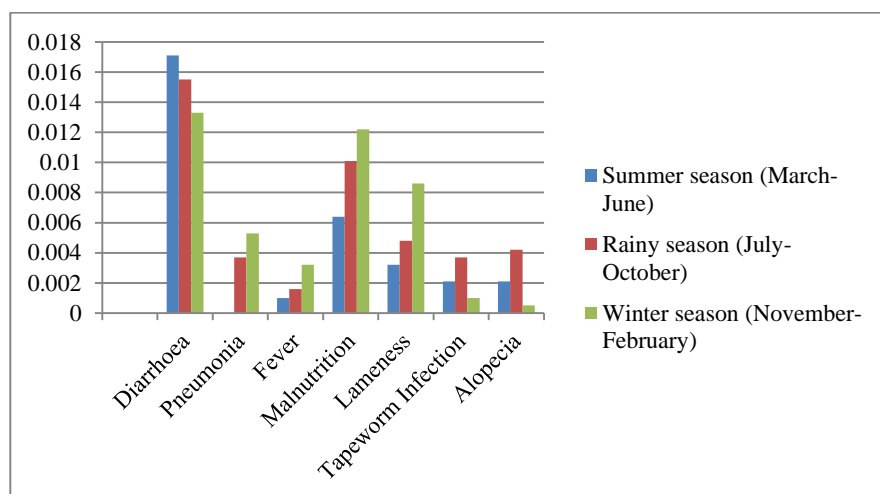


Figure 2. Seasonwise incidence of major clinical diseases and manifestations in sheep at BLRI sheep research farm (2012-2014).

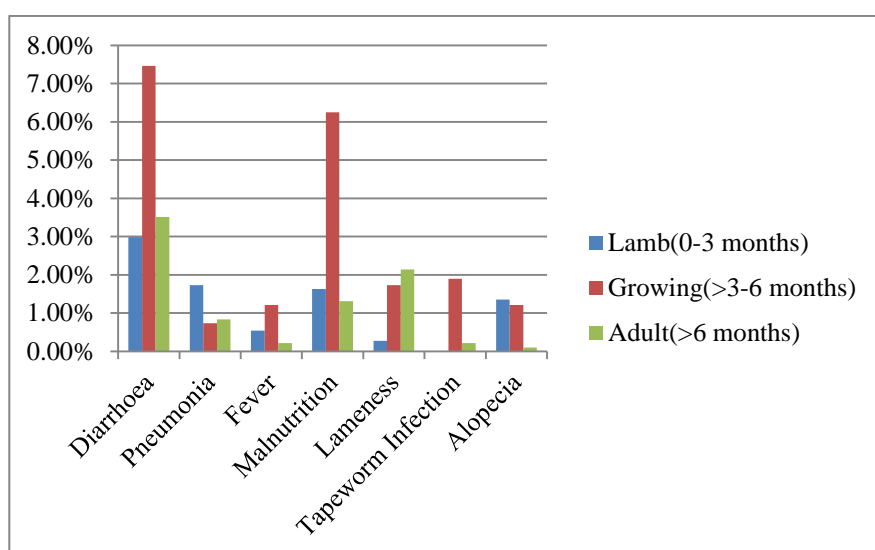


Figure 3. Agewise incidence of major clinical diseases and manifestations in sheep at BLRI sheep research farm (2012-2014).

3.18. Pregnancy toxaemia

The average incidence of pregnancy toxaemia in the native sheep of this farm regardless of age, sex and season was 0.07%, whereas the yearwise incidence were 0%, 0% and 0.22% in 2012, 2013 and 2014, in due succession (Table 1). Considering the seasons, the incidence (0.05%) was found only in summer (0.05%) (Table 2). For age groups, reasonably the incidence (0.10%) was found only in adults (Table 3). This is, however, an indication of very good management practices in the farm.

3.19. Tympany/Bloat

The average incidence of tympany/bloat in the native sheep of this farm irrespective of age, sex and season was 0.41% although the highest incidence was seen in the year of 2013 (0.91%) (Table 1). Considering the seasons, the highest incidence was found in summer season (0.20%) followed by winter (0.10%) and rainy season (0.05%) (Table 2). Regarding the age, the highest incidence (0.53%) was determined in adults followed by lambs (0%) and growing sheep (0.34%) (Table 3).

3.20. Hypothermia

The overall average incidence of hypothermia in the native sheep of this farm was 0.03% while it was seen only in the year of 2012 (0.11%) (Table 1). Concerning seasons, the incidence was found in summer season (0.05%) only (Table 2). Regarding age groups, the incidence was determined in growing sheep (0.34%) only (Table 3).

3.21. Fox bite

The overall mean incidence of fox bite in the native sheep of this farm was 0.18% while it was seen only in the year of 2013 (0.55%) (Table 1). Pertaining to seasons, the incidence was found in winter season (0.16%) only (Table 2). Concerning age groups, the incidence was noted in lambs (0.81%) only (Table 3).

3.22. Retained placenta

The overall average incidence of retained placenta in the native sheep of this farm was 0.38%, while it was seen only in the year of 2014 (1.14%) (Table 1). In relation to seasons, the incidence were found 0.10%, 0.05% and 0.10% in summer season, rainy season and winter season, respectively (Table 2). Regarding age groups, the incidence was noticed in adult sheep (0.54%) only (Table 3).

3.23. Hepatitis

The overall mean incidence of hepatitis in the native sheep of this farm was 0.07% while it was seen only in the year of 2014 (0.22%) (Table 1). Relating to seasons, the incidence was found in rainy season (0.05%) only (Table 2). In connection with age groups, the incidence was noted in adults (0.10%) only (Table 3).

3.24. Fascioliasis

The overall mean incidence of fascioliasis in the native sheep of this farm was 0.06% while it was seen only in the year of 2013 (0.18%) (Table 1). With relation to seasons, the incidence was found in winter season (0.05%) only (Table 2). In terms of age groups, the incidence was noted in growing sheep (1.17%) only (Table 3). The very low incidence of fascioliasis of sheep in this farm might be due to regular deworming practice.

3.25. Mechanical injury

The average incidence of mechanical injury in the native sheep of this farm regardless of age, sex and season was 0.26%, whereas the yearwise incidence were 0.22%, 0.36% and 0.22% in 2012, 2013 and 2014, in due succession (Table 1). In reference to seasons, the incidence were found 0.16%, 0.05% and 0.10% in summer season, rainy season and winter season, respectively (Table 2). For age groups, the highest incidence was found in growing sheep (0.69%) only (Table 3).

3.26. Abdominal rupture

The overall mean incidence of abdominal rupture in the native sheep of this farm was 0.03%, while it was seen only in the year of 2012 (0.11%) (Table 1). With reference to seasons, the incidence was found in summer season (0.05%) only (Table 2). In terms of age groups, the incidence was noted in growing sheep (1.17%) only (Table 3).

3.27. Rupture of urinary bladder

The overall average incidence of rupture of urinary bladder in the native sheep of this farm was 0.03%, while it was seen only in the year of 2012 (0.11%) (Table 1). In terms of seasons, the incidence was found in rainy season (0.05%) only (Table 2). With reference to age groups, the incidence was noted in growing sheep (1.17%) only (Table 3).

3.28. Indigestion

The overall mean incidence of indigestion in the native sheep of this farm was 0.24%, while it was seen only in the year of 2013 (0.73%) (Table 1). With reference to seasons, the incidence were found 0.10%, 0.05% and 0.05% in summer season, rainy season and winter season, respectively (Table 2). And in terms of age groups, the incidence were 0.54%, 0% and 0.21% in lambs, growing sheep and adults, respectively (Table 3).

4. Conclusions

The overall average incidence of major clinical diseases and disorders recorded during clinical examination of sick animals (native sheep) at BLRI sheep research farm, Savar, Dhaka Bangladesh were diarrhoea (5.18%), malnutrition (2.85%), lameness (1.93%), pneumonia (1.02%), alopecia (0.88%), tapeworm infection (0.81%) and fever (0.51%). Thus, we can conclude that although some diseases and disorders took place in the BLRI sheep research farm, the incidence were very low and most of the infectious diseases did not occur because of proper management of the farm particularly regular deworming, dipping and vaccination. Moreover, on the basis of these findings measures should be taken for further prevention of such diseases and disorders.

Conflict of interest

None to declare.

References

- Alam MA, MR Amin, TK Paul, TK Saha, MK Rahman and MK Rizon, 2015. Prevalence of clinical diseases and disorders of goats at Upazila Livestock Development Center, Kapasia, Gazipur. *Asian J. Med. Biol. Res.*, 1: 47-52.
- Islam S, SP Moni, SR Barua and MA Parvez, 2015. Clinical manifestations and diseases of cattle and goats in Gopalganj, Bangladesh. *Eco-friendly Agril. J.*, 8: 81-85.
- Kabir MH, MA Reza, KMA Razi, MM Parvez, MAS Bag and SU Mahfuz, 2010. A report on clinical prevalence of diseases and disorders in cattle and goat at the Upazilla Veterinary Hospital, Ulipur, Kurigram. *International Journal of Biological Research*, 2: 17-23.
- Karim MR, MS Parvin, MZ Hossain, MT Islam and MT Hussan, 2014. A report on clinical prevalence of diseases and disorders in cattle and goats at the Upazilla Veterinary Hospital, Mohammadpur, Magura. *Bangl. J. Vet. Med.*, 12: 47-53.
- Munsi MN, MA Yousuf and SMJ Hossain, 2015. Dynamics of clinical disease prevalence at cattle farm in Bangladesh Livestock Research Institute, Savar, Dhaka, Bangladesh from 2011 to 2014. *Asian J. Med. Biol. Res.*, 1: 350-358.
- Nath TC, MJU Bhuiyan, MA Mamun, R Datta, S K Chowdhury, M Hossain and MS Alam, 2014. Common Infectious Diseases of Goats in Chittagong District of Bangladesh. *Int. J. Sci. Res. Agric. Sci.*, 1: 43-49.
- Pallab MS, SM Ullah, MM Uddin and OF Miazi, 2012. A cross sectional study of several diseases in cattle at Chandanaish Upazilla of Chittagong district, Bangladesh. *Scientific Journal of Veterinary Advances*, 1: 28-32.
- Parvez MA, MR Faruque, BC Sutradhar, MM Rahman, A Mannan and R Khatun, 2014. Clinical diseases and manifestations of goats and cattle recorded at Teaching Veterinary Hospital in chittagong Veterinary and Animal Sciences University. *Bangl. J. Vet. Med.*, 12: 73-81.
- Rahman MA, Islam MA, Rahman MA, Talukder AK, Parvin MS, and Islam MT 2012. Clinical diseases of ruminants recorded at the Patuakhali Science and Technology University Veterinary Clinic. *Bang. J. Vet. Med.*, 10: 63-73.
- Sarker MAS, MA Ktaruzzaman, AKMA Rahman and MS Rahman, 2013. Retrospective study of clinical diseases and disorders of cattle in Sirajganj district in Bangladesh. *Bang. J. Vet. Med.*, 11: 137-144.
- Siddiki SHMF, MG Morshed, MS Parvin and L Naher, 2015. Clinical prevalence of diseases and disorders of cattle at the Upazilla Veterinary Hospital, Chauhali, Sirajganj. *Res. Agric. Livest. Fish.*, 2: 465-474.
- Uddin MT, MM Islam and Nasrin M, 2011. Impact of recent changes in livestock production pattern on farm families' livelihood and health in selected areas of Bangladesh. *Bang. J. Liv. Res.*, 18: 52-69.
- Uddin MT, MM Islam and Salam S, 2012. Determination of profitability and coefficients of dairy cattle production in Bangladesh. *Bang. J. Liv. Res.*, 19: 117-119.