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Retrospective Study on Major Livestock Disease in Lemu and Bilbilo District

Debele Hordofa^{*} and Muhammed Geleto

Department of Medical Science, Jinka University, Jinka, Ethiopia

*Corresponding author: Debele Hordofa, Department of Medical Science, Jinka University, Jinka, Ethiopia; E-mail: danyhordofa14@gmail.com

Received date: July 01, 2022, Manuscript No. IPJMRHE-22-13920; Editor assigned date: July 04, 2022, PreQC No. IPJMRHE-22-13920 (PQ); Reviewed date: July 19, 2022, QC No. IPJMRHE-22-13920; Revised date: September 01, 2022, Manuscript No. IPJMRHE-22-13920 (R); Published Date: September 09, 2022, DOI: 10.36648/IPJMRHE.6.5.19

Citation: Hordofa D, Geleto M (2022) Retrospective Study on Major Livestock Disease in Lemu and Bilbilo District. J Med Res Health Educ Vol:6 No:5

Abstract

Ethiopia has huge numbers of livestock hampered with high prevalence of infectious disease due to poor disease prevention and control. A retrospective study was conducted using data of the record of the veterinary clinic of Lemu and Bilbilo Woreda with the objective of assessing the major livestock disease in the area from March to August 2021. The result revealed that the most commonly encountered bacterial, parasite, non-infectious disease and viral diseases recorded in the case record book were included. In this study anthrax, black mastitis, respiratory disease, dourine, colic, bloat, leg mechanical injury, strangles, actinomycosis, reproductive problem, actinobacillosis, salmonellosis, coccidosis, dictocolus, fascillosis, nematode and parasitism were recorded in the study district. The finding of the present study shows, 18.3%bloat, 11.2% nematode (GIT parasite), 9.23% parasitism (ecto parasite), 8.6% fasciollosis, 8.05% respiratory disease, 7.2% mechanical injury (wound), 6.3% for black leg and cocsidosis, 5.3% mastitis, 2.08% strangles, 4.6% dourine, 3.4% anaplasmosis, 2% colic, 1.9% reproductive disease, 1.7% salmonellosis, 1.6% actinobacillosis, actinomycosis 1.5% and 1.0% dictocolus was record from five years retrospective data at district levels. The lower percentage of 0.09% of livestock disease was recorded for anthrax diseases. From these diseases bloat is the highest livestock problem. Disease likes infectious diseases, external and endo parasite and miscellaneous diseases are the major health problems of livestock developments for the livestock sector. This might be due to the reason for the re occurrence of the disease in different years. It is therefore, suggested that outbreak investigation in the district should he based on symptomatic diagnosis and history from farmers are recommended in order to decrease disease re occurrence in the area.

Keywords: Lemu-Bilbilo; Livestock; Livestock disease; Retrospective

Introduction

Ethiopia is known to be first in livestock population in Africa country and 10th in the world with 59.5 million heads of cattle, 30.70 million sheep, 30.2 million goat, 11.01 million equines 1.21 million camels and 59.5 million poultry [1]. In the country, Lemu and Bilbilo District is one of the livestock potential district

with estimated livestock population cattle 263,450 sheep 297,110 goat 288,64 equine 107,052 poultry 85,966 and bee colony 19,835 [2].

Diseases can directly or indirectly affect livestock production which resulted in food insecurity, food safety, trade ban, rural development, and the environment, while also affecting the livelihood of farmers (EU, 2012). In Ethiopia, animal diseases are rampant in all agro ecological zones of the country and are exerting both direct and indirect damages to the livestock industry in particular and national economy in general. In addition to this, there is high morbidity and mortality of chicken with the overall mortality of 56.8% in Ethiopia.

Literature Review

Ethiopia is unable to enter into lucrative international markets of livestock and livestock products because of the presence endemic and trans boundary livestock disease which cannot adhere to the international standards, guidelines and recommendations established by the OIE mainly the rights and obligations set out by the World Trade Organization (WTO) under the agreement on Sanitary and Phytosanitary (SPS) trade standards in animals and animal products [3]. According to Yearbook, and Gizaw, et al. report, the major diseases of ruminants in Ethiopia so far reported and highly prevalent are foot and mouth disease, LSD, anthrax, black leg, bovine pasteurelosis, CBPP, bovine tuberculosis, bovine brucellosis, bovine cysticercosis, toxoplasmosis, salmonellosis, mastitis, sheep and goat pox, camel pox, CCPP, ovine pasteurelosis external and internal parasites [4,5]. Regarding chicken diseases, newcastle disease, gumboro, fowl pox, fowl cholera, fowl typhoid and coccidiosis are highly prevalent and economically important diseases in Ethiopia.

Fulfilling the international animal health and food safety standards has been a challenge for many countries including Ethiopia. This is due to the fact that infectious and zoonotic diseases intersect with the realities of porous borders and are exacerbated by the unusable agricultural, economic, and political systems prevailed in such environments [6]. Furthermore, due to the widespread animal diseases, the productivity and production efficiency of livestock species is greatly affected and the public is also at risk of contracting by any of the endemic zoonotic diseases [7-10]. Thus, to mitigate the ever-increasing trends of

disease threats posed to the animal agriculture and public health risks, immediately animal tread is one of the best prevention methods currently available and practiced in both animals and humans [11,12].

The objective of this research is:

- To identify livestock disease at woreda level.
- To assess livestock disease and treatment used at woreda level.

Materials and Methods

Study area

Lemu and Bilbilo district is located in Eastern Arsi zone, Oromia regional state of Ethiopia. It is located at 58 km distance from Asella town and 273 km far from Addis Ababa. The district is situated between 7.55°N and 8.26°N latitude and 39.23°E and 39.26°E longitudes. It is bounded in Eastern Hongolo wabe, Munesa Northern Segure, and Southern Asasa and Southern Chole [13-15]. Topographylly, the district is mostly highland area with altitude estimated ranging from 2514 to 3800 meter above sea level and has annual rainfall of 800 to 1200 mmHg and its climate zone is composed of high land 82% and mid land 18% vegetation of the area changes with altitudes and rain fall ranging from scattered trees and bushes to dense shrubs [16]. From the total land 28,685 hector, were used for cultivation 2,446 hector for grazing, 4275 hector for forest land, 381 hector for pasture land and the study area has 175,113 cattle population [17].

The study was conducted from March to August 2021 in Lemu and Bilbilo districts of Eastern Arsi Zone. The area is characterized by crop livestock mixed farming system. Teff, wheat, barley, peas and beans, are the major annual crops grown in the area. According to OBPED cattle, sheep, goats, horse, mules, donkey and poultry are the main livestock species raised in the district.

Study population

Documented data on different livestock health problems in Lemu and Bilbilo district from year 2017 to 2021 was used as study sample. The data record on the livestock disease which includes cattle, goat, sheep, equines, chicken and dogs species of animal; bloat, nematode (GIT parasite), parasitism (ecto parasite), fasciollosis, respiratory disease, mechanical injury (wound), black leg, cocsidosis, strangles, dourine, anthrax, mastitis, anaplasmosis, colic, reproductive disease, salmonellosis, actinobacillosis, actinomycosis and dictocolus, from 2017-2021 year of were used for this study [18].

Study design

The retrospective study design was conducted to identify the major livestock disease in the study area. This was done by collecting retrospective data from all public veterinary clinic in the districts that reported annually from 2017-2021 to Lemu and Bilbilo Woreda Livestock Development Office (LBWLDO) [19,20].

Sampling methods

A recorded secondary data on the disease like bloat, nematode (GIT parasite), parasitism (ecto parasite), fasciollosis, respiratory disease, mechanical injury (wound), black leg, cocsidosis, strangles, dourine, anthrax, mastitis, anaplasmosis, colic, reproductive disease, salmonellosis, actinobacillosis, actinomycosis and dictocolus was collected for numbers of cattle, equine, chicken, small ruminant as well as dog during study period regardless of age, breed and sex of animals and vaccine types used for the last five years (2017-2021) for the selected disease from LBLDO is used in the present study [21].

Data collection

Five year data (2017-2021) of livestock major diseases reported and documented in the woreda is collected from data record book in Woreda Livestock Development Office. This data was entered, stored and coded in Microsoft Excel spreadsheet (Microsoft Corporation) [22].

Descriptive statistics was used to determine major diseases, define as proportion of animal species diseased to the total numbers of animal species registered per year during the five year period study (2017-2021). The finding was expressed as percentage of major livestock disease.

Results

The finding of the present study shows, 18.3% bloat, 11.2% nematode (GIT parasite), 9.23% parasitism (ecto parasite), 8.6% fasciollosis, 8.05% respiratory disease, 7.2% mechanical injury (wound), 6.3% for black leg and cocsidosis, 5.3% strangles, 4.6% dourine, 3.4% mastitis, 2.08% anaplasmosis, 2% colic, 1.9% reproductive disease, 1.7% salmonellosis, 1.6% actinobacillosis, 1.5% actinomycosis and 1.0% dictocolus was recorded from five years retrospective data at district levels. The lower percentage of 0.09% of livestock disease was recorded for anthrax diseases.

Discussion

The present study finding showed that, different livestock health problems was encountered in the study area within five years and this diseases were bloat, respiratory disease, mechanical injury, strangles, dourine, mastitis, fasciollosis, endo parasite and ecto-parasite taking the lion role. Anaplasma is one of the tick borne diseases identified in the study area. Ticks and tick borne diseases are generally thought of as livestock related problems. However, they affect a wide range of species, livestock production systems and geographical regions [23,24]. Perry and Young state that tick-borne infections are a greater constraint to livestock development in Africa than in other geographical zones.

There exists a range of options for the control of Ticks and tick-borne diseases. The option to use is generally site specific and requires knowledge of the technology available, its cost and impact [25]. For example, where an outbreak of a Ticks and tick borne diseases occurs, the re establishment of endemic stability will take time and losses may be quite severe.

GI parasites like nematode, coccidian, dictocaulos, and fasciola are affecting many health problems in the study area. They affect a wide range of species, geographical regions and production systems. Their impact is a mixture of reducing levels of animal production and increasing costs [26,27]. Despite the widespread importance of GI parasites, it appears that they are principally a serious constraint to livestock production.

Nematodes and fasciolosis are among the zoonotic disease identified. The poor often live in close contact with their livestock and are thus at increased risk for contracting zoonotic diseases. Close contact between humans and/or dogs and livestock may also allow the disease causing organism to complete its life cycle more easily, resulting in higher levels of infection among the livestock of the poor [28].

Conclusion

Though livestock are the major source of live hood in the woreda, farmer cannot exploit full potential of the sector because of different constraints. Among this constraint livestock disease is the major ones. Disease likes infectious diseases, external and endo parasite diseases are the major health problems of livestock developments for poor productivity of the sector. Diseases occur when the fine balance of life is altered. Although the environment cannot always be controlled, control of risk factors and rational vaccination programs will reduce the prevalence of diseases in the herd.

Based on the above conclusion, the following recommendations are forwarded:

- Outbreak investigation in the region was based mainly on symptomatic diagnosis and history from farmers.
- Veterinarians working at district level need to be supported by confirmatory diagnostic techniques specific to each disease.
- This warrants the need for implementation of awareness creation among veterinarians and policy makers and strategic disease prevention program through vaccination, which should be considered before the anticipated season of outbreak for each disease.

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