# An Assignment on Management and Practice in Nahar Dairy Farm, Chittagong, Bangladesh

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Session: 2010 – 2011

A production report submitted in partial

satisfaction of the requirements

for the degree of

***Doctor of Veterinary Medicine***

Faculty of Veterinary Medicine

Chittagong Veterinary and Animal Sciences University

Khulshi, Chittagong, Bangladesh

**November 2016**

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# An Assignment on Management and Practice in Nahar Dairy Farm, Chittagong, Bangladesh



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**November 2016**

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**Abstract**

The present study was conducted at Nahar Dairy farm on Mirsharai Upazila in Chittagong district, Bangladesh from 1st July to 31st July, 2016 for duration of one month. The study was assigned to determine the present status including general information, feeding, breeding, housing, milking etc. of this private dairy farm, to know the management and overall husbandry practice of private farming, to estimate and assess the average farm profitability of broiler farming, to find out the problems and limitations in commercial dairy farming, to evaluate the productive performance of crossbred cows, to know the reproductive performance of crossbred cows at intensive farming system. It appeared from the study that all the dairy cattle were cross of local breed with Holstein Friesian. Average milk production of per cow was 12-13 Liter. Intensive face out system was practiced in the farm. Maximum body weight was recorded in 87.5% cross of Holstein Friesian. Both machine milking and hand milking was practiced. Both roughage and concentrate was supplied for the animals. Weaning of calf was done in the first day of birth. Vaccination and deworming was done in the regular basis. Bio-security was strictly practiced on the farm. Conception failure and mastitis was identified as the major disease problem in that farm.

***Keywords:*** Holstein Friesian cross, Private Dairy, Management, Bangladesh.

**CHAPTER 1: INTRODUCTION**

Livestock plays a substantial role in the agro-based economy of Bangladesh. This sector partially meets the demands of animal protein in the form of meat, milk and milk products. The number of milking cows in Bangladesh is 6 million, which is 25 percent of total cattle population of Bangladesh (DLS, 2008). Dairy consumption in Bangladesh is growing day by day, in comparison of food balance between 2005 and 2010 shows that per capita consumption of milk in the country increased 4.0% ([Huque and Sarker, 2014](#_ENREF_3)). The World Health Organization recommended minimum level of 250 milliliters a day where Bangladesh dairy consumption should increase five-fold. Local milk production has increased, from 1.78 million metric tons in 2001/02 to 3.46 million metric tons in 2011/12, but domestic supplies are still lagging ([Zaedi et al., 2009](#_ENREF_8)). As a result Bangladesh is importing more dairy products. With growing domestic demand for dairy products, Bangladesh is importing nonfat dry milk (NFDM) powder. In 2001/02, Bangladesh imports a record $70 million of milk powder ([Haque, 2009](#_ENREF_2)). The productivity of cattle in Bangladesh is low because of poor genetics, nutrition, herd health and management. Previous study reported that the cattle in Bangladesh are mostly of indigenous type (*Bos indicus*) with a few cross breeds of European breeds such as Sahiwal, Sindhi and Holstein-Friesian, and some pure dairy zebus ([Khan et al., 1999](#_ENREF_4)). The number of crossbred cattle is increasing day by day with the spread of artificial insemination (AI) practices throughout the country. In the recent years, cross of Holstein Friesian and Sahiwal is getting popular in private dairy farms. During my internship programme, I visited Nahar dairy farm, which was one of the urban dairy farm with 335 crossbreed cows. With this end in view, the study was undertaken with the following objectives:

1. To know the management and overall husbandry practice of private farming.

2. To estimate and assess the average farm profitability of broiler farming.

3. To find out the problems and limitations in commercial dairy farming.

4. To evaluate the productive performance of crossbred cows.

5. To know the reproductive performance of crossbred cows at intensive farming system.

## CHAPTER 2: METHODS AND MATERIALS

**2.1 Study Area**

The study was performed at Nahar Dairy farm on Mirsharai Upazila in Chittagong district, Bangladesh. Mirsarai Upazilla is located in between 22°39' and 22°59' north latitudes and in between 91°27' and 91°39' east longitudes. The total area of this upazila is 482.88 sq km, and surrounded by [Tripura](http://en.banglapedia.org/index.php?title=Tripura) state of India, [Chhagalnaiya](http://en.banglapedia.org/index.php?title=Chhagalnaiya_Upazila) and [Feni sadar](http://en.banglapedia.org/index.php?title=Feni_Sadar_Upazila) upazilas on the north, [Sitakunda](http://en.banglapedia.org/index.php?title=Sitakunda_Upazila) upazila and [Bay of Bengal](http://en.banglapedia.org/index.php?title=Bay_of_Bengal) is located on the south, [Fatikchhari](http://en.banglapedia.org/index.php?title=Fatikchhari_Upazila) upazila on the east, [Sonagazi](http://en.banglapedia.org/index.php?title=Sonagazi_Upazila) and [Companiganj](http://en.banglapedia.org/index.php?title=Companiganj_Upazila_(Noakhali_District)) ([noakhali](http://en.banglapedia.org/index.php?title=Noakhali_District)) upazilas on the west. The geographical location of dairy farm is in between 22°50'42.1"N and 91°33'05.2"E.

**2.2 Study Period**

The study was conducted from 1st July to 31st July, 2016 for duration of one month.

**2.3 Data Collection**

Passive surveillance data of the time span 1st June, 2015 to 30th June, 2016 were collected from register and active surveillance data were collected by asking questions to the farm manager. Production data such as milk production, calving record was taken from farm register. Management data such as housing, feeding, deworming etc was taken from observation and getting information from the asked questionnaire.

**2.4 Statistical Analysis:**

The obtained data was stored in Excel-2007 and descriptive statistics (i.e. means, frequencies etc) was done to estimate the different variables.

### CHAPTER 3: RESULT

**Dairy cattle of the farm:**

All the cows are cross of Holstein Friesian with local zebu cattle or Sahiwal.

**Table 1:** Types of the cattle at Nahar Dairy Farm:

|  |  |  |
| --- | --- | --- |
| **Type of Animals** | **No.** | % |
| Milch cow (Non pregnant) | 174 | 51.63 |
| Milch cow (Pregnant) | 70 | 20.77 |
| Dry cow (Non pregnant) | 03 | 0.89 |
| Dry cow (Pregnant) | 39 | 11.57 |
| Pregnant Heifer | 12 | 3.56 |
| Yearning bull | 5 | 1.5 |
| Bull calf | 16 | 4.74 |
| Heifer calf | 18 | 5.34 |
| **Total** | **337** | 100 |

**Housing management:**

Tin shed housing was provided for the milking cows, pregnant cows and bulls. Concrete flooring was provided in the cow shed. For the farming, face out system was practiced.

**Feeding management:**

Feed was provided twice in a day; morning and evening. No different ration was followed for pregnant and dry cow.

**Table 2:** Ration formulation for milking cow:

|  |  |  |
| --- | --- | --- |
| Concentrate mixture(Nahar feed) | For cow with >20 kg milk production | 10 kg |
| For cow with <20 kg milk production | 9 kg |
| Grass (Napier, German0 | Summer season | 50 kg |
| Winter season | 20 kg |
| Hay | Summer season | 2 kg |
| Winter season | 3 kg |
| Water | Ad libitum |

**Calf management:**

Weaning of the calf was done at the day one. 4 liter milk was allocated for per calf. Bottle feeder was used for feeding of the calves. Calves were housed in separate housing.

**Milking and Milk Production:**

Both hand and machine milking were practiced. During hand milking, animals were milked by workers through folded thumb. Washing of the teat and udder of animals were practiced before milking. Teat was dipped in to iodine solution before milking. Subclinical mastitis was the common problem in lactating animals. The average milk production of per cow was 13.873 Liter.

**Figure 1:** Milk production data (Day average/month) from June, 2015 to June, 2016.

In the middle of August and September, 2015 heavy rain and stagnant water for hours, consequently diarrhoea and FMD occurred of the animals.

**De-worming and Vaccination:**

De-worming was done in every 4 months interval. Ivermectin was used in dose of 10mg/50kg body weight. Combination of levamisole and Triclabendazole was also used.

**Table 3:** Vaccination schedule for the cattle in Nahar Dairy Farm:

|  |  |  |
| --- | --- | --- |
| **Vaccine Name** | **1st Dose** | **Boostering** |
| Foot and Mouth Disease | 6th month | 6 months later |
| Hemorrhagic Septicemia | 6th month | Yearly |
| Black Quarter | 6th month | 6 months later |
| Anthrax | 1 year | Yearly |

**Bio-security:**

Bio-security was strictly practiced. Animal movement was controlled. Movement of the farm personnel and other visitors were also controlled. Foot bath and spraying was present in the entrance. Separate dress and shoe for working in the farm was practiced. The farm was inaccessible to wild birds and rodents. The farm was cleaned thrice in a day with plain water.

**Reproductive management:**

For reproduction artificial insemination was practiced in all cases. Holstein Friesian Semen was imported from Semex®, USA. Pregnant heifers were provided different housing.

**Figure 2:** Relationship of Body weight with Holstein Friesian blood percentage:

**Main diseases:**

Conception failure and mastitis was identified as the major disease problem in that farm.

##### CHAPTER 4: DISCUSSION

In the recent years, cross cattle had become more popular in private dairy farming in Bangladesh. It appeared from the study that hundred percent of the dairy cattle were cross of local breed with Holstein Friesian in Nahar Dairy Farm. Average milk production of per cow was 12-13 Liter. This showed agreement with the previous study which stated intensive farming could maximize the milk production in cross breed animals ([Shamsuddoha and Edwards, 2000](#_ENREF_6)). Maximum body weight was recorded in 87.5% cross of Holstein Friesian. Crossing of the pure breeds could be a reason behind this([Touchberry, 1992](#_ENREF_7)). Both machine milking and hand milking was practiced. It had seemed that heavy rain and stagnant water for hours caused decreased milk production in cattle. This could be due to consequently diarrhoea and FMD which occurred of the animals during that period. Both roughage and concentrate was supplied for the animals. Weaning of calf was done in the first day of birth. Vaccination for Foot and Mouth Disease, Hemorrhagic Septicemia, Black Quarter and Anthrax was done. No record of that mentioned diseases were found. That indicated effectiveness of vaccination in dairy farming. Regular deworming was done with Triclabendazole, Levamisole and Ivermectin. This practice assumed to help in getting higher milk production which agreed with previous study ([Ploeger et al., 1989](#_ENREF_5)). Bio-security was strictly practiced on the farm. Animal movement was controlled. Movement of the farm personnel and other visitors were also controlled. Foot bath and spraying was present in the entrance. Separate dress and shoe for working in the farm was practiced. The farm was inaccessible to wild birds and rodents. The farm was cleaned thrice in a day with plain water. Strong bio-security played another role for successful dairy farming. Conception failure and mastitis was identified as the major disease problem in that farm, which were the main causes for loss in dairy farming ([Esslemont and Peeler, 1993](#_ENREF_1)).

**CHAPTER 5: LIMITATIONS**

Data keeping was not done properly in many cases. No fixed protocol was practiced for management. The period of the study was short to analyze productive performance.

CHAPTER 6: CONCLUSION

From the above discussion it can be concluded that Nahar Dairy Farm is a very prospective private farm for milk production. But first it is crying need to solve the constraints such as conception failure and diseases like mastitis. From this study it may be concluded that the milk production can be increased up to the standard level with good management practices. It can be also assured that the farm will be more profitable for getting standard level production. It is also very important to maintain bio-security. It would be possible to meet the protein demand of the people and to remove the poverty of people creating employment opportunities for the unemployment people.

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ACKNOWLEDGEMENTS

The author wishes to acknowledge the immeasurable grace and profound kindness of Almighty “Allah” the supreme authority and supreme ruler of universe, who empowers her to complete the work successfully.

The author has to thank to her parents for their immeasurable love and support throughout her life.

The author expresses her deepest sense of great gratitude and indebtedness to respected Prof. Goutam Buddha Das, Hon’ Vice Chancellor, Chittagong Veterinary and Animal Sciences University for his trustworthy and scholastic supervision during the entire period of the study.

With radiant sentiment, the author places on record her best regards to DR. Mukti Barua, Lecturer, Dept. of Animal Science and Nutrition, Chittagong Veterinary and Animal Sciences University for providing resources and reviewing the report.

BIOGRAPHY

Being privileged, I arrived in the wonderful family of Mr. and Mrs. Hasan in 1993. Later, with the continuation of traditional Bangladeshi education system, I achieved Secondary and Higher Secondary School Certificate in 2008 and 2010. At this time, I am studying as an internee of Doctor of Veterinary Medicine in Chittagong Veterinary and Animal Sciences University, Bangladesh. I found my luck back again to be an optimist for becoming a practical researcher. I, myself am a dream, more than a person, who believes in uplifting humankind and to be a voice for other’s dream.