

Study on the Status of Major Animal Health Problems that Impact on Cattle Fattening with Public Health and Economic Significant in Selected Kebeles of Kumbi District, East Hararghe Zone, Ethiopia

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Abstract

The aim of the current study was to assess the major animal health problems and their impact on beef cattle production in Kumbi district of East Hararghe Zone, Ethiopia. The study was conducted from April 2023 to November 2024 purposively selected, and a simple random sampling method was used to selected households' fatteners from each kebele and interviewed using structured questionnaires. The present study showed that the overall prevalence of the diseases was internal and external parasite 93.3%, bloat 53.3%, black leg 71.1%, pasteuriosis 71.8%, wound 71.8%, FMD 22.2%, and anthrax 13.33% which affect fattening cattle, respectively, in the study area. All the respondents (100%) involved in the study were experienced with deworming of their animals to protect from parasites. But, only 46.7% and 42.2% of the respondents have accessed veterinary services with limited regularity and vaccination program, respectively, in the study area. Hence, the beef cattle fattening sector should be supported through considering alleviating the major disease affecting this sector and encouraging the farmers' indigenous knowledge practice with technology.

Keywords: Animal health • Fattening • Questionnaire • Prevalence • Deworming

Introduction

The major constraints in fattening cattle production have been health problems because of the decrease of production, slow rate of regeneration, and amplification of the risk of disease transmission [1]. Infectious animal diseases that are endemic generate a variety of significant impact economically such as mortality, morbidity. Diseases have numerous negative impacts on productivity and fertility of herds [2]. Thus, knowing the status of major problems that constrain beef cattle fattening can help improving productivity and market success of producers; with the purpose of contributing in poverty reduction at all through market oriented agricultural development [3].

Traditional backyard cattle fattening is widely practiced in highland areas. This type of cattle fattening was almost entirely dependent on locally available resources to minimize costs of fattening. In areas such as Hararghe, farmers buy young oxen from the nearer lowland area and use them for ploughing for a couple of years after which they fatten and sell them before they become old and emaciated [4]. The well-known benefits of conducting biosecurity for control and prevention of disease are improved efficiency of productivity [5,6] keeping good welfare of the animals, boosting the response of immune systems to vaccines, and increased job satisfaction for producers [7]. Biosecurity practices were recommended by a number of studies based on different production

systems. Almost all of the studies prefer the use of preventive procedures, but they do not often provide evidence on cost effectiveness [8].

Although Ethiopia is known for the largest cattle population, most beef was produced under an extensive production system, with low input system as a result of which beef production and productivity are very poor as compared to the world beef production. So far, there is no documented information regarding major animal health problems in Kumbi district of East Hararghe Zone of Eastern Ethiopia.

The general objective was to assess the major animal health problems and their impact on beef cattle production in Kumbi district of East Hararghe Zone, Eastern Ethiopia, while the specific objective was to identify major health problems of beef cattle in the study area and their associated risk factors.

Materials and Methods

Descriptions of the study area

Thus study was conducted in selected kebeles of Kumbi district, East Hararghe Zone, Ethiopia. Study area was located 814 kilometers east of Addis Ababa. It is located 308 km away from the city of Harar. It is surrounded by Gola Oda, Mayu Muluke, Burka dhimtu. The annual Minimum and Maximum temperatures are 16 and 28 °C, respectively. Agroclimatic condition of the area is semiarid and arid with mean Annual rain fall 1300 mm. The rainy seasons in the area from June to September which was used for crop production, pasture and water harvest and the short rains season from February to May mainly used for land preparation, planting of long cycle crops collected after the June to September several rains, small scale production, and improving water and pastures. Total livestock population of Kumbi districts are 696,440; of which 206,678 Cattle, 191,444 goats, 140,238 sheep, 19,152 donkeys, 43 mules, 13,185 camels and 4,488 poultry and 2,540 Bee hives (KWVS, 2018).

Sampling size and sampling techniques

Selection of the study area: Kumbi district was purposively selected based on nearer to main road and climatic condition. Accordingly, three

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kebeles from Kumbi district, namely, urgo, sela and ija goda were randomly selected. From each kebele, 15 cattle fatteners or owner was selected by the simple random sampling technique, and a total of 45 households were included in the current study and interviewed using structured questionnaires.

Data collection and analysis: A questionnaire was designed to get all information related to the major beef cattle fattening health problem in the study area. Agricultural experts, development agents, and veterinarians were key informant interviewees. Data were coded and entered into a Microsoft excel and analyzed using R software. The analysis and summarization of the data was made using descriptive statistics.

Results

The overall respondents of cattle fattener showed that most of the interviewees (86.7%) were male and the others were female (13.3%) (Table 1).

Occurrence of diseases

The overall interviewed cattle fatteners (100%) from the three kebeles reported the occurrence of animal health problems, especially parasites (internal and external) which affect beef cattle fattening (Table 2). Out of the totally interviewed cattle fatteners, 41.66% of them have reported that they have experienced beef cattle loss due to death which directly affected their economy.

Control measures against diseases

All cattle fatteners (100%) in the three kebeles have been practicing the deworming program to protect their beef cattle from internal and external parasites. However, only 53.33% and 41.66% of the respondents were accessed to veterinary services and vaccination practice in the study area (Table 2).

Cattle fattening owners were also asked to describe major diseases, which affect beef cattle in the study area, and prioritize them based on their relative degree of importance. Respondents described diseases in their local names (Table 3). These local names were given their veterinary equivalent name based on the symptoms mentioned and discussions with veterinarians in the area.

Discussion

According to the current study, the majority of respondents said that

diseases are one of the most common limiting factors of the beef cattle fattening system in the area. In addition, they indicated that the disease was aggravated by a number of factors such as lack of veterinary service, lack of awareness of the society towards disease prevention and control program, and lack of attention to animal health from the government. Animal health professionals in the district have also explained that animal diseases are one of the main problems in the area, but there is a scarcity of drugs and vaccines for the treatment of their livestock due to lack of transport. Furthermore, the respondents reflected that they need to have the knowledge of how to improve their fattening cattle health condition by having access to drugs and some important vaccines.

The study showed that parasites were the most common health problems of cattle fattening in all three kebeles of the study area. Only 42.2% of cattle fatteners have vaccinated cattle against some of the diseases while entering the feedlot. This shows that a majority of the cattle fatteners in the study site do not know how to prevent disease in their farm before disease occurrence. Only 46.7% of the cattle fatteners involved in the study reported access to veterinary services from government organizations [9].

Black leg, bloat, pasteurellosis and FMD (Foot and Mouth Disease) are the most common infectious animal diseases of the respondents.

Cattle fattening practice in Kumbi district (Table 3). Out of the total 45 respondents interviewed, 71.1% of them reported that it is the main disease challenging beef cattle production. This was in agreement with that described by Radiostits [10]. In the study area, the respondents reported that in 46.7%, the FMD case affects their cattle fattening practice. FMD causes lower rates of live weight gain in beef cattle production due to reduced feed intake [11]. The study revealed that anthrax is also the disease affecting beef cattle in the district because only 13.33% of the overall respondents reported the anthrax case in their cattle fattening practice. The case of bloat in fattening beef cattle was common in Kumbi district. Majority of the respondents (53.3%) involved in the study reported that the bloating case is common animal beef cattle loss due to death which directly affected their economy.

Recommendations

Beef cattle fattening owners should receive basic training regarding control and prevention animal diseases, Regular vaccination program against major animal diseases (blackleg, pasteurellosis, FMD, and anthrax) should be practiced and a proper animal health delivery system that could be extended to all livestock owner should be developed.

Table 1. Diseases of the respondents.

Respondent's	N	Category	Frequency	% (n)
Sex	45	Male	39	86.7
		Female	6	13.3
Educational status	45	Illiterate	30	66.7
		Primary school	11	24.4
Family age size	45	<15 years	4	8.9
		≥ 15 years	17	37.8
			28	62.2

Table 2. Occurrence of diseases and producers' access to animal health protection facilities in the selected areas of Kumbi district.

	Parameters	Urgo % (n)	Sela% (n)	Ija goda % (n)	Total % (N)
Occurrence of health problems	Yes	100 (15)	100 (15)	100 (15)	100 (45)
	No	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
Vaccination practice	Yes	33.3 (5)	40 (6)	53.3 (8)	42.2 (19)
	No	66.7 (10)	60 (9)	46.7 (7)	57.8 (26)
Deworming practice	Yes	100 (15)	100 (15)	100 (15)	100 (45)
	No	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
Access to veterinary services	Yes	46.7 (7)	40 (6)	53.3 (8)	46.7 (21)
	No	53.3 (8)	60 (9)	46.7 (7)	53.3 (24)

Table 3. Major diseases affecting beef cattle in the selected three kebeles of Kumbi district.

Diseases	Local Name		Urgo % (n) (n 15)	Sela % (n) (n 15)	Ija Goda % (n 15)	Total % (N), N 45
External parasites	Raammoo	Yes	86.7 (13)	100 (15)	93.3 (14)	93.3 (42)
		No	13.3 (2)	0.0 (0)	6.7 (1)	6.7 (3)
Black leg	Abbaa Gorbaa	Yes	80 (12)	73.3 (11)	60 (9)	71.1 (32)
		No	20 (3)	26.7 (4)	40 (8)	28.9 (13)
Pasteurellosis	Gorora	Yes	86.7 (13)	80 (12)	46.7 (7)	71.1 (32)
		No	13.3 (2)	20 (3)	53.3 (8)	28.9 (13)
Bloat	Bokoka	Yes	40 (6)	66.7 (10)	53.3 (8)	53.3 (24)
		No	60 (9)	33.3 (5)	46.7 (7)	46.7 (21)
Anthrax	Abbaa sangaa	Yes	20 (3)	13 (2)	6 (1)	13.3 (6)
		No	80 (12)	86.7 (13)	93.3 (14)	86.7 (39)
Wound	Madaa	Yes	20 (3)	33.3 (5)	13.3 (2)	22.2 (10)
		No	80 (12)	66.7 (10)	86.7 (13)	77.8 (35)
FMD	Maasa	Yes	60 (9)	33.3 (5)	46.7 (7)	46.7 (21)
		No	40 (6)	66.7 (10)	53.3 (8)	53.3 (24)

Conclusion

The major constraint of beef cattle fattening production is the health problem due to decrease of production, slow rate of regeneration, and amplification of the risk of disease transmission. The overall interviewed cattle fatteners (100%) from the three kebeles reported the occurrence of animal health problems, especially parasites which affects fattening cattle. The study indicated that the overall interviewed cattle fatteners reported the presence of diseases such as internal and external parasite, bloat, black leg, pasteurellosis, wound, FMD, and anthrax which affect fattening cattle by (93.3%, 53.3%, 71.1%, 71.8%, 71.8%, 22.2%, and 37.8%), respectively, in the study area. All the respondents (100%) involved in the study have a practice of deworming to protect cattle from internal and external parasites. But, only 46.7% and 42.2% of respondents have accessed veterinary services with limited regularity and vaccination program, respectively, in the study area. Out of the totally interviewed cattle fatteners, 38.7% of them have reported that they have experienced.

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Conflict of Interest

None.

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