

Incidence of diseases in goats in Bangladesh

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Abstract

An assessment of goat diseases was done in 1808 goats in one farm in Dhaka, Bangladesh. Abortion (1.7%), abscess (1.1%), actinomycosis (1.1%), bloat (2.1%), conjunctivitis (2.6%), diarrhoea (31.1%), dystocia (0.3%), contagious ecthyma (4.4%), fever (2.7%), fox bite (1.1%), lameness (9.0%), malnutrition (3.2%), mange (6.2%), mastitis (1.7%), mechanical (1.2%), pneumonia (27.4%), poisoning (0.8%), retention of placenta (0.6%), tympany 1.5% and urolithiasis (0.4%) were diagnosed. (*Bangl. vet.* 2020. Vol. 37, No. 1 - 2, 14 – 20)

Introduction

Among 422 million livestock, goats constitute 26.6 million in Bangladesh (DLS, 2020-21), which mainly live on pasture (Pulina *et al.*, 2013). Hot and humid conditions in Bangladesh favour various diseases (Munsi *et al.*, 2018; Ali *et al.*, 2019). Disease impairs the productivity of animals and incurs veterinary costs. Productivity of densely populated goats is poor due to incidence of disease (Tsegaye *et al.*, 2013). Reports on the occurrence of the diseases in goats in Bangladesh are scanty. The present study was performed to determine the magnitude and trends of clinical cases of goat' diseases at the Bangladesh Livestock Research Institute (BLRI) Farms, Savar, Dhaka, Bangladesh.

Materials and Methods

Study area, animals and period

The study was conducted on 1808 goats at BLRI goat research farm from January 2015 to December 2017. The latitude and longitudes were 23.8887°N and 90.2739°N with average annual rainfall 1854 mm and temperature from 15 to 36°C. The animals were divided into three groups according to their age (kid, growing, adult) and breed (Black Bengal, Jamunapari and Boer).

All goats were allowed grazing 8 AM to 3 PM and given concentrate feed.

All goats were dewormed every three months (Renadex®; Levamisole BP 600 mg and Triclabendazole BP 900 mg; Renata Ltd, Animal Health Division, Mirpur, Dhaka, Bangladesh) per 75 kg body weight. Dipping with 0.5% malathion was done every month. Regular vaccination against *Peste des petits Ruminants* (PPR), Foot and Mouth Diseases and tetanus was given.

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Diagnosis of clinical cases and data recording

Clinical history, post-mortem report, clinical findings and relevant laboratory tests were considered for the diagnoses of clinical cases. The data were recorded in a register book.

Data analysis

The raw data were incorporated and coded into the Microsoft® Office Excel 2013. Then import the data into SPSS 20.0 software (SPSS Inc., Chicago, IL, USA) for the calculation of incidence of clinical cases. The incidence of diseases was analysed on the basis of year, breed and age of goats.

Results and Discussion

Incidence of diseases in goats

Twenty diseases were recorded from 1808 goats (Fig. 1, 2, and 3). The highest incidence of gastro-intestinal infection was diarrhoea (31.1%), similar (33.2%) to Munsri *et al.* (2018) and Hoque and Samad, (1997). The lowest incidence (0.3%) rate of dystocia was recorded. The 2nd highest incidence (27.4%) was pneumonia, slightly less (37.4%) than reported by Munsri *et al.* (2018). Other diseases were abortion (1.7%), abscess (1.1%), actinomycosis (1.1%), bloat (2.1%), conjunctivitis (2.6%), diarrhoea (31.1%), contagious ecthyma (4.4%), fever (2.7%), fox bite (1.1%), lameness (9.0%), malnutrition (3.2%), mange (6.2%), mastitis (1.7%), mechanical injuries (1.2%), poisoning (0.8%), retained placenta (0.6%), tympany (1.5%) and urolithiasis (0.4%). Hossain *et al.* (1986) reported urolithiasis (5.3%) at the Veterinary Teaching Hospital of the Bangladesh Agricultural University from 1980 to 1984, similar to this study. McIntosh (1978) recorded urolithiasis as a disease where dietary factors played a significant role. Rahman *et al.* (1975) reported 8.6% urolithiasis in goats.

Annual incidence of diseases of goats

The incidence of diseases of goats in each year are presented in Fig. 1. Diarrhoea (37.7, 35.4 & 27.1%) and pneumonia (13.4, 12.9 & 37.8%) was highest in the year 2015, 2016 and 2017, respectively. Overall incidence of diseases of goats was 20.3% in 2015, 21.6% in 2016 and 57.9% in 2017. The highest incidence was in the year of 2017 because of high density of animals, poor recording system and high humidity and temperature. Among 20 diseases, incidence of abortion (1.4%), abscess (1.1%), actinomycosis (0.9%), Bloat (2.0%), Conjunctivitis (2.2%), Diarrhoea (27.1%), Dystocia (0.2%), Contagious Ecthyma (5.1) %, Fever (2.4%), Fox Bite (1.0%), Lameness (8.9%), Malnutrition (3.3%), Mange (2.3%), Mastitis (2.2%), Mechanical (1.1%), Pneumonia (37.8%), Poisoning (0.5%). Retained Placenta (0.3%), Tympany (0.1%) were recorded. This study was similar to previous studies. Fever of unknown origin was seen in earlier reports (10.4%) of Hoque and Samad (1997) in goats of Bangladesh. Rahman *et al.* (1972) reported incidence gastrointestinal disorders (12.7%) in goats in Bangladesh. The incidence of pneumonia in both goats and sheep (10.5%) and goats (5.8%) has been reported in India by Banerjee *et al.* (1985). Similar results were observed by

Chowdhury *et al.* (2002) where 42.4% goats were affected with pneumonia followed by diarrhoea (32.6%), contagious ecthyma (20.7%) and bloat (4.3%).

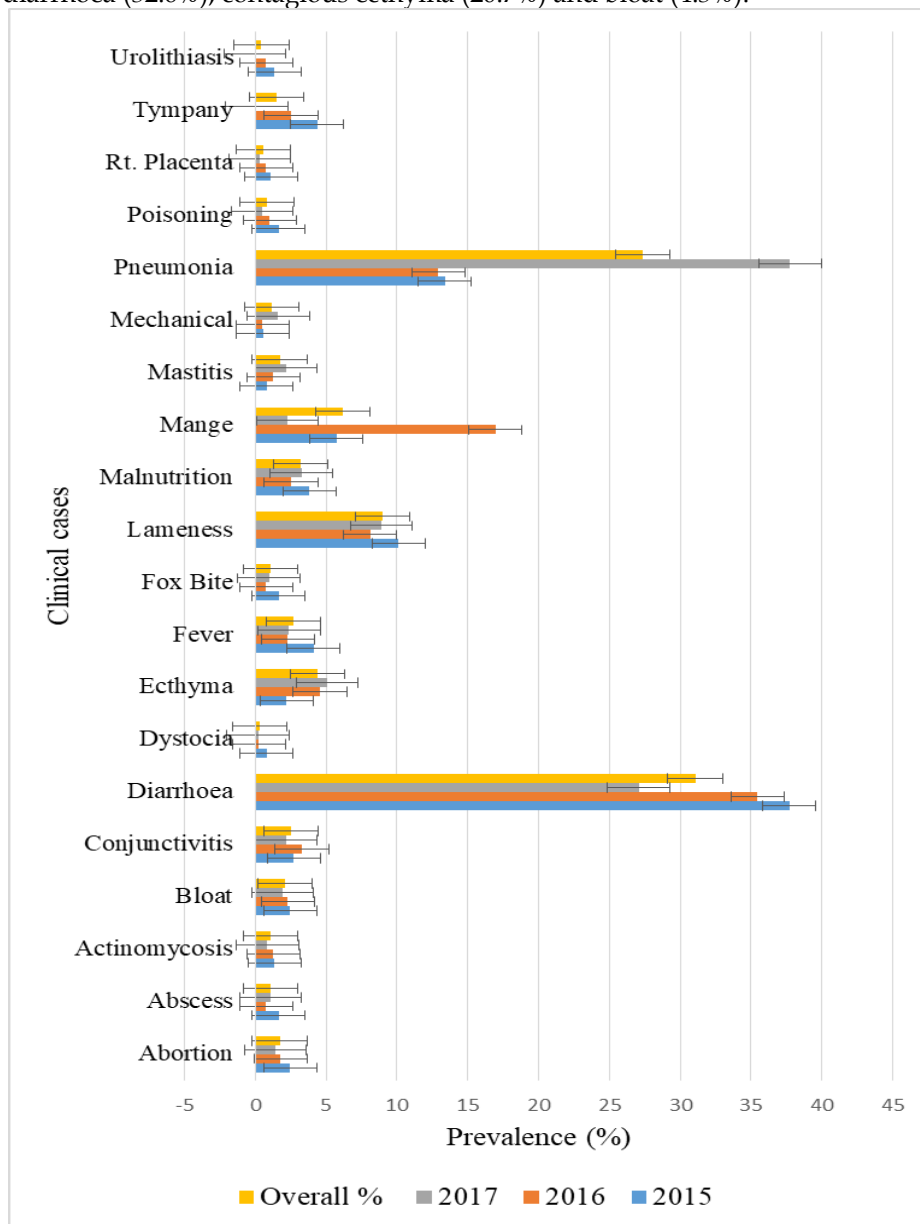


Fig. 1: Annual incidence of diseases in goats at BLRI research farm.

Incidence of diseases in goats by breed

The diseases of goats of different breeds are presented in Fig. 2. Overall incidence of diseases of goat was 37.1% in Jamunapari, 4.0% in Boer and 58.9% in Black Bengal

goats. Diarrhoea in Jamunapari, Boer and Black Bengal goats were 41.1%, 29.2% and 24.8%, respectively. Pneumonia in Jamunapari, Boer and Black Bengal goats were 13.3, 16.7 & 37.0%, respectively. Boer and Jamunapari breeds had less disease incidence than Black Bengal goats. These results support the findings of Dey *et al.* (2007); Kashem *et al.* (2011) and Amin *et al.* (2001). Nooruddin *et al.* (1987) reported overall 26.8% incidence rate of skin disease in Black Bengal goats. Similar results were observed by Chowdhury *et al.* (2002) where 42.4% Black Bengal goats were affected with pneumonia followed by diarrhoea (32.6%), contagious ecthyma (20.7%) and bloat (4.3%).

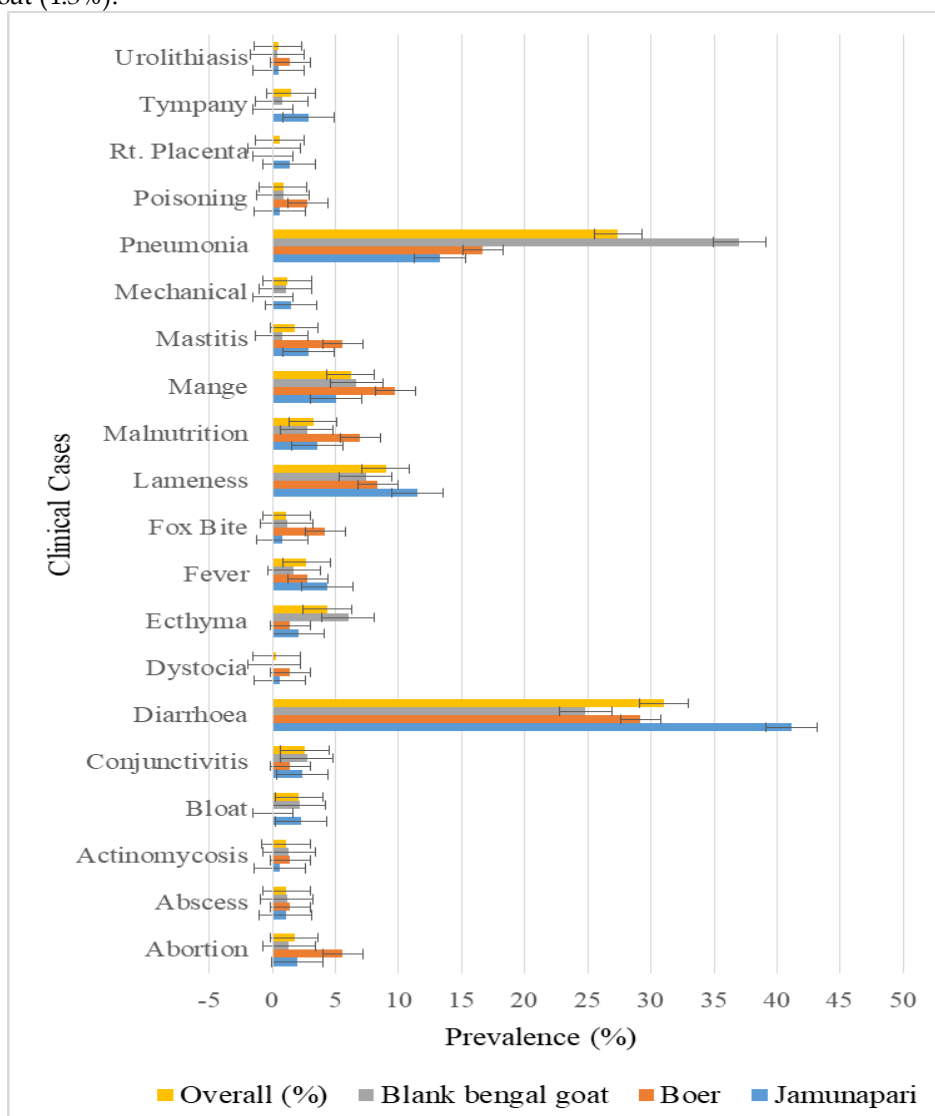


Fig. 2: Incidence of diseases in different breeds of goats at BLRI research farm.

Incidence of diseases in different age group of goats

The incidence of diseases of the goat in different age groups are presented in Fig. 3. Growing animals of 3 - 12 months' age were more susceptible to disease (38.0%), similar (31.3%) to the findings of Kabir *et al.* (2010), Nath *et al.* (2014). Kids of less than three months old had highest incidence of diarrhoea (46.8%) and pneumonia (24.4%) and lowest incidence of poisoning and urolithiasis (0.2%). Animals of 3 to 12 months old had highest incidence of pneumonia (41.4%) and diarrhoea (24.5%), similar to results (32.6%) found by Chowdhury *et al.* (2002). Lowest incidence was in contagious ecthyma (0.4%) and poisoning (0.4%), similar to results by Munsi *et al.* (2018). Animals of more than 12 months old had highest incidence of lameness (26.0%), followed by diarrhoea (19.1%), but that was lower (13.8%) than reported by Kashem *et al.* (2011). Lowest incidence rate recorded in actinomycosis (0.8%) and mechanical injuries (0.9%).

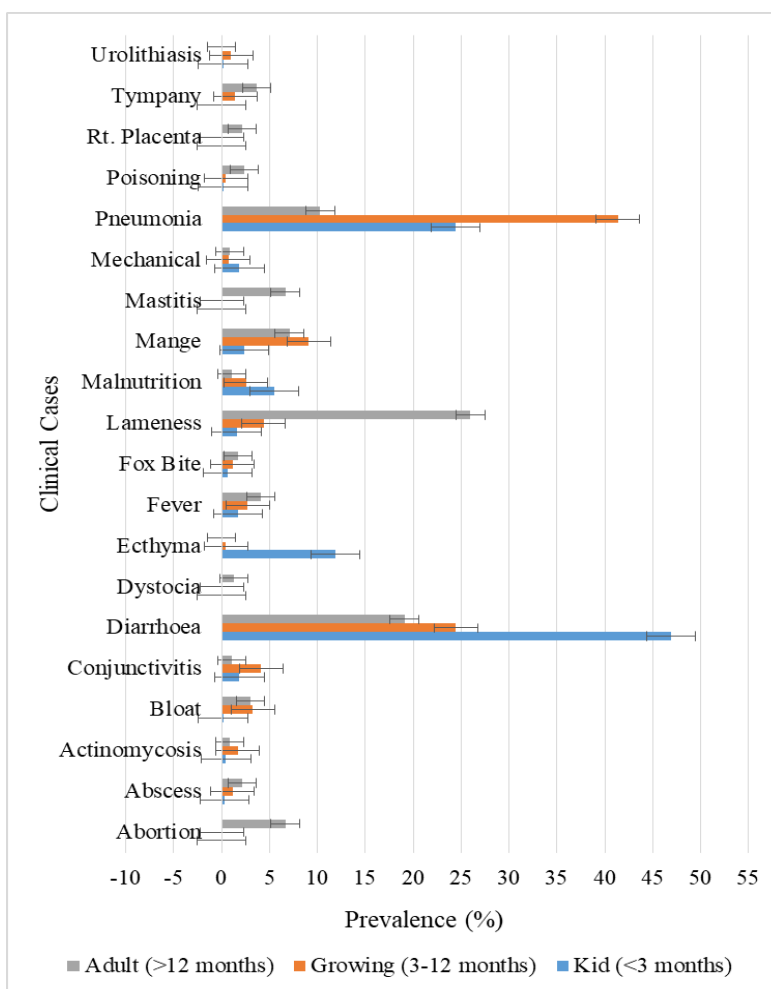


Fig. 3: Incidence of diseases in goats of various age groups at BLRI research farm.

Conclusions

Diarrhoea and pneumonia in goats are predominating at BLRI goat research farm. It is important to adopt better management and preventive measure to reduce the mortality and morbidity in semi-intensive rearing systems of goats in Bangladesh.

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