

**CURRENT STATUS AND ANIMAL WELFARE ISSUES
OF DAIRY FARMS AT SITAKUNDA UPAZILA IN
CHATTOGRAM, BANGLADESH**



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**A production report submitted as per approved
style and content**

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ABSTRACT

The study was aimed at observing the present status of dairy farms, and to determine the welfare issues faced by dairy cows at Sitakunda Upazilla, Chattogram from 31st January 2022 to 12th May 2022. About 16 dairy farms were selected randomly. Data was collected through direct interviews with farmers, followed by inspect and observe dairy cows. A total of 317 females (87 heifers and 232 cows) were included in this study. The results showed that farmers with high level of education have more productivity. About 56.24% of farmers had honors education level. Most of the farmers used concrete floor about 62.50% in their farm that cause injury of hock joint, knee region, teat and few people used bedding materials over the concrete floor where injury level was lower than concrete floor. Most of the farm was affected by fly infestation about 56.25% as the farmers did not take measures to control flies. Overall, the study mainly describes about the farm production, management and welfare issues on the selected farm. The results of the study will help plan for further improvement of the dairy industry.

Keywords: management, welfare assessment, dairy cattle, biosecurity & hygiene, injury.

CHAPTER I

INTRODUCTION

Bangladesh is a country that is heavily reliant on agriculture. The majority of the population lives in rural areas. Livestock is an essential component of the rural economy and the livelihood of the farmers. The production, processing, and marketing sectors of the dairy farming also provide significant employment (Michal, 1991). However, dairy cows in Bangladesh have been used as dual-purpose animals. The main goal is to use livestock to grow crops, and the second goal is to get milk for the family and sell it for cash. Here, milk production is considered a by-product. However, milk is recognized worldwide as an ideal and complete food for human health. There is wide consensus that milk should be prioritized in the diet and its demand elasticity is much higher than that of other foods (Jabbar & Raha, 1984).

The nation has subtropical monsoon weather, and 84.4% of its population reside in remote areas (Shamsuddoha, 2000). In Bangladesh, there are about 24.7 million cattle, 1.5 million buffaloes, 3.75 million sheep, and 26.77 million goats (DLS, 2022). Most of the purebred and crossbred cattle are of the Holstein Friesian, Sahiwal, and Sindhi breeds (Miazi et al., 2007). Cows are the dominating source of milk consumption in Bangladesh and about 95% of the total milk comes from cows, 1% from goats, and the remaining 4% from buffalo (Hossain et al., 2022).

The government has taken various measures to improve dairy cow breeds and milk production in the country. Due to a lack of pasture, dairy farmers in Bangladesh typically stall-fed their dairy cattle and buffaloes (Hamid et al., 2016). Traditionally, the main constraints to improving productivity and profitability are acute feed shortages, poor animal health care, weak marketing network, and lack of knowledge of milk processing. Due to the low productivity of dairy cows and the inadequate care and management, Bangladesh produces less milk on average (Anonymous, 2019).

The dairy industry is an important part of our national economy. The purpose of this study is to examine the present scenario of a dairy farm at Sitakunda upazila of Chattogram district of Bangladesh. In order to establish a future plan for dairy development in the country, it is essential to know details about the current activities. Thus, this article explores the current situation and future potentials of dairy farms in relation to existing farming patterns, existing housing, feeding, nutritional status, milking

practices, key constraints of dairy production, and strategic policies to accelerate dairy industries in Bangladesh.

Animal Welfare (AW) has been defined by the World Organization for Animal Health (OIE) as the broad term used to describe how an individual is coping with the conditions in which it lives. The welfare of dairy cows encompasses nowadays a major concern of public interest extending in most countries, due to its impact on the health and production of animals and, implicit, upon public health. The spectrum of an animal's welfare is from extremely poor to very good, and it is a condition of the animal, not a disease (Loberg & Lidfors, 2001; Broom, 2004).

AW is a relatively new topic that is just beginning to attract attention in Asia including Bangladesh. Animal welfare is recognized as an essential component of the social pillar of sustainability for the dairy industry. The animals must have easy access to drinking troughs and bowls, as well as complete freedom of movement, and their feed must be provided in accordance with their nutritional demands (Butler & Smith, 1989). In addition, the environment should maintain standards of hygiene and cleanliness in order to prevent the spread of harmful microorganisms and ensure thermal comfort conditions for animals with sufficient size in the rest area (Fonseca & Santos, 2000; Barkema et al., 1998).

Farmers, veterinarians and agricultural experts, and researchers have concentrated especially on lameness and mastitis in dairy cattle (Whay et al., 2003; Green et al., 2007). However, despite the vast quantity of scientific information on (possible) risk factors, the implementation in terms of improvements to farm management and housing circumstances still seems insufficient (Valeeva et al., 2007; Whay & Main, 2010).

In Bangladesh, dairy cows in various areas are subjected to production systems that are not friendly to the welfare status of dairy animals. Hence, it is needed to assess the welfare status of dairy cows. For this study, we measured several animal-based indicators to assess dairy cow welfare at the farm level.

Objectives of the study:

- To examine the present status of a dairy farm in order to establish future plan for the dairy development in the country.
- To explore performance efficiency, as well as dairy cow welfare issues.

CHAPTER II

MATERIALS AND METHODS

2.1 Study Area Selection

The dairy farms (Red dots in Figure 1) were selected at Sitakunda upazila of Chattogram district of Bangladesh to complete the study.

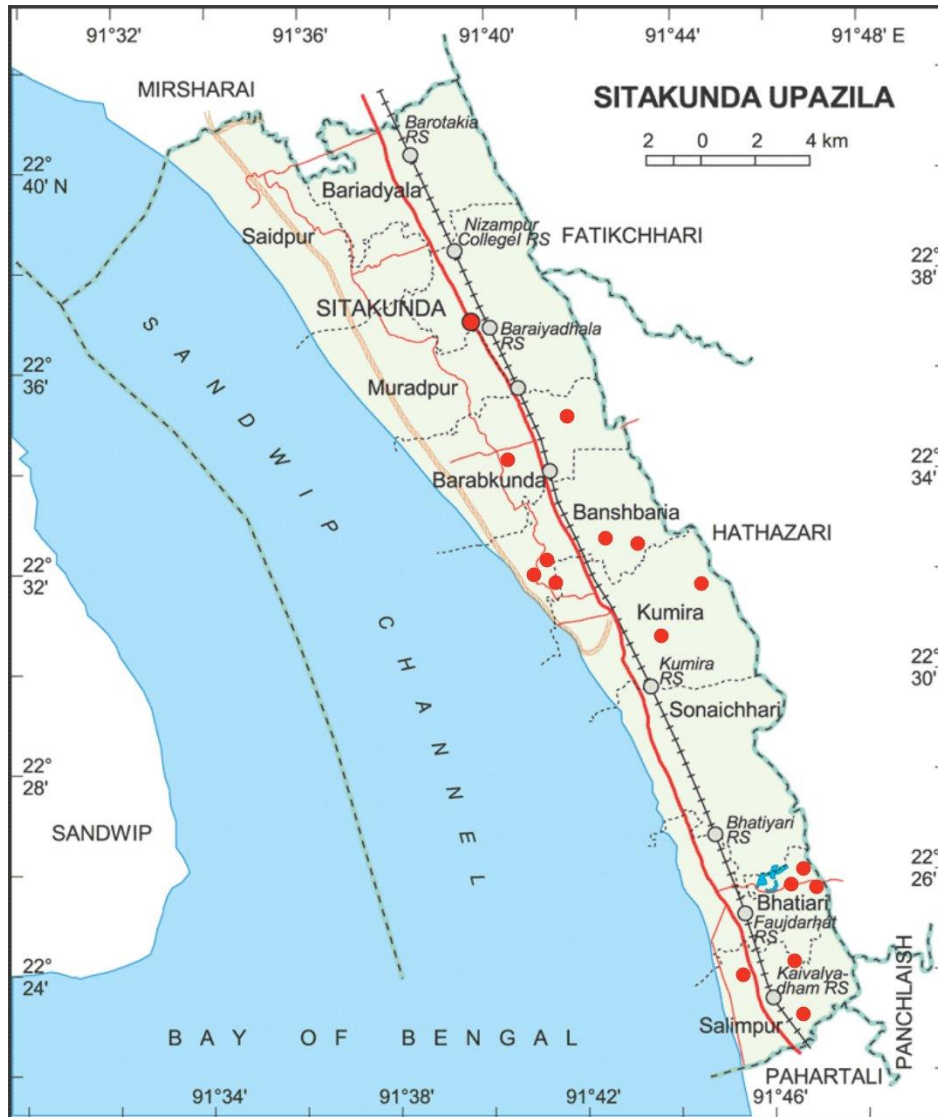


Figure 1: Map of the Study Area (Sitakunda, Chattogram, Bangladesh)

2.2 Sample size

A total of 16 dairy farms were selected randomly from Sitakunda upazila of Chattogram district due to a short study period where each dairy farm has at least 5 dairy cows.

2.3 Data Collection Period

The present study was conducted using an appropriate pre-designed questionnaire during the period from 31st January 2022 to 12th May 2022.

2.4 Data Collection

Face-to-face interviews with the farmers were carried out using a questionnaire with multiple-choice and semi-closed questions to collect animal-related indicators relevant to production and animal welfare. The first part of the interview covered data on:

- Personal Information of the farmers
- Number of dairy cattle in each category
- Housing, feeding, grazing system, deworming and vaccination schedule, Insemination method
- Milk production and milking practices
- Diseases and their management, biosecurity, and hygiene

The second part of the questionnaire referred to the welfare assessment parameters:

- Adequate feeds and water supply, quality of feeds and water, feeding practices, source of water
- Shed type, roof, floor, condition of the floor, bedding material, availability of electric fan, sufficient space in shed to move around freely and lie down
- Physical injury, disease conditions, ectoparasite infestation, veterinary support
- Grazing practices, animal movement control
- Behavior with animals and handling, Safe from predators, disturbances by flies

2.5 Statistical Analysis

After data collection, the questionnaires were checked for completeness, cleaned, organized, coded, and then entered into MS-Excel 2007 and STATA (Stata version-16, Stata Statistical Software) for analysis.

PHOTO GALLERY

Data Collection



Fig 2.1: Data Collection at Chowdhury Agro Farms



Fig 2.2: Data Collection at N&A Agro Farms



Fig 2.3: Data Collection at Ambia Agro Farm



Fig 2.4: Data Collection at Yeasin Dairy Farm



Fig 2.5: Using Footbath at Pacific Dairy Farm



Fig 2.6: Physical Injury Check at Furkan Dairy

PHOTO GALLERY

Physical Injury



Fig 3.1: Skin Abrasion



Fig 3.2: Cut mark



Fig 3.3: Wound



Fig 3.4: Skin abrasion



Fig 3.5: Cut mark



Fig 3.6: Cut mark



Fig 3.7: Skin Abrasion



Fig 3.8: Skin abrasion and Cut mark

CHAPTER III

RESULTS

This section reports the current status and animal welfare issues of dairy farm at Sitakunda upazila of Chattogram district. There were 16 dairy farms under observation.

3.1 Demographic and Socio-economic Status of the Respondents

In this section discusses the farmer's information such as gender, age, educational status. There were 16 dairy farms under observation. Table-1 was showed that male farmers (93.75%) owned a higher percentage of dairy farms than female farmers. According to current study, 19% of the farmer had less than or equivalent to primary level education, 25% of farmers had SSC, and the remaining 56.25% of farmers had higher education levels (Table-1).

Table 1: Socio-economic characteristics of dairy farm owners

Variable	Category	Frequency	Percentage (%)
Gender	Female	1	6.25
	Male	15	93.75
Age	30-45	11	68.75
	46-60	4	25.00
	61-75	1	6.25
Education	Graduate	9	56.25
	SSC	4	25.00
	Primary	3	18.75

3.2 Farm Size

Current study distributed dairy farms based on the number of animals. Small farms include less than or equal to 25 animals at a form and make 50% of the study. Medium farms have number of animals between 26 and 50 that makes 31.25% of the study. The remaining large farms about 18.75% and it ranges from 50 animals and above.

Table 2: Number of animals

Variable	Category	Frequency	Percentage (%)
Total population	Small (<25)	8	50
	Medium (26-50)	5	31.25
	Large (>50)	3	18.75

3.3 Farm Management

Table 3 displays the management practices of dairy farms. In this study, housing system 62.5% of dairy farms were intensive and the remaining 37.5% were semi-intensive. In this study, 18.75%, 37.50%, 18.75% of farms were having isolation shed, maternity box, quarantine shed respectively. The majority of the farmers (50%) treat their animals by quack. Cows were inseminated 43.75% by artificially, 18.75% naturally, 37.5% by both natural and artificial means.

Table 3: Dairy farm structure and its management

Variable	Category	Frequency	Percentage (%)
Housing system	Intensive	10	62.50
	Semi-intensive	6	37.50
Isolation shed	No	13	81.25
	Yes	3	18.75
Maternity box	No	10	62.50
	Yes	6	37.50
Quarantine shed	No	13	81.25
	Yes	3	18.75
Grazing	No	10	62.50
	Yes	6	37.50
Vaccine name	FMD	15	93.75
	FMD+BQ	1	6.25
Abortion	No	13	81.25
	Yes	3	18.75
Death	No	8	50.00
	Yes	8	50.00
Treatment provider	Private vet	7	43.75
	Quack	8	50.00
	UVH	1	6.25
Methods of insemination	AI	7	43.75
	Natural	3	18.75
	Natural +AI	6	37.50
Service per conception	1.5	4	25.00
	1.7	5	31.25
	2	7	43.75

3.4 Milk Production and Milking Practice

Table 4 displays the milk production and milking practices. About 56.25% farmers were milking their cows two times per day. In this study only 12.50% farmers were milking their cows by machine.

Table 4: Milking practice

Variable	Category	Frequency	Percentage (%)
Milking frequency/day	Two times	9	56.25
	Once	7	43.75
Milking practices	Hand	14	87.50
	Machine	2	12.50
Milk price/liter	60	1	6.25
	65	5	31.25
	70	8	50.00
	75	1	6.25
	80	1	6.25

Figure 4 shows the majority of farms about 50% sold 70 taka per liter of milk and 31.25% were sold 60 taka per liter of milk.

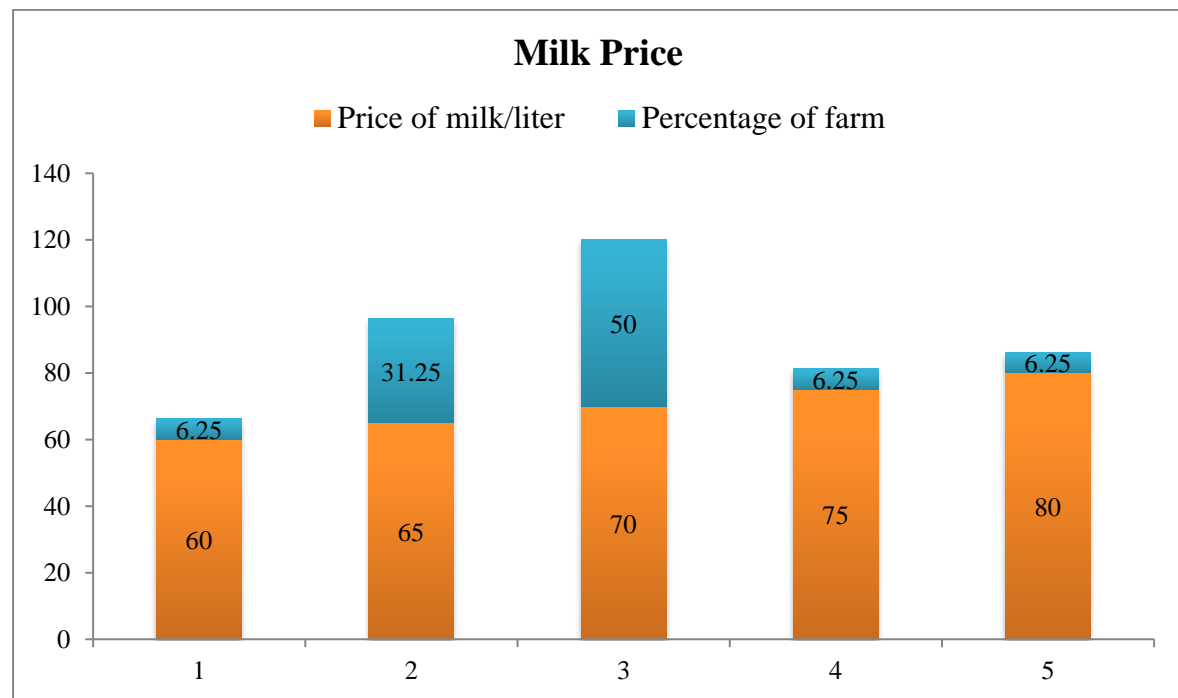


Figure 4: Graphical representation of milk price/liter

3.5 Biosecurity and Hygiene Information

Footbath: Figure 5 shows that only 6% of farms were using footbath.

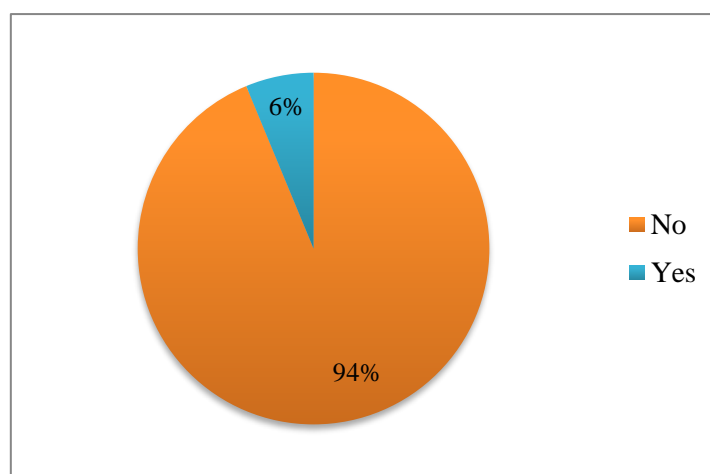


Figure 5: Percentage of farms using footbath

Table 5 displays the biosecurity and hygiene measures of dairy farms. In this study, about 81.23% of farmers were quarantine their newly purchased animals; only 25% of farmers isolated their sick animals. Only 6.25% of farmers produced bio-gas from manure. About 37.50% of farmers were cleaning and disinfected their farms regularly. About 56.25% of farmers did not take measures to control flies.

Table 5: Biosecurity and hygiene

Variable	Category	Frequency	Percentage (%)
Quarantine	No	13	81.25
	Yes	3	18.75
Isolation	No	12	75.00
	Yes	4	25.00
Restriction for common peoples	No	9	56.25
	Yes	7	43.75
Regular cleaning and disinfection	No	6	37.50
	Yes	10	62.50
Drainage	Good	10	62.50
	Poor	6	37.50
Manure management	Bio-gas	1	6.25
	Drain out	2	12.50
	Fertilizer	13	81.25
Farm boundary	No	9	56.25
	Yes	7	43.75
Fly, Pest, Rodents control	Chemical	8	50
	No	8	50

3.6 Record Keeping

Figure 6 shows the percentages of farms that keeping records. About 56% farmers reported that they keep regular farm records; while the remaining 44% farmers are not keeping any farm records.

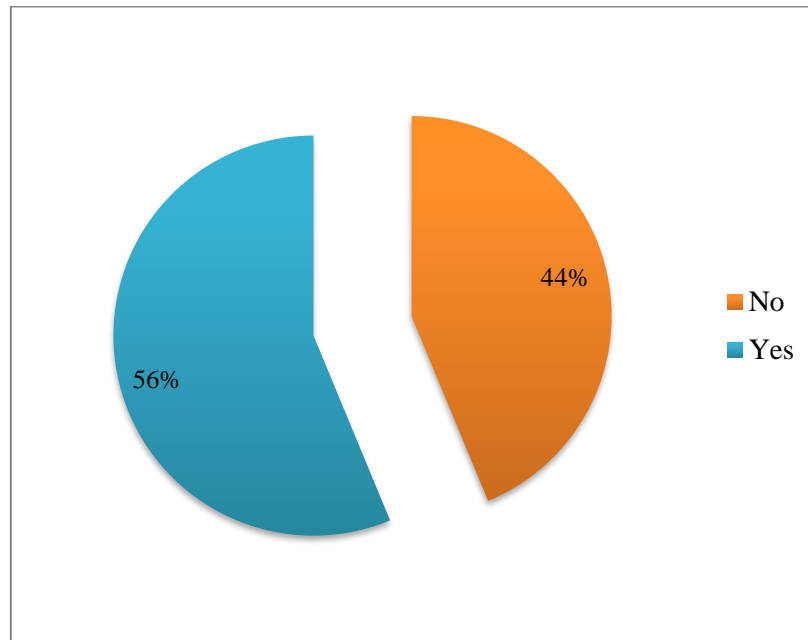


Figure 6: Percentage of farms keeping records

3.7 Animal Welfare Issues

Table 6 displays that 50% farmers provide adequate feed and water to their animal. Only 12.50% farmers followed ration for feed their cows.

Table 6: Freedom from hunger and thirst

Variable	Category	Frequency	Percentage (%)
Adequate feed and water supply	No	8	50
	Yes	8	50
Feed quality	Good	13	81.25
	Poor	3	18.75
Water source	Motor	10	62.50
	Tube well	6	37.50
Feeding practices	Assumption	13	81.25
	Assumption + Ration	1	6.25
	Ration	2	12.50

Table 7 displays that 43.75% farms roof was made with GI sheet. About 62.50% farms were using concrete floor. There were only 56.26% and 6.25% farms using rubber mat and sand respectively. About 81,25% farms were providing electric fan to their animals.

Table 7: Freedom from discomfort

Variable	Category	Frequency	Percentage (%)
Roof	GI Sheet	7	43.75
	RCC	9	56.25
Floor	Brick	6	37.50
	Concrete	10	62.50
Bedding	No	6	37.50
	Rubber mat	9	56.25
	Sand	1	6.25
Electric fan	No	3	18.75
	Yes	13	81.25

Table 8 shows the majority of injuries in cows were skin abrasion 56.25%, and other injuries 18.75%, 12.50%, and 12.50% were wound, cut marks, and abrasion on muzzle respectively.

Table 8: Freedom from pain, injury and diseases

Variable	Category	Frequency	Percentage (%)
Injury name	Skin Abrasion	9	56.25
	Wound	3	18.75
	Cut mark	2	12.50
	Abrasion on muzzle	2	12.50
Disease	Anestrous	2	12.50
	Cachectic	1	6.25
	LSD	3	8.75
	Mastitis	4	37.50
	No	6	25.00
Ectoparasite	Fly	10	56.25
	No	6	37.50

Table 9 displays about 62.50% farmers did not allow grazing of their animals. About 93.75% farmers tied animal with neck rope to control movement. 81.25% farmers followed two to four months of calves weaning age.

Table 9: Freedom to express natural behavior

Variable	Category	Frequency	Percentage (%)
Grazing practice	No	10	62.50
	Yes	6	37.50
Animal movement control	Free	1	6.25
	Neck rope	15	93.75
Calves weaning age	Immediate	2	12.50
	2 to 4 months	13	81.25
	4 to 6 months	1	6.25
Vices	Self + Wall licking	1	6.25
	Tongue rolling	3	18.75
	Wall licking	2	12.50
	No	10	62.50

Table 10 shows 81.25% farmers behavior with animals was good. About 50% farms were having huge flies' disturbances.

Table 10: Freedom from fear and distress

Variable	Category	Frequency	Percentage (%)
Behavior with animals	Good	13	81.25
	Shouting	1	6.25
	Slapping	2	12.50
Flies' disturbances	Few	4	25
	Huge	8	50
	Little	4	25

CHAPTER IV

DISCUSSION

Dairy farming is an important and potential agricultural sector in Bangladesh. Dairy farming is regarded as an important tool for improving rural life. Therefore, improving the dairy farming system will significantly improve economic development in Bangladesh. There is a growing need for daily and up-to-date knowledge, especially on economic and welfare indicators, to be more competitive and profitable for the dairy industry.

In this study, more than 55% of farmers' educational level was honors and which is greater and indicates a positive outlook for the business in the next years as well as for educated people interested in joining the field. According to research undertaken in India, dairy farmers' educational levels have improved in recent years. It has been demonstrated that a farmer's level of education affects farm output because educated individuals readily adapt new procedures and management styles (Rahman et al., 2015). The same findings were also shown by a study conducted in the United States of America, which claimed that education level has an impact on farm income (Lockheed et al., 1980).

Current study distributed dairy farms based on the number of animals. Small farms include less than or equal to 25 animals at a farm and make 50% of the study. Medium farms have a number of animals between 26 and 50 which makes up 31.25% of the study. The remaining large farms are about 18.75% and it ranges from 50 animals and above.

Better management techniques, the use of latest technology, and the implementation of recent trends all serve to increase farm production, but farm size may have a significant impact on income (Kim et al., 2005).

In this study, farms were selected at Sitakunda upazila under Chattogram district in those areas should be selected where a large number of animals present to know whether the people should maintain or not maintain animal welfare on their farm. The 16 farms were a small sample size and do not represent the welfare condition of cows throughout Bangladesh. In this study anoestrous was found in two farms. Anoestrus is frequently observed in high-producing cows whose body condition score drops by 0.5 to 1.0 during lactation (Studer, 1998). In this study cachectic animals were found in one farm. Body condition affects the productivity, reproduction, health, and longevity of dairy cows. The genetic performance of reproduction during lactation was more positively correlated with

higher body condition scores (Dechow et al., 2001). Higher body condition scores during lactation, both genetically and phenotypically, were moderately inversely associated with milk production. Good health is considered a prerequisite for welfare. In the study, the percentage of ectoparasite infestation is about (56.25%). The behavior with animals was good about 81.25% which indicates the farmers know the effect of fear and distress in their production and properly maintain their farm management. A significant percentage of dairy cattle have physical injuries, this can be a sign of poor welfare. Physical injury may result from a variety of conditions, including animal movement control, flooring and related time spent standing, etc. (Galindo et al., 2000; Winckler & Willen, 2001).

In the current study, 62.50% of farmers did not allow grazing of their animals which indicates poor welfare. The percentage level of animals tied with neck ropes is about 93.75%. In grazing systems, animals have the opportunity to exhibit their natural behavior, are generally not limited in space, and are able to move around and thus exercise. Among grazing livestock, prevalence of lameness is typically low and locomotive ability is greater (Charlton et al., 2017; Olmos et al., 2009). Despite the fact that the possibility of lameness increases with distance walked and if cow pathways are not maintained (Stafford et al., 2008). In terms of a decreased occurrence of mastitis, access to pasture can also be advantageous (Washburn et al., 2002). In general, cows on pasture have more area and can avoid laying in dirty locations (Charlton et al., 2017). In this study rub marks (thigh, hock joint, knee joint) are most common in all farms. Cows were several times lying down on the floor which causes injury to the body and the body part showed dirtiness. Most of the farmers used concrete floors about 62.50% of their farms which cause injury to the hock joint, knee region, and teat and few people used bedding materials over the concrete floor where the injury level was lower than a concrete floor. It was stated that an ideal bedding material should allow animals to display natural behavior and needs to absorb moisture, dry readily (Dunlop et al., 2015). In various investigations, harder surfaces were observed to have more hock lesions and swellings than softer surfaces (Weary & Tazskun, 2000; Wechsler et al., 2000; Vokey et al., 2001), and hard lying surfaces can cause continual pressure and friction that can cause hock lesions to worsen and cause more serious injuries (Westerath et al., 2007).

CHAPTER V

CONCLUSION

This paper aims to discuss the dairy development issues, and the present situation at Sitakunda upazila, Chattogram. Dairy farming knowledge such as breeding, feeding, housing, biosecurity, prevention, and control of diseases is not satisfactory for the farmers. Experts from the government, research institutes, universities, NGOs, and another relevant sectors should work in a collaborative manner to provide short-term training for the owners of the dairy farms. The present study is a first step toward finding a tool for veterinarians and farmers to assess the welfare of dairy cows. It is noted from our study that most of the farmers were unaware of the welfare issues associated with dairy production. It seems that injuries in different body parts, animal movement control, and inappropriate bedding materials were the major welfare problem within the studied parameters. But this work was a preliminary study, so it is obvious that comprehensive research is needed to further develop prototype protocols for different production and livestock systems across the country. Therefore, further research regarding planning strategies should focus on welfare aspects in addition to the most important production diseases.

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QUESTIONNAIRE

Objectives:

- To know the current status of a dairy farm
- To know the animal welfare issues

Date of Interview: (DD/MM/YY):/...../2022

Farm's name:

Location:

A) Farmer's Information:

1. Farmer's name:
2. Contact no:
3. Gender of the farmer: Male Female
4. Age of the farmer:
5. Educational background:
6. When did you start dairy farming?..... years

B) Category of animals:

Types of Animals	Breed Name	Number of Animals
1. Lactating (milking) cows		
2. Dry cows (pregnant)		
3. Dry cows (non-pregnant)		
4. Heifers (more than 1 year old)		
5. Female calves (less than 1 year old)		
6. Male calves (less than 1 year old)		
7. Bull (more than 2 years old)		
Total livestock population		

C) Dairy farm structure:

1. Total area of the farm:
2. Housing System: Intensive Semi-intensive Loose Extensive
3. Shed number:
4. Shed types:
 - a) Floor: Sand Concrete Brick Others.....
 - b) Wall: Brick GI Sheet Bamboo Wood Others.....
 - c) Roof: Straw RCC GI Sheet Wood Others.....
5. Isolation shed: Yes..... No
6. Maternity box: Yes..... No
7. Quarantine shed: Yes..... No

D) Feeding:

1. Feeding practices: Cut & carry Grazing Both
2. If practice grazing,
Which type of grazing do you practice? Tethering Free-range Both
3. Types and amounts of feeds supply daily with their price:

Roughages			Concentrates		
Name	Amounts	Price	Name	Amounts	Price

4. Do you cultivate grass on the farm land? Yes..... No
5. Do you make feed/fodder conservation? Yes..... No
6. Frequency and amount of water supply per day.....liters

E) Milk production and milking practice:

1. How many times a day do you milk your cows? Once 2 times 3 times
2. Milking practices: Hand milking Machine milking Both
3. Do you clean hands before milking? Yes No
4. Do you clean milking utensils before milking? Yes No
5. Average milk per day liters, from number of milking cows.
6. Price of milk:taka/liter

E) Animal health service:

1. Do you vaccinate your animals? Yes No
2. If yes, against which disease?

Vaccine	Trade name with Company	Vaccination Schedule
<input type="checkbox"/> FMD		
<input type="checkbox"/> Anthrax		
<input type="checkbox"/> BQ		
<input type="checkbox"/> HS		
<input type="checkbox"/> Rabies		
<input type="checkbox"/> Others.....		

3. Do you deworm your animals? Yes.....(Schedule) No
4. Do you practice Dry cow therapy? Yes No

F) Diseases and its management:

1. Which diseases are commonly occurred?
2. Total number of abortion cases in last year:
3. Which diseases are commonly occurred in calves?
4. Total number of death cases in last year:
5. Who provides treatment to your animal?
UVH Private Vet Self Quack Others.....

G) Reproduction and breeding service:

1. Methods of heat detection:
Visual signs Rectal palpation Electrical Teaser bull Others
2. Methods of insemination:
Natural AI Both
3. How many times of insemination per heat? One Two
4. Service per conception:

H) Biosecurity and hygiene:

1. Availability of footbath: Yes No
2. Quarantine time of new animals: Yes.....days No
3. Isolation practices of diseased animals: Yes No
4. Restriction of common peoples: Yes No
5. Traffic control: Yes No
6. Regular cleaning and disinfecting of farm & utensils: Yes No
7. Drainage system: Good Poor
8. Manure management:
9. Farm boundary: Yes No
10. Fly, Pest, Rodents control: Chemical Physical (Net) Others.....

I) Recurrent cost:

1. Feed cost:taka/month
2. Electricity bill:taka/month
3. Labor cost:taka/month
4. Medication cost:taka/month
5. Vaccination cost:taka/month
6. AI cost:taka/month
7. Veterinarian service cost:taka/month

J) Record keeping:

1. Do you practice record keeping on your farm? Yes No

Welfare Issues

A) Freedom from hunger and thirst:

1. Adequate feeds and water supply: Yes No
2. Quality of feeds: Good Poor Spoiled Mouldy
3. Quality of water: Fresh & Clean Dirty and unhygienic
4. Source of water supply: Tubewell Motor Pond Others.....
5. Feeding practices: Assumption Ration Balanced Ration Others.....
6. Amount of milk feeding to the calves per day:
7. Feeding of milk replacer to the calves: Yes No

B) Freedom from discomfort:

1. Shed:
 - a) Direction of the shed: East-West North-South
 - b) Height of the shed:
 - d) Roof: Straw RCC GI Sheet Wood Others.....
 - c) Floor: Sand Concrete Brick Others.....
 - d) Condition of the floor: Slippery Non-slippery
 - e) Bedding material: Sand Rubber mat Straw Others.....
 - f) Natural air circulation: Yes No
 - g) Availability of electric fan: Yes No
2. Housing system: Intensive Semi-intensive Loose Extensive
3. Sufficient space in shed to move around freely: Yes No
4. Sufficient space in shed to lie down: Yes No

C) Freedom from pain, injury and diseases:

1. Any physical injury: Yes.....num No
2. If yes, type and location of injury:
3. Any disease conditions:
4. Any ectoparasitic infestation:
5. Veterinary support: Yes No

D) Freedom to express natural behavior:

1. Grazing practices: Yes No
2. Animal movement control: Free Tie with neck chain/rope
3. Weaning age of calves:
4. Any vices: Tongue rolling Self suckling Eating soil Wall licking

E) Freedom from fear and distress:

1. Behavior with animals: Good Shouting Beating Slapping Others....
2. Handling of animals: Good Rough
3. Fighting with other animals: Yes No
4. Safe from predators: Yes No
5. Disturbances by flies: Yes No

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The Author

BIOGRAPHY

Bibi Amena, daughter of **Md. Anayet Ullah** and **Fatema Tuj Zohara**, was born on 28 March, 1998 at Chattogram district. She passed her Secondary School Certificate Examination from Sitakunda Girls' High School, Chattogram in 2014 (GPA 5.00). Then she passed her Higher Secondary School certificate examination from Sitakunda Govt. Mohila College, Chattogram in 2016 (GPA 5.00). Now she is completing her one-year long internship program for fulfilling the requirement of Doctor of Veterinary Medicine (DVM) degree in Chattogram Veterinary and Animal Sciences University, Chattogram, Bangladesh. During her internship period she received her clinical training on Veterinary Medicine from CVASU Lab Rotation, Shahedul Alam Quadery Teaching Veterinary Hospital (SAQTVH), PRTC, Teaching & Training Pet Hospital and Research Center (TTPHRC), UVH Sitakunda upazila, ACDI/VOCA, RV & F Depot, Chattogram Military Farm, and managemental training from Chattogram based farm etc.

Her primary research interest is in zoonoses and poultry diseases. But she feels much interest to work on emerging infectious diseases of different animals.