

Investigation into Calf Management Systems in Some Selected Dairy Farms of Dagonbhuiyan, Feni District in Bangladesh



Production Report Submitted

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ABSTRACT

A cross sectional study was carried out on the extant knowledge of dairy farmers on calf management in Daganbhuiyan Upazila, Feni. There was only one study conducted on dairy farms in three unions and one municipal region, using a set of questions on questionnaire. The farms were randomly selected and each farm was visited once and a face-to-face interview was conducted between March and May 2024. While 10 percent of these farmers had between 21 and 50 cow, most of them were very small-scale farmers, 50 percent had between 4 and 7 cows. Of the total farms observed 60% of the farms were facing south and 30% farms were facing north. Further, 50 % farmers had cemented floor and 55 % used rubber pad bedding but most of them did not have proper housing for calves. Concerning source of colostrum 60% of farmers fed their calves with colostrum up to 3 days after birth, 55% fed their calves 1 litre or less per day. In addition, 55% of the women breastfed their calves to 10 months while 60 percent introduced green grass and grain feed at five weeks. 95% born with a cut and the clean umbilical cord disinfected soon after delivery. Mean age of de-worming was at 4-5 weeks of age and 65% of the farms of vaccinating for various diseases; 60% of farms reported cases of calf scour during the study.

Keywords: Calf management, Questionnaire, Colostrum, Calf Scour

CHAPTER 1: INTRODUCTION

Livestock farming is one of the biggest sectors of agriculture which has a large impact on the health of the nation and the economy of the whole country. They not only build up a source of income for so many families but also give a boost as to nutrients. In Bangladesh livestock plays a significant role in farming system and provides significant streamline to the country economy. This sector offers full time employment to 20% of the population and part time employment to 50% of the population.

But there are some significant issues in Bangladesh dairy industry, the most important ones are, quality of milk & dairy products. About 60-70% of families are involved in milk production whether as the main economic activity or supplementary. Most of these families are actually non-tenants or marginal tenants or landless workers who normally have at most 2-3 animals. However, they are normally characterized by poor physical and organizational facilities, structures and services marked accesses.

It is normal for most of the rural households to begin with calves because of constraint of finance hence these young animals are a key asset for them. It is very important to control and care for young ones since the future of the small calves is significant to the future of the dairy herd. Though, several technical, institutional, as well as social constraints negatively affect the growth of the livestock sector in the mentioned country.

High calf mortality rates may be occasioned by poor welfare conditions obtained on the farms. A lot of high producing exotic breeds may not survive diseases and conditions around their regions. A statement that will support the use of appropriate management practices even further. Moreover, feeding high quality colostrum is important in order to minimize calves' death rate and, thus, increase immunological capabilities of their organisms. It also ensures generation of milk because it stimulates the letdown reflex of the milch cow apart from being used in decreasing incidences of mastitis which in any case increases milk production. Therefore, sustainability in cattle herds is highly determined by successful rearing of healthy calves. In this report I will discuss the benefit & drawback of calf rearing to our area and what measures that could be taken so as to put into effect those challenges.

CHAPTER 2: MATERIALS & METHODS

Study Area and Period

Information for this paper was gathered between March and May of the year 2024. The study was carried out in one municipal area, three unions in the Daganbhuiyan Upazila of Feni district. Some of these areas were selected as they are representative of large scale, medium scale, small scale and household scale dairy farms.

Sampling Method and Setting Population

For the purpose of the study, farm data across all types of farms in Daganbhuiyan Upazila was collected from three selected unions, namely Yakubpur, Rajapur and Shindurpur and one municipal area Daganbhuiyan. Samples were collected from 20 farms of which 5 farms were selected from each of the four areas. Altogether there were 264 cows in those farms but the final study sample consisted of 80 calves. There was no access to biological specimens from the subjects.

Study design and data collection tool

The survey was cross sectional, which conducted one visit to each farm, during the survey period. A structured questionnaire was used in the study and items were crafted following a consensus procedure.

Statistical Analysis

Survey data was recorded in an excel spreadsheet format using Microsoft Office Excel 2007. Frequency distributions of data were compared between various study groups. Analysis and comparison of the result between these groups were done using Intercooled STATA 9.2 for Windows.

Farm Visit and Data Collection



Fig: Data Collection from small farm



Fig: Large scale farm visit



Fig: Calf housing



Fig: Housing system observation



Fig: Heifer calf

CHAPTER 3: RESULTS

Table 01: Farm demographics of 20 dairy farms surveyed during March, 2024 to May, 2022 at Daganbhuiyan, Feni.

Variable	Level	Frequency	Percent
Farmer's education	Eight	03	15
	Secondary School certificate	07	35
	Higher secondary certificate	04	20
	BA/BSc	05	25
	MA	03	05
Herd Size	3-7	06	30
	8-10	03	15
	11-15	05	25
	16-20	04	20
	21-50	02	10
No. of calf	1-3	09	45
	4-7	10	50
	8-15	01	05
Experience of farming (Year)	1-3	07	35
	4-7	09	45
	8-15	04	20

FARM DEMOGRAPHICS

The demographic of the farms is provided in table 1 below. The text includes an elaboration of only the results deemed important by the researcher. Of the 20 farm owners interviewed, 7 (0.35) had attained secondary level education, 5 (0.25) had attained university level education. Further, there were 30 percent of the farms or 6 farms, with 3 to 7 cows, while only 10 percent or 2 farms, harbored 21 to 50 cows. About two farm sizes had a production of 4-7 calves and 45% of the farmers had 4-7 years of experience in farming.

Table 02: Housing system demographics of 20 dairy farms surveyed during March, 2024 to May, 2024 at Daganbhuiyan, Feni.

Variable	Level	Frequency	Percent
Placement	South facing	12	60
	North facing	06	30
	West facing	02	10
Floor type	Brick	08	40
	Cemented	10	50
	Earthen	02	10
Bedding	Rubber pad	11	55
	Straw	09	45
Separate shed for calf	Yes	09	45
	No	11	55

HOUSING SYSTEM DEMOGRAPHY

Housing system demographics are shown in Table 2. 60% (n=12) of total farms were south facing. 30% (n=6) are north facing. 50% (n=10) of the total 20 farms were cemented floor and 40% (n=08)

were made of brick. 55% (n=11) of the total 20 farms used rubber pad as bedding and 45% (n=09) used straw. Most of the farms (55%) had not any separate shed for the calves.

Table 03: Feeding system demographics of 20 dairy farms surveyed during March, 2024 to May, 2024 at Daganbhuiyan, Feni.

Variable	Level	Frequency	Percent
Duration of colostrum feeding (Day)	Two	08	40
	Three	12	60
Amount of colostrum feeding (Liter)	Less than or equal one	11	55
	Greater than one	09	45
Duration of milk feeding (Month)	Eight	04	20
	Nine	05	25
	Ten	11	55
Amount of milk feeding per day (Liter)	Less than or equal one	14	70
	Greater than one	06	30
Feeding style	Self	20	100
	Hand	00	00
Starting time of grass & conc. Feeding (Week)	Four	3	15
	Five	12	60
	Six	5	25

FEEDING SYSTEM DEMOGRAPHY

The demographic of the farms are provided in table 1 below. The text includes an elaboration of only the results deemed important by the researcher. Of the 20 farm owners interviewed, 7 (0.35) had attained secondary level education, 5 (0.25) had attained university level education. Further, there were 30 percent of the farms or 6 farms, with 3 to 7 cows, while only 10 percent or 2 farms, harbored 21 to 50 cows. About two farm size had a production of 4-7 calves and 45% of the farmers had 4-7 years of experience in farming.

Table 04: Disease demographics of 20 dairy farms surveyed during March, 2024 to May, 2024 at Daganbhuiyan, Feni.

Variable	Level	Frequency	Percent
Disinfection of navel cord	Yes	19	95
	No	01	05
Time of deworming (Week)	4-5	12	60
	6-7	08	40
Vaccination	Yes	13	65
	No	07	35
History of calf scour	Yes	12	60
	No	08	40

DISEASE DEMOGRAPHY:

Disease Demographics are presented in the Table 04. Almost all farms (95%) treated the umbilical cord immediately after the birth of the calves. The first deworming took place at 4- 5 weeks of age; the 60% (12 farms) implemented deworming at this age. Further, 65 percent (%) of the farms vaccinated their calves and 60 percent (%) of the farms reported having history of calf scour during this study.

CHAPTER 4: DISCUSSION

The current survey sought to establish the kinds of calf rearing systems in different dairy farms in Daganbhuiyan Upazila, Feni. It discussed calf management, feeding, housing, diseases, vaccination and farmers' education level and experience in farming.

Surprisingly, this study showed that majority of farms in the area include: 3-7 cow farms and only 10% of the farms possess between 21-50 cows. On the other hand, the survey conducted in Chattogram area revealed that 60% farms possessed 5 to 20 cows and 26% farms possessed 21 to 50 cows (Sharmin Chowdhury et al., 2017). 45% of the farms reported having between 4-7 calves. The survey also showed farmers' education level and experience played a critical in farm management as 35 percent of the farmers saw their education up to secondary school level and 25 percent farmers had only a B.A /B.Sc. Majority of the farmers had 4-7 years' experience and this form 45 % of the total.

In the study it was reported that 60% of the farms were aligned towards south 30% towards north, the details of position depending on the wind direction. Flooring was the most common was at 40% bricked and 50% cement while in the Chittagong region, farm concretion was at 47% and bricked at 25% (Sharmin Chowdhury et al., 2017).

Majority of the farmers (60%) offered colostrum to their calves for 3 days and 55% (11 farmers) used one liter or less per day. Still, 55% gave milk to their calves to up to 10 months, and 30% did not implement hand feeding system. At five weeks of age, many farmers started feeding grass and concentrate mainly broken maize and rice bran.

A majority of the farms undertook immunization against diseases such as FMD, hemorrhagic septicemia and black quarter. Sixty percent said they dewormed the calves for the first time at between 4-5 weeks of age, 60% had observed the calves suffering from calf scour at the time of the study.

In conclusion it can be said that despite the fact that the majority of the farms do actually implement efficient management, there is unfortunately considerable scope for further development in this respect. Proper training through the Upazila Livestock Office could mean fast development of these aspects.

CHAPTER 5: CONCLUSION

The present survey can contribute in providing some basic idea and information about the management practices, feeding, diseases and some other criteria of the different farms of Daganbhuiyan, Feni. They either do not know any proper farm management practices or do not practice them as they should. There were suggestions that there should be more offered dairy farm management and diseases management training programmes for the dairy farmers in the study areas and surrounding study areas.

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BIOGRAPHY

I am **Zahir Uddin Faisal**, son of **Mahabul Haque** and **Zannatul Ferdous**. I am from Daganbhuiyan, Feni. I passed secondary school certificate examination (S.S.C) in 2016 (G.P.A - 5.00) from BAF Shaheen School Chattogram and higher secondary certificate examination (H.S.C) in 2018 (G.P.A -4.33) from BAF Shaheen College Chattogram. I am a student of 24th batch and now an intern student under the Faculty of Veterinary Medicine in Chattogram Veterinary and Animal Sciences University, Khulshi, Chattogram. In the future I would like to work in the field of Medicine.