**ABSTRACT**

A survey was conducted to characterize calf management practices adopted by dairy farmers at Chhagalnaiya, Feni. A total of 20 dairy farms located in 3 different unions and 1 municipal area at Chhagalnaiya were surveyed. Calf management practices related data was collected through a standard questionnaire and all sampled farm were visited once and administered the questionnaire by ‘face to face’ method during the period February, 2022 to April, 2022. Only 10% of the farmers had 21-50 no. of cows and most of them were very small farmers. Among them 50% farmers had only 4-7 no. of cows. 60% of the farms were south facing and 30% of the farms were north facing. Among the farms, 50% had cemented floors and 55% had rubber pad bedding. Most of the farms had no separate house for calves. 60% of the farmers feed their calves colostrum up to 3 days after birth and 55% of them feed 1 liter or less than one liter of colostrum per day. 55% farmers breastfeed calves till 10 months of age. 60% of farmers start feeding calves green grass and grain feed from 5 weeks of age. 95% of farmers cut the umbilical cord and disinfect immediately after birth. The first deworming is given when the calf is 4-5 weeks of age. 65% of the farms were vaccinated against various diseases and 60% of the farms had a history of calf scour during the period of the study.

**Keywords:** Calf management, Questionnaire, Colostrum, Calf Scour

**CHAPTER 1: INTRODUCTION**

Livestock is one of the most potential sub-sectors of agriculture which plays an indispensable role in promoting human health and national economy of the country. Livestock not only assists to upgrade the financial conditions but also make a substantial contribution to human nutrition. However, livestock is an integral part of a farming system which has a better contribution to enhancing the economy of Bangladesh. The livestock sub-sector dispenses 20% and 50% of the total population as full time employment and part-time employment, respectively**7**. Dairy industry of Bangladesh is facing the challenge of ensuring the quality of milk and milk products due to traditional knowledge based livestock systems. Undoubtedly, 60-70% families in Bangladesh are engaged in milk production either as main or subsidiary occupation. Mostly they are landless laborers, small and marginal farmers keeping 2-3 animals under mixed farming system in rural areas and having inadequate facilities or infrastructure at their disposal and access to services and markets**8**. As the poor people of the village rear cows in our country, they have to start with calves initially due to lack of money. So calf is a very important resource for our country. Proper management and constant attention is required for calves, as they form the future dairy herd**10**. A bunch of commingled factors such as technical, institutional and social are limiting the development of the livestock sector in Bangladesh**7**. Farms with high calf mortality are regarded as of having poor welfare at the farm level**2**. High productive exotic breeds and their crosses normally do not have adequate resistance against the prevalent diseases. They do not thrive well in our environment**9**. Proper management and constant attention is required for calves, as they form the future dairy herd. Management and feeding of high-quality colostrum can lessen calf mortality and fortify immunity**1**.Calves represent the main source of replacement stock and are often needed to stimulate milk letdown in lactating cows**6, 3**. In addition, calf suckling reduces the incidence of mastitis and increase milk yield**5**. Given these the sustainability of a cattle herd therefore depends, among other things, on successful rearing of healthy calves**4**. So in this report I have tried to find out the advantages and disadvantages of calf rearing in our area and ways to overcome them.

**CHAPTER 2: MATERIALS & METHODS**

**Study area and period:**

Data collection for the present study was performed during February 2022 to April, 2022. One municipal, three unions under Chhagalnaiyaupazilla of Feni district were sorted out to conduct this present study. Areas were selected to cover almost all types of large, medium, small and household dairy farms.

**Sampling strategy and study population:**

To obtain a picture of all types of farms in the entire ChhagalnaiyaUpazilla for which I have taken data from three unions (Mohamaya, Radhanagar and Pathannagar) and one municipal (Chhagalnaiya) area. The farms included large, medium, small and household farms. I collected data from a total of 20 farms by visiting 5 farms from each area. There was total 264 no. of cows in that farms but I sorted out 80 calves as the study population at the end of the sampling. No biological samples from the study subjects were collected for this present study.

**Study design and data collection tool:**

The survey followed a cross sectional design. Each farm was visited once during the study period. A standard questionnaire was used as data collection tool for the present study. Questions to be incorporated in to the questionnaire were identified through a standard procedure.

**Statistical analysis:**

Survey data were entered in to an Excel spreadsheet (Microsoft Office Excel 2007). Data distributions were examined across study strata. Intercooled STATA 9.2 for windows (Stata Corp LP, College Station, Texas) was used to statistically compare results across study strata.

**CHAPTER 3: RESULTS**

**Table 01:** Farm demographics of 20 dairy farms surveyed during February, 2022 to April, 2022 at Chhagalnaiya, Feni.

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Level** | **Frequency** | **Percent** |
| **Farmers education** | **Eight** | **03** | **15** |
| **Secondary School certificate** | **07** | **35** |
| **Higher secondary certificate** | **04** | **20** |
| **BA/BSc** | **05** | **25** |
| **MA** | **01** | **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**

Farm demographics are shown in Table 1. Only remarkable findings are discussed in text. Among 20 farms, 7(35%) farm owners were educated up to secondary school certificate level, 5(25%) were completed graduation. 30%(n=6) of the sampled farms were raising 3-7 cows, only 10%(n=02) had a big herd size of21-50 cows. Most of the farms (50%) had 4 to 7 calves in their farm in the study area and most of the farmers (45%) had 4 to 7 year experience of farming.

**Table 02:**Housing system demographics of 20 dairy farms surveyed during February, 2022 to April, 2022 at Chhagalnaiya, 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 February, 2022 to April, 2022 at Chhagalnaiya, 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**

Feeding system demographics are shown in Table 03. Most of the farmers (60%) fed colostrum their calves for three days and 55% (n=11) fed less than or equal one liter of colostrum per day. 55% (n=11) farmers fed their calves milk for 10 months and most of the farmers (70%) fed less than or equal one liter of milk per day. All farms (100%) used self-feeding style. 60% (n=12) farms started grass and concentrate feeding at the age of five weeks.

**Table 04:** Disease demographics of 20 dairy farms surveyed during February, 2022 to April, 2022 at Chhagalnaiya, 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 shown in Table 04. Most of the farms (95%) disinfected navel cord immediately after birth of calves. 60% (n=12) farms performed 1st deworming at the age of 4 to 5 weeks. Most of the farms (65%) were vaccinated and there were (60%) history of calf scour at the time of data collection of this study.

**CHAPTER 4: DISCUSSION**

The present survey was conducted to know the calf rearing system of various dairy farms of Chhagalnaiyaupazilla of Feni at different levels of the survey. Through this survey, an attempt has been made to show how calves are reared, how calves are fed, calf housing system, various diseases of calves, vaccination or treatment of diseases, farm management has any relationship with farmer’s educational qualification and farming experience.

It was revealed from the present survey that majority of the farms in the study area are very small sized rearing only 3-7 cows and only 10% of farms have between 21-50 cows. But in Chittagong region 60% of the farms had 5-20 no. of cows, 26% of the farms had 21-50 no. of cows. (Sharmin Chowdhury et al. Survey of Calf Management and Hygiene Practices Adopted in Commercial Dairy Farms in Chittagong, Bangladesh. 20-01-2017). 50% of farms have between 4-7 no. of calves. Through this survey it has been found that educational qualification of farmers and their farming experience are two major factors of farm management. 35% farmers had educational qualification up to secondary school certificate and on the contrary only 25% had up to BA/BSc. Majority of the farmers had almost 4-7 years farming experience and that was 45%.

In the study, 60% of the farms were south facing and 30% was north facing and farmers mainly determine the placement by considering the wind direction. Floor types of the 40% of the farms were bricked and 50% were cemented. But in Chittagong region 47% of the farms were concreted and only 25% were bricked. (Sharmin Chowdhury et al. Survey of Calf Management and Hygiene Practices Adopted in Commercial Dairy Farms in Chittagong, Bangladesh. 20-01-2017).

Most of the farmers (60%) fed colostrum their calves for three days and 55% (n=11) fed less than or equal one liter of colostrum per day. 55% of the farmers fed milk to their calves up to 10 months. There was no hand feeding system. At the age of 5 weeks of calves maximum farmers started grass and concentrate feeding and as a concentrate they basically gave broken maize, rice bran etc.

Majority no. of farms was vaccinated against different diseases like FMD, Hemorrhagic septicemia, Black quarter etc. at the time of the study. At the age of 4-5 weeks 60% of the farmers had done their 1st deworming. At the time of the study, 60% of the farms had the story of calf scour.

From the above discussion it can be said that despite the rural setting, the management of several farms were up to the mark. Many farms have a lot of room for improvement. If proper training can be provided in the matters from the Upazilla Livestock Office, it is possible to improve very quickly in these areas.

**CHAPTER 5: CONCLUSION**

It can be concluded from the present survey that, it gives a baseline data and knowledge about management practices, feeding, disease conditions and some others criteria of different farms of Chhagalnaiya, Feni. Proper farm management practices are either unknown to farmers or are not implemented. More dairy farm management and diseases management training programmes should be offered to dairy farmers in the study areas and surroundings areas.

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**ACKNOWLEDGEMENT**

All the praises are due to the Almighty Allah, whose blessings have been enabled me to accomplish this work.

I express my wholehearted sense of gratification, a sincere appreciation to my respected teacher and supervisor **Mr. Goutam Kumar Debnath**, Professor, Department of Dairy and Poultry Science, Chattogram Veterinary and Animal Sciences University, whose ingenuous and scholastic advice, judicious recommendations, constructive criticism, continuous encouragement and uniting assistance have guided me from the beginning of inception of intern studies until to the completion of this report.

I would like to express my sincere gratitude and gratefulness to staffs of Upazilla Livestock Office and Veterinary Hospital, Chhagalnaiya.

**BIOGRAPHY**

I am **Naimul Hasan**, son of **Anwar Ullah** and **Selina Akter**. I am from Chhagalnaiya, Feni. I passed secondary school certificate examination (S.S.C) in 2013 (G.P.A -5.00) from Chhagalnaiya Govt. Pilot High School and higher secondary certificate examination (H.S.C) in 2015 (G.P.A -4.83) from MoulaviShamsul Karim College, Chhagalnaiya, Feni. I am a student of 22nd 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.