ASSESSMENT OF ANIMAL WELFARE STATUS DURING HOUSING, FEEDING, AND REARING OF BEEF CATTLE AT DEWENGONJ, JAMALPUR

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By:

Md. Faruk Ahammed

Roll No: 17/52

Reg No: 01884

Intern ID: 43

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Faculty of Veterinary Medicine

Chattogram Veterinary and Animal Sciences University

Khulshi, Chattogram – 4225, Bangladesh

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Approved by:

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Dr. Md Saiful Bari

Associate Professor

Department of Dairy and Poultry Science

Faculty of Veterinary Medicine

Chattogram Veterinary and Animal Sciences University

Khulshi, Chattogram – 4225, Bangladesh

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Abstract

Beef cattle welfare is not only a matter of animals but also of ethics and product quality. Today, applicable methodologies such as the Welfare Quality Assessment Protocol utilized to fatten cattle can be used to determine the welfare quality state in feedlots. According to literature sources, respiratory diseases are usually linked to overstocking, inadequate ventilation, mixing of animals, and failure of early diagnosis and treatment. Additionally, digestive problems are linked to high concentrate feeding and a lack of physically useful fiber in the diet, but behavioral problems are linked to insufficient floor space and commingling in the feedlot. Animal husbandry procedures such as mutilation, which exposes animals to pain and suffering, are linked to specific welfare issues. Questionnaires, examinations, visual inspections of animals, and photography were used to collect data. Face-to-face interviews with farmers were conducted using a questionnaire that included multiple-choice and semi-closed items to collect animal-related welfare data. Questionnaires, examinations, visual inspections of animals, and photography were used to collect data. Face-to-face interviews with farmers were conducted using a questionnaire that included multiple-choice and semi-closed items to collect animal-related welfare data. Animals are affected by different types of diseases. There was found that 62.07% of animals are physically injured, 27.41% of animals are lame, 27.41% of animals are affected by urolithiasis, 10.34% of animals are affected by tetanus, 17.24% of animals are occurs wounds, 13.79% of animals are affected by acidosis, 13.79% of animals are affected by Naval ill, 10.34% of animals are affected by Myiasis, and 24.14% of animals are affected by pneumonia. This document provides an overview of the most essential topics in beef cow welfare, as well as advice for ensuring and improving it.

Keywords: management, well-being, risks, beef fattening, nourishing, intensive farming.

Chapter 1: Introduction

Beef is raised in many of the most sensitive and important ecosystems around the world. With the global population expected to exceed 9 billion by 2050 and income levels rising, demand for beef is increasing and will only grow. The status of animal welfare during the housing, feeding, and rearing of animals by farmers was conducted on a farm label in Jamalpur district in Bangladesh during the period from April to May 2022. After milk, beef meat is the most widely consumed animal protein on the planet. Beef meat production has increased steadily over the last 50 years, rising from 23 million tons in 1960 to 57 million tons in 2014, when it reached its peak level. The United States is the world's top producer of beef, followed by Brazil and the European Union. At the same time, those countries are the world's largest beef consumers. Beef output in Bangladesh has declined in recent years, despite significant potential (Aleksić et al., 2012). Beef breeding is widely practiced around the world, and there are five major types of production systems: Dairy farming, beef breeding herds, semi-intensive grazing systems, veal farming, and intense fattening units are examples of these industries. Each of these methods has its own set of benefits and drawbacks in terms of management and production efficiency, as well as the quality of the items produced. (Petrović et al., 2011). However, in recent years, the health and well-being of beef cattle have received a lot of attention. People's initiative to care for farm animal welfare is based on their ethical attitude and awareness of what is and is not acceptable treatment of animals, with the projected repercussions of overexploitation and/or inhumane treatment of animals. (Obi et al., 2012).

Beef cattle rearing system in Bangladesh

In Bangladesh, beef cattle are largely raised on concentrate-based diets. From an animal welfare perspective, beef cattle are reared in intensive so that it has no opportunity to express natural behavior. Natural behaviors including grazing, walking, picking different sites for laying, and social interactions are all unavailable in the housing arrangement.

Definition of welfare

The Farm Animal Welfare Council (FAWC, 2014) defines welfare as the state of an animal's physical and emotional well-being. According to these ideas, animal wellbeing can only be ensured by proper production techniques, which are particular not only to the animal species but

also to production systems and husbandry, climate and farming circumstances, housing and management methods, feeding, and so on.

Assessment of welfare quality in beef cattle

Regardless of the status of animal husbandry, evaluation of welfare should be a scientific procedure that includes health, physiology, work, and behavioral variables. (European Commission, 2000). One of the 316 D Ostojić Andrić et al . The Welfare Quality Project (2009) promotes methods for assessing beef cow welfare that use physiological, physical, and behavioral characteristics to measure the welfare of fattening cattle.

Importance of welfare in beef cattle

Animal welfare is very important for beef cattle because it maintains beef quality and also ensures food safety by controlling the use of antibiotics and focusing on the proper management practices to prevent diseases rather than treatment. By ensuring animal welfare at the farm the cost of production can be substantially reduced and maximizes profit.

Chapter 2: Materials and Methods

In April and May 2022, a study on the state of animal welfare during the lodging, feeding, and rearing of animals by farmers was undertaken in the Jamalpur area of Bangladesh. During the visit, the farm's worried residents were informed of the study's goals and promised that their participation would be voluntary and that their identities would be kept private. Farmers completed an hour-long on-the-spot questionnaire. Direct observation and study of the farm yielded data on the welfare of 327 animals who were subjected to housing, feeding, and rearing.

Farm area and animals

A total of 29 farms were selected from 4 villages, and 1 Upazilla of Jamalpur district for this study. The village consisted of Bagarchar 11, Nathalia 6, Babual para 9, and Mia para 3 farms. The size and capacity of these farms varied from 10 to 20 beef animals. During this investigation, 29 farm animals were investigated, including 327 beef cattle. On all farms in the Jamalpur district, animal handling and welfare were more or less the same.

Data collection

Data were collected through questionnaires, examination, visual inspection of animals, and taking photographs. Face-to-face interviews with the farmers were carried out using a questionnaire with multiple-choice and semi-closed questions to collect animal-linked parameters related to welfare. The first part of the questionnaire referred to the welfare assessment parameters such as the way of transportation of animal, type of animal (breed, species. age, sex), body injury or lesions, lameness, cleanliness of different body parts, and most important diseases (ocular and nasal discharge, diarrhea), eye, mucus membrane. The animal welfare measurement parameters were particularly on feeding, housing, and rearing, which were selected from the Welfare Quality Assessment Protocol for Cattle. The only thing about feeding and watering that was recorded was whether or not the animals were fed and watered while being housed on a farm.

Feeding management score

Roughage feeding score per animal per day

A three-point roughage feeding score system for beef cattle was used, in which a score of was an average of 1-9 kg, a score of was an average of 10-19kg, and a score of was an average of 20-29 kg roughage feed.

Concentrate feeding score per animal per day

A two-point concentrate feeding score system for beef cattle was used, in which a score was an average of 1-3 kg, and a score was an average of 4-8 kg concentrate feeding.

Data Analysis

The collected data were entered into MS Excel and then analyzed using STATA(16 version) statistics software and the results were presented in the form of percentages and frequency in tables and diagrams.
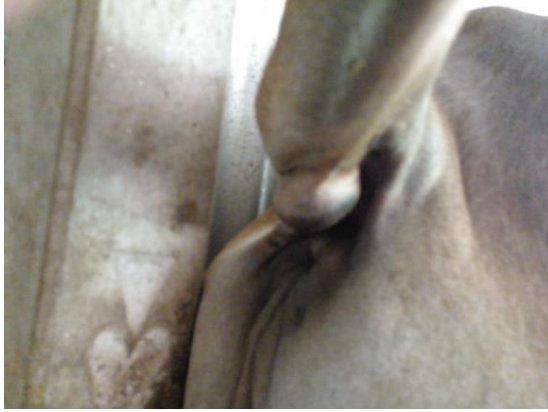
Skin lesson(tumor)

Housing system of cattle

Farmer with farm

Figure 1: Activities during data collection

Chapter 3: Results

A total number of 327 beef cattle were examined to study the animal welfare status during the housing, feeding, and rearing period, and their results are presented in the tables.

Breed of beef cattle

The beef cattle were checked to see how they fared during the raising process. The study contains different numbers of the breed. There were 58.62% Holstein Frisian, 13.79% Jersy, 10.34% Local,3.45% Sahiwal, and 13.79% Sindhi breed. (table 1).

Ectoparasitic conditions

A total of 327 beef cattle were examined to study the animal welfare status during the rearing period. There were present 13.79% of beef cattle harbor ectoparasites in their body coat. (table 1).

Table 1: cattle information

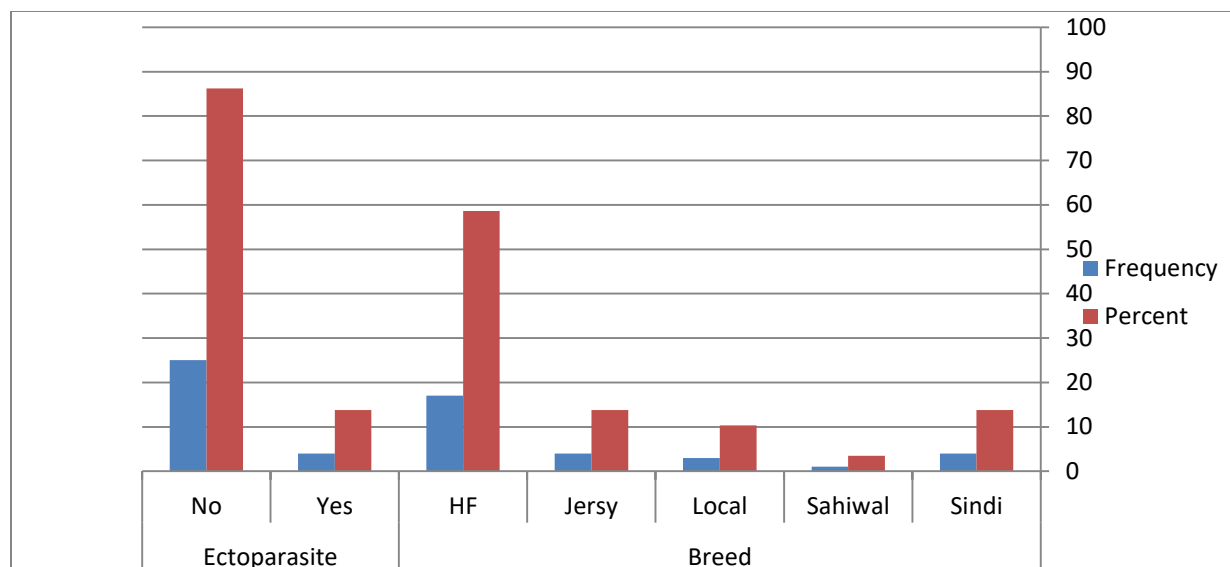| Variable	Category	Frequency	Percent
Ectoparasite	No	25	86.21
	Yes	4	13.79
Breed	HF	17	58.62
	Jersy	4	13.79
	Local	3	10.34
	Sahiwal	1	3.45
	Sindhi	4	13.79

Diagram: Cattle breed and ectoparasite information

Housing conditions

A total of 327 beef cattle were examined to study the animal welfare issues during the housing period. There were two types of housing systems found studied Face in face' and face-out systems. And there was 86.21% of the house is Face in face systems and 13.79% of the house is face out systems. (table 2)

Feeding conditions

About 13.79% of beef cattle fed 1-9 kg   roughage79.31% of beef cattle fed 10-19 kg roughage and, 6.90% of beef cattle fed 20-26 kg roughage per animal per day. On the other hand, 37.93% of beef cattle fed 1-3 kg concentrate, and 62.07% of beef cattle fed 4-8 kg concentrate per animal per day. (table 2)

Table 2: Farm management information

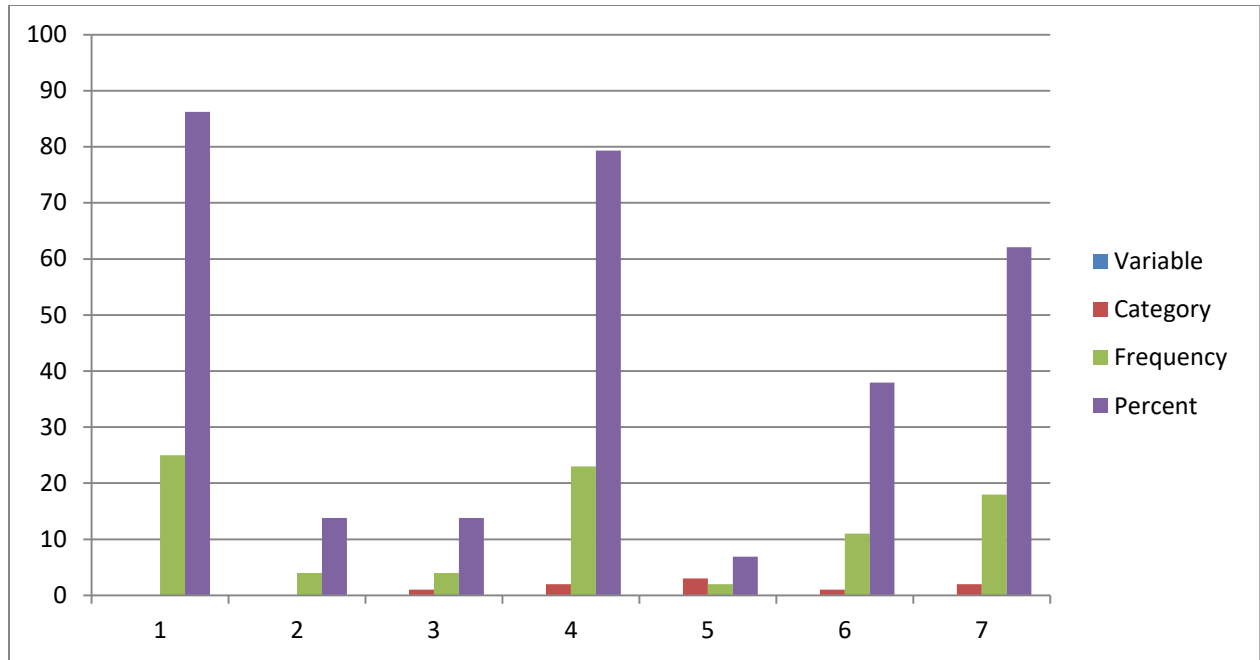| Variable	Category	Frequency	Percent
Housing system	Face in	25	86.21
	Face out	4	13.79
Amount of roughage per animal per day	1	4	13.79
	2	23	79.31
	3	2	6.90
Amount of concentrate per animal per day	1	11	37.93
	2	18	62.07

Diagram: Farm management information

Diseases status of farm

The beef cattle were studied to see whether there were any difficulties with animal welfare during the housing, feeding, and rearing process. Animals are affected by different types of diseases. There was found that 62.07% of animals are physically injured, 27.41% of animals are lame, 27.41% of animals are affected by urolithiasis, 10.34% of animals are affected by tetanus, 17.24% of animals are occurs wounds, 13.79% of animals are affected by acidosis, 13.79% of animals are affected by Naval ill, 10.34% of animals are affected by Myiasis, and 24.14% of animals are affected by pneumonia. (table 3).

Table 3: Health-related information.

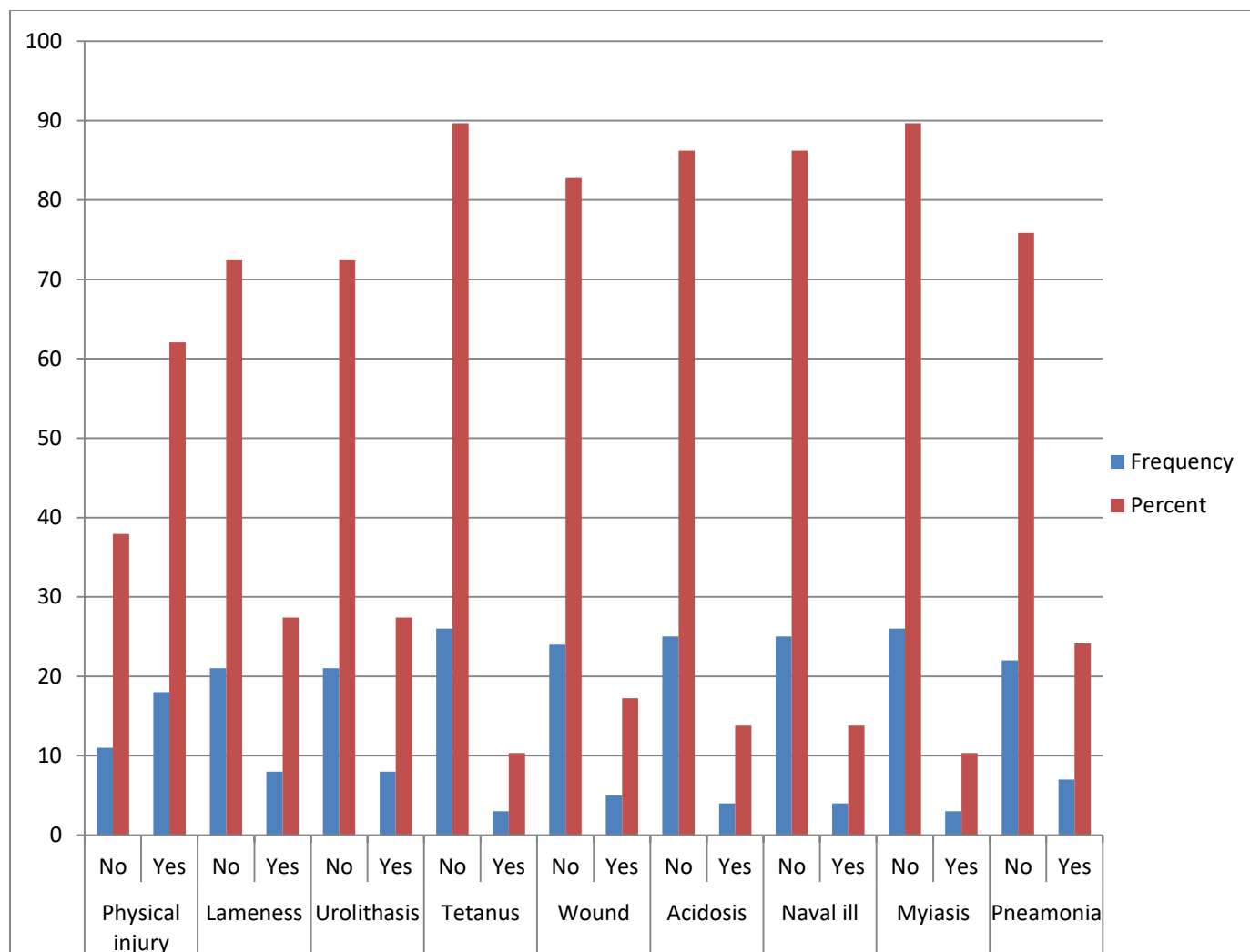| Variable	Category	Frequency	Percent
Physical injury	No	11	37.93
	Yes	18	62.07
Lameness	No	21	72.41
	Yes	8	27.41
Urolithiasis	No	21	72.41
	Yes	8	27.41
Tetanus	No	26	89.66
	Yes	3	10.34
Wound	No	24	82.76
	Yes	5	17.24
Acidosis	No	25	86.21
	Yes	4	13.79
Naval ill	No	25	86.21
	Yes	4	13.79
Myiasis	No	26	89.66
	Yes	3	10.34
Pneumonia	No	22	75.86
	Yes	7	24.14

Diagram: Health-related information

Constraints of farming

 A total number of 327 cattle were examined to study the animal welfare issues during the management of the farm. 89.66% of farms were found that lack - space for housing. And 89.66%of farms lack of pasture land. But the high incidence of diseases is only 10.34%. There was an attacking predator, availability of green fodder, and lack of pure breed is subsequently 13.79%,93.10%, and 75.86%

Table 4: Farming constraints

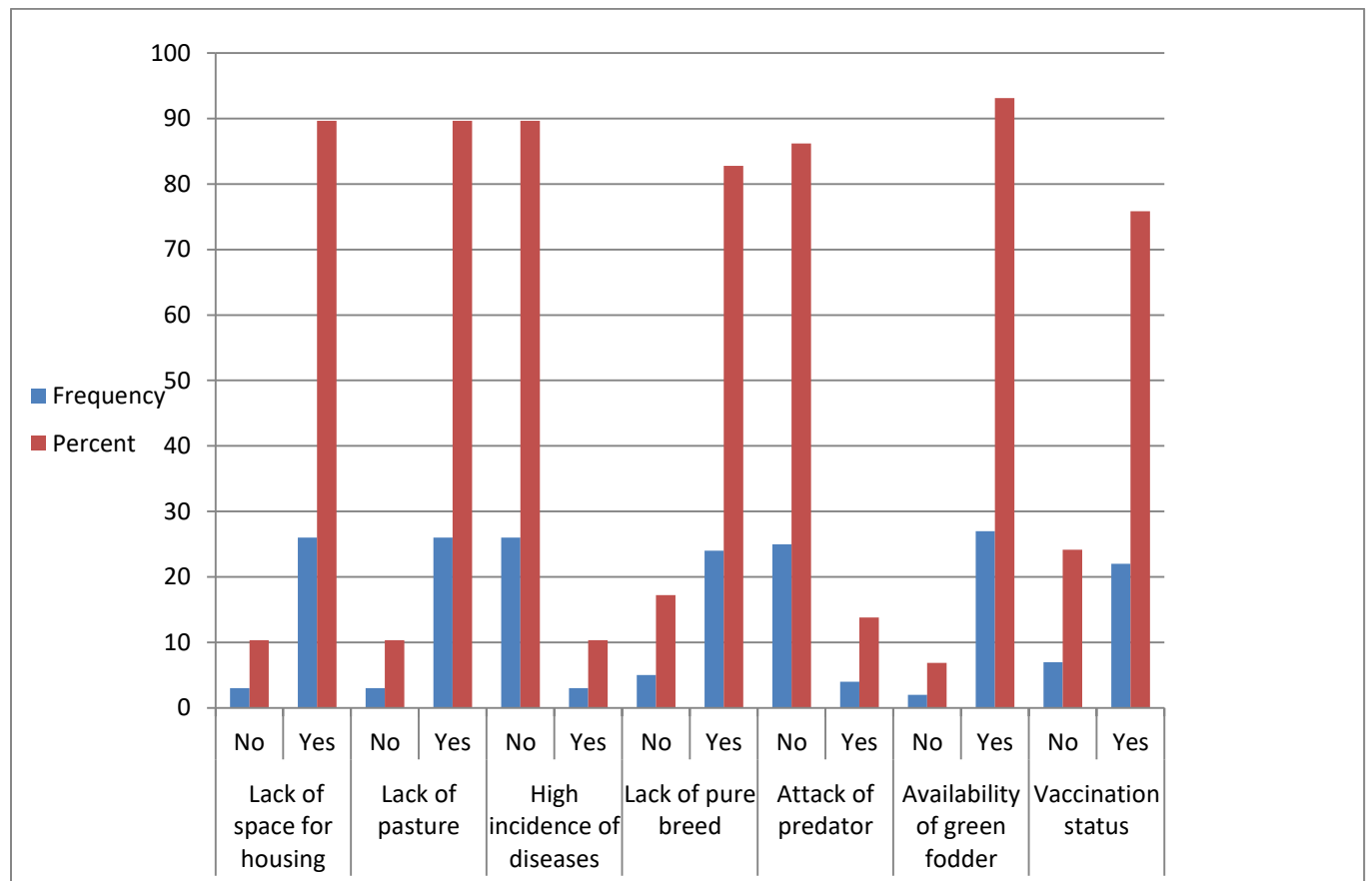| Variable	Category	Frequency	Percent
Lack of space for housing	No	3	10.34
	Yes	26	89.66
Lack of pasture	No	3	10.34
	Yes	26	89.66
High incidence of diseases	No	26	89.66
	Yes	3	10.34
Lack of pure breed	No	5	17.24
	Yes	24	82.76
Attack of predator	No	25	86.21
	Yes	4	13.79
Availability of green fodder	No	2	6.90
	Yes	27	93.10
Vaccination status	No	7	24.14
	Yes	22	75.86

Diagram: Constraints of farming.

Chapter 4: Discussion

Taking care of an animal's bodily and mental requirements is must Animal rights prohibit the use of animals for food, clothing, entertainment, or research, whereas animal welfare permits such uses as long as humane rules are followed. No animal welfare organization in Bangladesh, to our knowledge, is concerned with animal welfare issues. Animal welfare is no longer just a concern of affluent countries; it has now become a topic of official concern on a global scale. However, other than the OIE standards, the Animal Cruelty Act 1920 was enacted by the British Government for the Indian Sub-continent and is still active in Bangladesh. This study covers all animal welfare issues at local farms in Jamalpur district in Bangladesh. During housing, feeding, and rearing the animals can be important and can make an uncomfortable state of an imbalanced diet, improper housing, and unhealthy management of the animal, resulting in reduced body growth, poor welfare, and ultimately impaired meat production. The total number of 327 beef cattle was examined to study the animal welfare status during the housing, feeding, and rearing period. There was found that 62.07% of animals are injured, due to overstocking, 27.41% of animals are lame, due to overstocking, 27.41% of animals are affected by urolithiasis, due to intensive concentrated feeding,10.34% of animals are affected by tetanus, due to delays in early diagnosis, 17.24% of animals occurs wounds, due to overstocking, less ventilation, mixing of animals, 13.79% of animals are affected by acidosis, due to concentrated feeding,13.79% of animals are affected by Naval ill, resulting for delays in early diagnosis and treatment, 10.34% of animals are affected by Myiasis, delays in early diagnosis and treatment, and 24.14% of animals are affected by Pneumonia, due to respiratory diseases linked to overstocking. There are now alarming signs that the growing incidence of diseases, particularly so-called productivity diseases, is directly affecting animal wellbeing. In the broadest sense, respiratory diseases linked to overstocking, less ventilation, mixing of animals, and delays in early diagnosis and treatment, digestive disorders linked to intensive concentrated feeding, lack of physically effective fiber in the diet, and behavioral disorders linked to inadequate floor area and co-mingling were reported by EFSA Scientific Opinion (2012) as major welfare problems in cattle kept for beef production. Many health problems of beef cattle can be responsible a errors in management (Radostits, 2001). Because beef breeds have been selected for increased meat output, they are frequently associated with hypervascularity, which can result in limb diseases, calving difficulties, and lower cattle longevity (EFSA, 2012). There was found that most of the house is intensive. As a

result, the animals are deprived of adequate ventilation and free movement. The rapid growth of industry and the ever-increasing population necessitated the industrialization of beef breeding and the application of new animal farming solutions, which led to the industrialization of cattle breeding and the application of new animal farming solutions. This new period in cattle breeding included an important decrease in the housing area, inadequate or fully deprived movements and thus the hard in expressing normal behaviors and social interrelations (Ostojić Andrić et al., 2011; Hristov et al., 2011). Beef cattle kept on slatted floors exhibit more undesirable standing and lying movements, as well as more physical damage than animals kept on partially straw-bedded areas (Absmanner et al., 2009).

Chapter 5: Conclusion

The overall conclusion from this study is that inappropriate housing, feeding, and rearing of beef cattle badly affect animal welfare. Animal welfare should be considered in all animal production sectors, particularly on cattle farms and at smallholder levels, during housing, nourishing, and rearing at farm labels to ensure high-quality meat output. People involved in the meat production chain, such as stockmen, farmers, transporters, animal facility designers, and consumers, must be well-informed about animal welfare and its consequent implications on meat product quality to achieve maximum quality meat production and economic earnings. People involved in the meat production chain, such as stockmen, farmers, transporters, animal facility designers, and consumers, must be well-informed about animal welfare and its consequent implications on meat product quality to achieve maximum quality meat production and economic earnings. Animal welfare and the quality of meat produced by food animals are dependent on all the chain activities to which they are subjected from birth to slaughter. The inclusion of animal happiness as a topic of interest in the professional training of veterinarians and other specialists, as well as the support of the adoption of farm label rearing practices by government regulations. The conclusion of the research and the system utilized in the developed world may not apply to the rest of the world, necessitating a thorough evaluation of meat production systems in the developing world, including Bangladesh.

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Chapter 8: Biography

I am Md. Faruk Ahammed. I am an intern student at the Faculty of Veterinary Medicine in Chattogram Veterinary and Animal Sciences University from Jamalpur (Upazilla: Dewengonj). I completed my Secondary School Certificate (SSC) and Higher Secondary Certificate (HSC) in 2013 and 2016 respectively from Kurigram and Jamalpur. As a future veterinarian after completing my DVM degree, I would like to be a private practitioner and pursue a post-graduate diploma in the field of pet Animals and contribute to the world with my knowledge and skills.