

A Production report
On
Bangladesh Dairy Industry in Context to Global Dairy Scenario



A Production report presented in partial Fulfillment of the requirement for the degree of

Doctor of Veterinary Medicine

A Report

submitted

By:

Md. Shariar Bin Giash

Roll No: 15/53

Reg No: 01471

Intern ID: 49

Session: 2014 – 2015

Faculty of Veterinary Medicine

Chattogram Veterinary and Animal Sciences University Khulshi, Chittagong-4225,
Bangladesh

June, 2020

A Production report
On
Bangladesh Dairy Industry in Context to Global Dairy Scenario



A production report submitted as per approved style and
content

Signature of the Author

.....
Md. Shariar Bin Giash

Intern Id: 49

Roll No: 15/53

Reg No: 01471

Session: 2014-2015

Signature of the Supervisor

Dr. A K M HumayunKober

Professor

Department of Dairy and Poultry Science

Faculty of Veterinary Medicine

Chattogram, Veterinary and Animal Sciences

University, Khulsi, Chattogram- 4225

Faculty of Veterinary Medicine
Chattogram Veterinary and Animal Sciences University
Khulsi, Chattogram – 4225

June, 2020

Table of Contents

Content	Page
List of Figures	IV
List of Table	IV
Abstract.....	V
Introduction	1-2
Discussion	3-8
Challenges	9-11
Conclusion.....	12
References	13
Acknowledgements	14
Biography.....	15

LIST OF TABLES

Table	Content	Pages
Table 1	Production of milk in Bangladesh	06

LISTS OF FIGURES

Figure	Name of figure	Page
Figure 1	World milk production	05
Figure 2	Milk producing country	05
Figure 3	Milk consumption per capita	07
Figure 4	Milk producing animal in Bangladesh	07
Figure 5	Livestock contribution in GDP (%)	08
Figure 6	Challenges of Dairy Industry	09

Abstract

This report aims the initiation of a comparative study of Bangladesh dairy industry with other developed country as well as to know the challenges of the dairy industry in Bangladesh. Although, dairying is the most ancient occupation established in the rural setting of Bangladesh, its development is unsatisfactory due to several problems. The number of registered dairy farm from 2010-11 to 2015-16 has been increased from 79942 to 1201000 in Bangladesh. Annual milk production was 2.25 million tons in 2005-06 which obtained the mark of 3.46 million tons in 2011-12. The milk production annually grew by 6.2% within 2005-12 but the demand for milk and dairy products increased 10% per year. The total milk processing capacity is about 384000 liters/day by the different processing industry of Bangladesh. On the other hand, global milk production in 2017 was 940 million as which was an increase 1.2 % from 2016 mainly resulting from production increase in India, Pakistan, Brazil, Germany, USA. Though milk production is increasing around the globe but in Bangladesh production is not increasing in sufficient manner. National milk production can only meet 13% of the current milk consumption. Livestock accounts for about 14.08% of agricultural GDP. In our study we find thatmilk production is lower in our country due to adverse weather and lack of high yielding breeds. Milk price is not convenient in comparison to other country due to lack of quality maintaining and adulteration problem.The demand for milk is growing at a faster rate than supply because of the rapid increase in population, creating a widening imbalance between demand and supply. There is a need to have knowledge of the existing demand, its growth over time, and the existing supply possibilities. The linkage between milk producers and milk processing enterprises will improve marketing system and consumers will be able to purchase pasteurized milk and milk products at their convenience.

Key words: Dairy industry; global Dairy; challenges; milk production

CHAPTER-1

Introduction

Dairy farming is one of the lucrative and profitable businesses under ideal livestock management practices. The economy of Bangladesh is based primarily on agriculture and livestock is an essential component of the rural economy and the livelihood of the subsistence of the farmers (Kober et al, 2003, 2014).

Trends in dairy sector –Global

- Production and consumption in developed countries are constant or falling while productivity is rising, whereas

- Milk production and consumption in developing countries are increasing as are the number of dairy farms and cows but much less so productivity

- Dairy trade volumes are increasing driven by consumer demand growth in developing countries, however

- Developing countries' import dependency for dairy products

is falling (imports are growing at a lower rate than milk production)

- Because markets in developed countries are saturated and extremely competitive dairy industries in developing countries will increasingly face international competition



Trends in dairy sector –Bangladesh

- Average dairy herd 2 cows, 11 l milk

- Low technology and capital input;

- Dependence on household members for most labor;

- Production for household consumption as a first



priority, instead of market directed production;

- Milk production not seen as a cash crop;
- Milk production per animal is low and, therefore, the total volume per farm also low;
- Often in remote rural areas with poor infrastructure.

The dairy sector being an integral part of farming system has created employment opportunity, improved food security and enhanced supply of quality protein, contributing economic growth of Bangladesh. Although, dairying is the most ancient occupation established in the rural setting of Bangladesh, its development is unsatisfactory due to several problems. The number of registered dairy farm from 2010-11 to 2015-16 has been increased from 79942 to 1201000 in Bangladesh. Annual milk production was 2.25 million tons in 2005-06 which obtained the mark of 3.46 million tons in 2011-12. The milk production annually grew by 6.2% within 2005-12 but the demand for milk and dairy products increased 10% per year. The total milk processing capacity is about 384000 liters/day by the different processing industry of Bangladesh. Although the number of farm and milk production increased, this is far behind the expectation due to lack of milk processing facilities. National milk production can only meet 62.6% of the current milk consumption. Livestock accounts for about 14.08% of agricultural GDP. The demand for milk is growing at a faster rate than supply because of the rapid increase in population, creating a widening imbalance between demand and supply. There is a need to have knowledge of the existing demand, its growth over time, and the existing supply possibilities. The linkage between milk producers and milk processing enterprises will improve marketing system and consumers will be able to purchase pasteurized milk and milk products at their convenience. However, very limited work has been done in our country regarding in this aspects. Considering fact the present study was conducted with aim to achieve the following objectives-

1. To evaluate the comparative study of dairy industry with other developed country
2. To know the difference of milk production in context to other world
3. To determine the challenges in the dairy industry development.

CHAPTER-2

Discussion

History of dairy industry in Bangladesh

In 1946, Late M. Mukhlesur Rahman Pioneer of Dairying in Bangladesh a Dairy Plant with a capacity of 2,000 litres per day was established at Lahirimohanpur, Pabna (presently Sirajgong) with the target to send milk products to Calcutta (India) market that was within the easy rail communication system. After the partition, Eastern milk Products Limited, a private company purchased this dairy in 1952 from the original owner. In 1965, the first milk producers' co-operative was formed under the name Eastern Milk Producers' Co-operative Union Limited (EMPCUL) through Government patronization over the plant at Lahirimohanpur, for the poverty alleviation and to enhance the milk production in the country.



The dairy plants were owned and operated by the Eastern Milk Producers' Co-operative Union Ltd. along with the other two existing dairies**. The nomenclature of the organization was changed to Bangladesh Milk Producers' Co-operative Union Ltd. In 1977 keeping it's Brands name of products the same, MILK-VITA.

Bangladesh Milk Producers' Co-operative Union Ltd. popularly known by its brand name MilkVita, was established by the Bangladesh Government in 1973, immediately after the liberation war, based upon the recommendation by UNDP/FAO and DANIDA in the pattern of AMUL, India. It was initiated as a development project of the Government titled "Co-operative Dairy Complex" with the objective of ensuring fair price for the poor, landless and marginal milk producing farmers of the rural Bangladesh and on the other hand to provide the city dwellers with a regular supply of fresh and hygienic milk and milk products at a reasonable price. The scheme had the proposal of establishing dairy plants in the milk surplus areas already identified as Pabna, Tangail, Manikganj and Faridpur. The Government started implementation of the programme in it's First Five Year Plan(1973-78). The plants were to operate through collection of milk by a network of milk producers' co-operative societies in milk-shed areas. The project

envisages the purchase of milk from individual farmer members of the primary milk producers' societies, twice daily, transport of this milk to rural dairy plants of Tangail, Manikganj and Faridpur by a combination of various methods of transportation. After preliminary processing at the rural plants, milk is to be transported to Dhaka in insulated road milk tankers for processing, packing and marketing of pasteurized Liquid Milk and Milk Products. Milk collected at the Baghabarighat Plant from its surrounding societies, is to be converted into Butter, Powder Milk and Ghee etc. All the products however, are to be marketed through Dhaka Marketing Unit. The Head Office named "DugdhaBhaban" of the organization. Milk Vita is a service oriented as well as commercial organization. It is the biggest and only co-operative based milk industry in Bangladesh. Following the co-operative's acts & rules it is led by itself. It's a profitable organization. In spite of various limitations it is trying hard to gain self-sufficiency in the dairy sector.

** There was another dairy plant, ASTO Dairy at Dhaka run by the National Co-operative Marketing Society which was amalgamated with the EMPCUL in 1973 (Eastern Milk Producers' Co-operative Union Limited).

Bangladesh Dairy in the Global Context

World Milk Production

Global milk production in 2017 was 940 million as (Fig.1) which was an increase 1.2 % from 2016 mainly resulting from production increase in India, Pakistan, Brazil, Germany, USA .On the other hand partially went down in Australia , Turkey, Argentina, Colombia. If we consider global region Asia registered the largest expansion followed by Europe ,North America ,South America but declined in Oceania (FAO, 2017). In case of South Asia India holds the major part in expansion of dairy industry by producing 146.01 million tons which comprise the 15.58% global milk production. Whereas Nepal produced 1.8 millionstonsns milk, Pakistan produced 42 million tons, Srilanka did 0.25% and the Bangladesh did 6.5 million tons which holds the 0.8% of total global production. From Fig.2 we can say that Bangladesh milk production development occurs more than Nepal and Srilanka based on neighboring country.

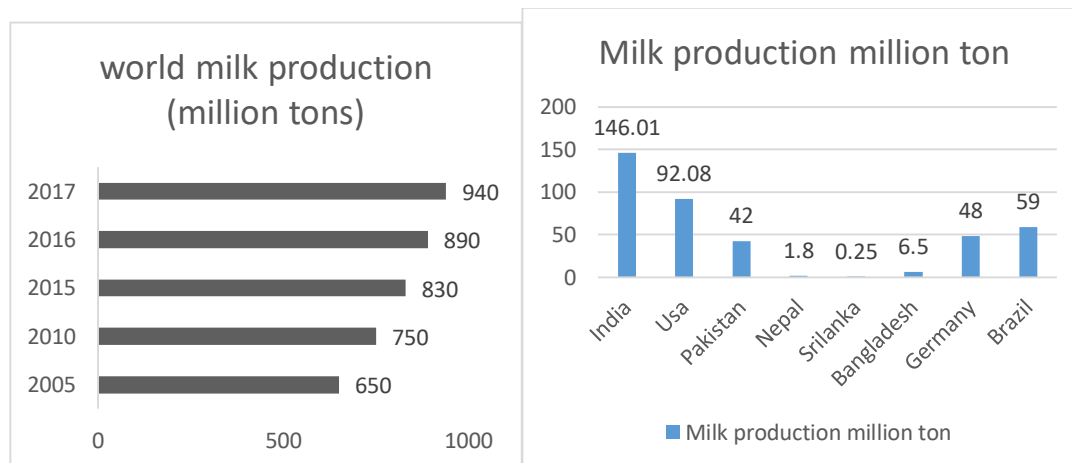


Fig 1: World milk production (FAO, 2017)

Fig 2: Milk producing country (FAO, 2017)

Dairy Bovines

Bangladesh has 24 and 0.8 million cattle and buffalo respectively, over two and a half as many bovines as New Zealand, one of the major dairy exporters worldwide. Unlike in India and Pakistan, milk production from bovines in Bangladesh relies heavily on cattle rather than on buffaloes while goats contribute more than half of national milk production.

Dairy Farm Sizes

The small the dairy farms in India and Bangladesh are in comparison with those of other major milk producing nations. The most common herd size ranges between 1 and 2 cows per farm. These figures are based on expert estimates as official farm structure statistics for the whole of Bangladesh are not available. Shamsuddin (2006) estimates that over 70 percent of the dairy farms would have an average of 3.5 bovines.

Milk Yields

The average milk yield per bovine reported for Bangladesh is extremely low. On average a Bangladeshi cow is reported to produce around 200 kg/year, which is below 30 percent the production of an Indian cow. This low milk yield is mainly due to poor feed resources and low milk productivity of the most common types of animal, which are of one of the local breeds. In a study is found that those conceive after Artificial insemination under proper management yield much milk. (Ahmed et. al 1987)

Table 1: Production of milk (Bangladesh)

Product	Unit	2014-15	2015-16	2016-17	2017-18
Milk	Lakh metric ton	69.70	72.75	92.83	94.06

Bangladesh has seen a slight improvement in milk yields in the period 1996 to 2002. The majority of animals, which are local cattle breeds, increased milk yield by around 5 percent, while milk yield of crossbred cows and buffaloes increased by 4 to 8 percent.

Milk Prices

Farm gate milk prices in Bangladesh are about 40 to 50 percent higher than in India and New Zealand, but about 30 and 17 percent lower than in the USA and Germany respectively.

While nominal milk prices in Bangladesh grew by 50 percent from 1996 to 2002 (in Taka), the exchange rate to the US Dollar rose only by 40 percent and the national inflation was 35 percent (1996 to 2002). In real terms, milk prices received by farmers have increase by about 16 percent over the past six years.

Milk Consumption per Capita

Milk consumption per capita is highest in Finland & lowest in Bangladesh.

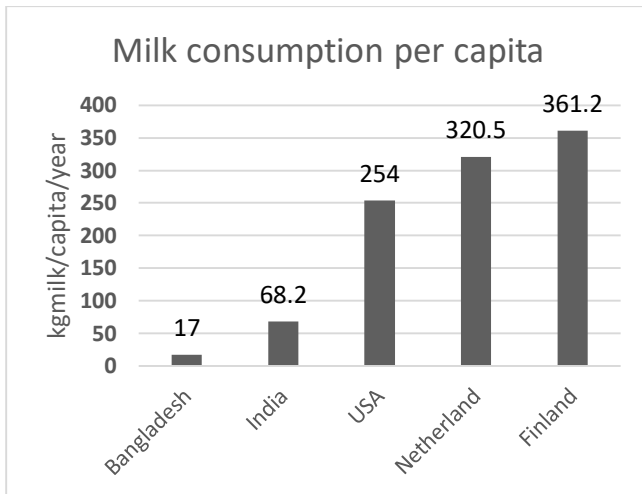


Fig 3: Milk consumption per capita (FAO, 2017)

Milk producing animal in Bangladesh

About 80% milk are produced from cow and 17% from buffalo. We should introduce more efforts & scientific methods to increase the production as well as meet up the demand.

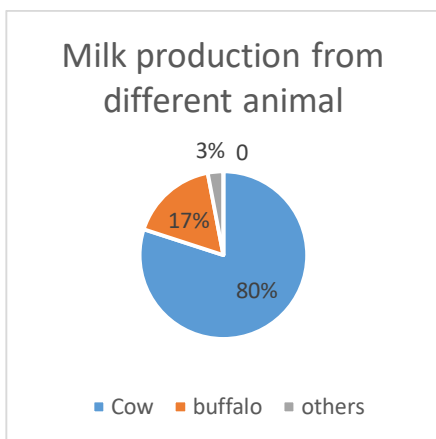


Fig 4: Milk producing animal in Bangladesh

Livestock contribution in GDP

Though our milk production is increasing but the requirement of milk and the demand of people will not meet up the growth curve of milk production is on the rise but in context of other developing country is not satisfactory.

Contribution of Livestock in GDP

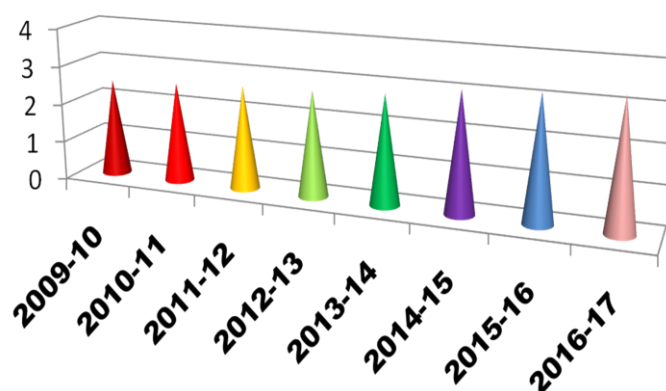


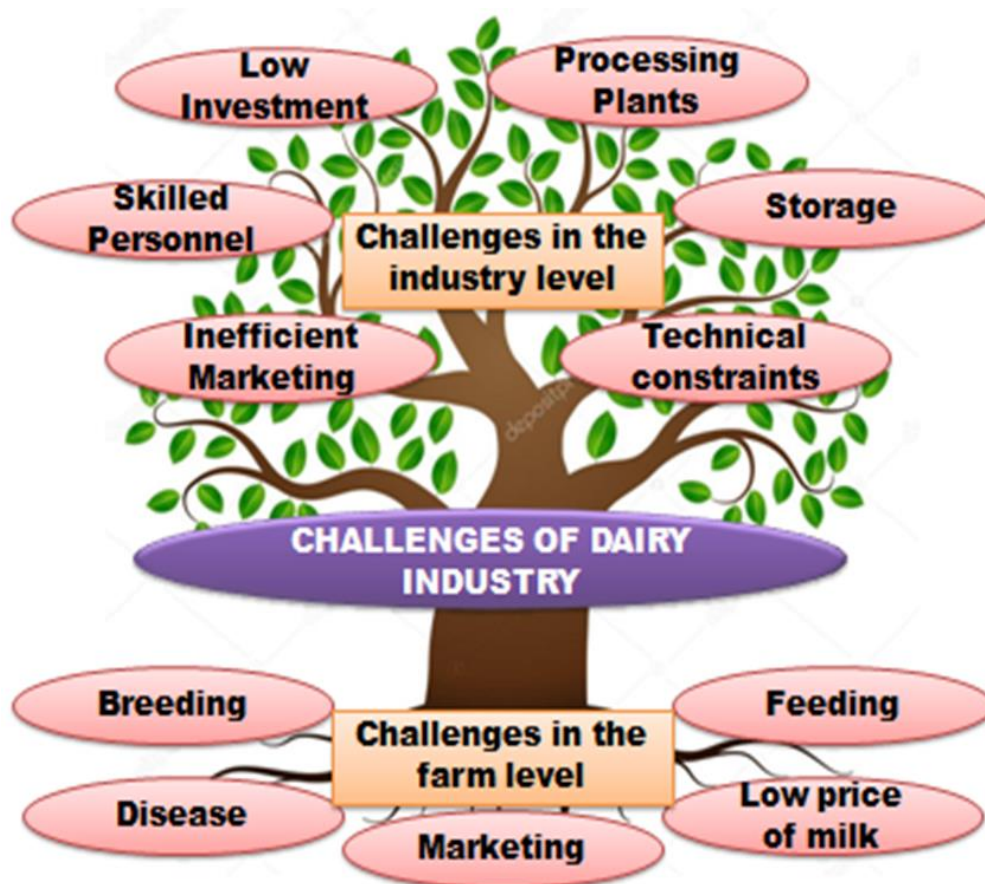
Fig: Livestock contribution in GDP (%)

Challenges for Bangladeshi Dairy Industry

Below Fig illustrate challenges for Bangladeshi Dairy Industry including;

- 1) **Feeding:** Available feed and fodder are the main constraints to dairy farmers. Problems with both quality and quantity along with economical technology of local feed resources make the situation worse.

2) **Breeding:** Breeding: Most of the cattle of Bangladesh are non-descriptive types, which do not belong to any specific breed and termed as indigenous breed. Indigenous breed are smaller in size and their milk production is lower than exotic breed. The crossbred cattle produce 5-10 liters milk daily (Nahar et .al., 1992).



The average production of zebu cattle 0.5- 2.5 liters (Hossain et. al., 2005)

3) **Disease:** Our country's climate and poor nutritional status of animal pave the way of exposing milk reducing disease like mastitis.

4) **Inefficient marketing:** Due to lack of knowledge as well as awareness marketing of milk cannot possible as it supposed to be. Well trained personnel is rarely found in rural areas who will ameliorate the present condition.

5) **Low price of milk:** People who lives in remote area fail to get proper price of milk due to quick transport system. As milk is perishable, they are compel to sell the milk to the nearby market or tea stall at a cheaper price which pave the way of unwillingness to milk producing

6) **Low investment:** Low investment also a key factor in the way of development of dairy industry in Bangladesh. Most of the people who related to dairy industry are

middle class people, for those huge amount of investment are not possible. People indifference towards investment rein in developing the dairy industry quite extent

7) **Skilled personnel:** Skilled personnel is not available in our country. That's why milk collection and the knowledge of how to deal with the predicament of running a dairy farm or caring of the cow or prevention of disease are not well furnished.

8) **Processing plants:** Due to lack of investment and indifference of the people along with government helping help is not ensured making processing plants according to scientific way as other countries did so far.

9) **Management of dry and non-pregnant animals:** The management of dry and non-pregnant animal create a worse condition in regarding flourishing of dairy industry. The cost of such kind of management is not possible often for the industry. Sometimes haphazard management is done resulting make the condition more badly.

10) **Problem of adulteration:** Some unscrupulous seller mix adulterated substances like glucose, water, white powder, glycerin to increase the volume of milk so that they can earn more profit. This kind of activities break the image our industry.

11) **Cold chain, transportation, and shelf life problems:** Cold chain is important to preserve high quality milk. Due to failure of proper cold chain milk become sourness, unpleasant taste and odor, changes in texture and reduce the shelf life of milk which leading towards less profitability.

12) **Low processing in organized sector:** Low processing and shortage of Proper milk sector in organized sector decrease the shelf life of milk. Milk is not preserve for long time due haphazard management.

13) **Low productivity and scattered production:** As compared to average productivity of animals in Europe the productivity in Bangladesh is still low. This increase load on land, fodder water resulting in reducing profitability of fairing as a profession. The milk production of Bangladesh is also scattered. About 80 % of milk producers have less than 5 milch cow.

14) **Breed selection:** The temperate cross bred get higher profitability in milk production than tropical crossbred. Due to absence of this knowledge in crossing and breed selection farmer have to fall in precarious situation. In a study (Khan et. al.,2005) showed that crossbred shahiwal X Pabna and Holstein Friesian X local got higher profitability than the Shahiwal and Red Sindhi cross.

15) **Improper knowledge and farming method:** Small/ medium farm profitability is higher in comparison to backyard farming (Alam et.al.,1995).On the other hand Bangladesh has more backyard farming with few rearing cow couple with they have less

knowledge and education background about farming. A report showed that(Kabir 1995) most of the almost 75 % above only primary level education background and among them 4% are taking DLS provided training on dairy farming. This kind of differences headed the situation towards worse.

CHAPTER-3

Conclusion

Dairy industry in Bangladesh is growing at a faster rate than the developed countries of the world. Dairy is not a business but a successful proven model for socio-economic change in rural areas. Dairy acts as a source of livelihood, nutrition, employment generation and community development. Bangladesh dairy industry different from the other countries where cooperative model is a strength but low level of processing sector is a weakness. Quantity is a strength but quality is a challenges. Huge market is a strength but low production is a weakness .Two big threats are adulterated and analogues. Environment protection also show up during flourishing dairy industry where starting from cattle rearing to product dispatch is blamed with intensive greenhouse gas emission business. As well as many processes are energy intensive.

Reference

- Ahmed, Z. and Islam, T.S., 1987. Cattle breeding program through Artificial Insemination in Bangladesh. *Artificial Insemination Extension Project. Central Cattle Breeding Station, Savar, Dhaka, 2nd April, Department of Livestock Services, Dhaka, Bangladesh*, pp.1-68
- Alam, J., Yasmin, F., Sayeed, M.A. and Rahman, S.M.A., 1995. Economics of mini dairy farms in selected areas of Bangladesh. *Asian-Australasian Journal of Animal Sciences*, 8(1), pp.17-22.
- Hossain, M.M., Alam, M.M., Rashid, M.M., Asaduzzaman, M. and Rahman, M.M., 2005. Small scale dairy farming practice in a selective area of Bangladesh. *Pakistan Journal of Nutrition*, 4(4), pp.215-221.
- Kabir, M.A., 1995. An economic study of subsidized private dairy farming in selected area of Bangladesh. *Unpublished master's thesis, Dept of Agril. Economics, BAU, Mymensingh*.
- Khan, M.K.I., Blair, H.T., Lopez-Villalobos, N. and Johnson, P.L., 2005. Productive, reproductive and economic performance of dairy cattle in Bangladesh. In *Proc. Assoc. Advmt. Anim. Breed. Genet* (Vol. 16, pp. 124-127).
- Kober, AKMH, Bari, MS, Nath, BK and Chakma, J, Small scale dairy cattle management in hilly district of Bangladesh. *Advances in Agriculture, Sciences and Engineering Research*, 4 (1), 1445-1452, 2014.
- Kober, AKMH, Debnath, GK, Chanda, GC, Chanda, T and Amin, MR 2003. Economic traits of different dairy cows under village condition. *Pakistan Journal of Biological Sciences*, 6, 902-904, .
- Nahar, T.N., Islam, M. and Hasnath, M.A., 1992. A comparative study on the performances of F1 crossbred cows under rural conditions. *Asian-Australasian Journal of Animal Sciences*, 5(3), pp.435-438.
- Shamsuddin, M., Goodger, W.J., Hossein, M.S., Bennett, T. and Nordlund, K., 2006. A survey to identify economic opportunities for smallholder dairy farms in Bangladesh. *Tropical Animal Health and Production*, 38(2), p.131.

ACKNOWLEDGEMENT

The author is ever grateful and indebted to the Almighty Allah without whose grace it would have ever been possible to pursue this study in this field of science and to complete this clinical report writing for the Degree of Doctor of Veterinary Medicine (DVM). The author would like to express his deepest sense of gratitude to the Supervisor **Professor Dr. A.K.M. Humayun Kober**, Department of Dept. of Dairy & Poultry Science, Chittagong Veterinary and Animal Sciences University for his scholastic guidance in all phases of this study.

The author would like to express his deep sense of gratitude and thanks to **Professor Goutam Buddha Das** honorable Vice Chancellor, Chittagong Veterinary and Animal Sciences University.

The authors highly express his sincere gratitude and gratefulness to the Director of External Affairs, Professor **Dr. A. K. M. Saifuddin**, Department of Physiology, Biochemistry and Pharmacology, Chittagong Veterinary and Animal Sciences University.

BIOGRAPHY

MD.Shariar bin giash is an intern student for the degree of Doctor of Veterinary Medicine (DVM), Faculty of Veterinary Medicine, CVASU. He passed the Secondary School Certificate Examination (SSC) in 2011 from Chittagong Government high school, Chittagong and got CGPA 5.00 and then Higher Secondary Certificate Examination (HSC) in 2011 from Chittagong College, Chittagong and got CGPA 5.00. Then he admitted to the degree of Doctor of Veterinary Medicine (DVM), Faculty of Veterinary Medicine, CVASU in 2014-2015session.

Now he completed his internship successfully.