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**ABSTRACT**

The study was the productive and reproductive performances of indigenous and crossbreeds dairy cattle in Ramgati Upazilla in Lokhipur. The farmers of the study areas are rearing both indigenous and crossbreed cows. The result of the collected data different reproductive performances of those cow such as age at puberty 26.58 months, age at first calving 37.38 months, service per conception 1.8, calving interval 12.7 months, days required to first heat during postpartum period 109.31 days and gestation length 282.34 days. In this study some data were recorded to observe the production performances of those cows. Milk production and lactation length was 6.6 liter/day and 249.86 days, respectively. The maximum milk production was 12 liter/day/cow and the minimum production was 2.00 liter/day/cow supplied some amount of concentrate along with roughage.The productive and reproductive performance variation of dairy cows in our country .In rural level it is more noticeable as there have no any proper management ,proper feed supply and laking of proper veterinary care.

# INTRODUCTION

Bangladesh is an agricultural country. Most of people depend on agriculture. They live on hand to mouth. For proper maintaining their life livestock is one of tools. In our economic sector it has important role**. Livestock is the important components for the source of animal protein. However, their present contribution to the nutritional statistics for Bangladeshi people is too lows, the reasons behind this socio-economic condition of the people. Here absence of livestock development policy . Livestock sub-sector** to the GDP was 7.23 percent, which was estimated about 17.32 percent GDP to agriculture. (Source: Economic Review*2010)*.

 Cattle are an essential and integral part of the existing farming in Bangladesh. The indigenous cattle under threaten condition because of urbanization and industrialization. Cattle are important domestic animal in Bangladesh. Most of the cattle are local. But of all local cattle Red Chittagong Cattle and, Pabna cattle are important. . Red Chittagong Cattle produce about 2-3 litres milk in farm condition. Most of the people of Chittagong region rear RCC. Some people of others region of Bangladesh rear this breed. Some crossbreed also rear in rural in Bangladesh. The crossbred animals provide higher amount of meat and milk .But they are affected by various diseases, especially parasitic diseases They are also affected by different metabolic diseases(Samad, 1988)

The main target of a dairy cow is to have a live calf in every year. Although we have large amount of cattle population but they are affected by different diseases. For this reason fertility and productive performance is not good. Our farmer faces in loss. There are also others problem such as nutritional deficiency, management lacking, estrous detection, artificial insemination in incorrect time and, unskilled inseminator.

 In dairy industry, reproductive efficiency of cow is associated with the profitability. Without profit farmer fall in loss. If the reproductive performance of dairy cows is low then it is impossible to continue farm. Most of indigenous cattle rearing in scattered and open field. The farmers are not aware about their animal .So data collection is very difficult. (Hossain, 2005). We have a large no. of population. We cannot satisfy the growing need of nutrition of huge population with small amount of beef and milk production without having knowledge of performance of indigenous and crossbreed cattle.

 Objectives:

1. To observe the existing productive performance of indigenous and crossbreed cattle in Ramgoti upozila in Lokhipur.

2. To know the reproductive performance of indigenous and crossbreed cattle in Ramgoti upozila in Lokhipur.

3. To know about present condition local breed and their productivity.

4. Nutritional and management facilities.

5. improvement of local breed

6.Adaptibility of crossbreed

**MATERIALS AND METHODS**

The study was at the Ramgoti Upazilla located Lokhipur district in Bangladesh during the period of November 10 to December 10, 2014. This Upazilla was selected on the basis of number of indigenous and crossbreed cow observed frequently.

 **Data collection**

At first, I went to field and make good relation with farmers. Upozilla Livestock offices were helped an important role to get more and easy to collect data. After site selection an information survey was made and went to farms and total 50 cows were selected from different farms of selected Upazilla during the study period. The selected cows were visited frequently and the information on the productive and reproductive performances of each cow was collected by face to face interviewing the farmers by frequent visit and examination of the cow. After that, all data were recorded in a separate designed paper.I asked them different questions such as milk ,parturition,feed,water and housing.

**Traits considered for the study**

During data collection I gave importance of some traits. The schedule was prepared on the basis of following key items: age at puberty, gestation length, days to post partum heat, calving interval, service per conception, daily milk production per cow, total lactation length. During investigation the management including feeding, housing, ventilation, hygiene etc were also observed and recorded in the papers.

 **Age at puberty**

The length of time between the date of birth and the date of showing first heat in life of an individual is termed as age at puberty. It has an economic value to the breeders because farmers always expect calf earlier from a heifer that is related to the age at sexual maturity of an individual.

 **Age at first calving**

The age of first calving is the age of an individual when first give birth newborn in life.

 **Number of services per conception**

This indicates to how many services are needed for a successful conception of an individual and is calculated by dividing the number of conceptions with the number of inseminations. The lower the number of services for each conception, the higher the reproductive efficiency of the cow or breeding programme.

**Calving interval**

This indicates to the time between two successive calving. It is very much important to the breeders because the lowest the calving interval the highest the lifetime calf production.

 **Post partum heat period**

It is the time between the date of calving to the date of first subsequent estrous. This period is required for resumption of ovarian activity and uterine involution. This trait refers to the reproductive efficiency of an individual because the shortest the post-partum heat period the highest the calf production in their lifespan.

**Gestation length**

The gestation length is the period between the date of fertile service and the date of calving.

**RESULTS AND DISCUSSION**

 **Age at puberty**

The age at puberty of these crossbreed heifers in reared farms of our study area was 26.58 months presented in Table 1. Some researchers reported higher values ranging from 32.5 to 42.45 months for non-descript Deshi/Indigenous cows (Majid *et al*. 1995 and Ali *et al*. 2006), 39.23 ± 4.31 and 35.1 ± 9.24 months for S × Pabna crosses cows (Hoque *et al*. 1999). But in case of F × Pabna crosses the value was 25.53 ± 5.59 months (Hoque *et al*. 1999) which is shorter than the present study. The AP was 35.6 ± 0.53 months for local cattle in India which is also higher than our finding. .. The variation between local and other breeds due to differences in nutrition body condition score (BCS), management, environment and different genotypes,feeding,watering,ventilation and temparature

**Age at first calving**

Table- 1 showed that the age at first calving of indigenous crossbreed cow was found 37.38 months in our study area. In comparisonly longer age at first calving (45.7 ± 0.52 to 54.0 months) was found for local(Deoni) cattle of India (Singh *et al*. 2002), Prepubertal growth rates and reproductive performance determined by management and nutritions . Early age at first calving due to the better-managed and good feed supply.It helps heifrs grew faster, received service earlier (Masama *et al.* 2003).

**Table 1: Reproduction performances of crossbreed cow in Ramgati upazilla,Laxmipur**

|  |  |  |
| --- | --- | --- |
| **Criteria** | **No of observations** | **Mean** |
| Age at pubert(month) | 50 | 26.28 |
| Age at first calving(month) | 50 | 37.38 |
| No of service per conception | 50 | 1.8 |
| Calving interval(month) | 50 | 12.7 |
| Post partum heat period(days) | 50 | 109.31 |
| Gestation length(day) | 50 | 282.34 |

 **Number of services per conception**

The mean number of services per conception observed in my study was 1.8 which is almost close to the findings of Ahmed and Islam (1997) for Red Chittagong cattle (1.57 ± 0.53) and Khan *et al*. (1999) for Pabna deshi cows (1.57 ± 0.07). It is comparisonly lower number of services per conception (1.2 to 1.36 ± 0.067) was found by Habib *et al*. (2003) and Alam *et al*. (1994). Jabber and Ali (1988); Majid *et al*. (1995); Sultana and Bhuiyan (1997); Ahmed and Islam, (1987) and Alam *et al*. (1994) expressed that higher values of number of services per conception ranged between 1.6 ± 0.86 to 1.78 ± 0.22 for nondescript indigenous cows in their studies. It depends on cow itself and other factors related to management and nutrition of cow.

It also depends on semen quality,semen condition,instruments for insemination,technitian and animal health .If genital organs of reproductive cows are affected by any complex diseases(oophoritis,metritis, pyomrtra,ovarian cyst ,valvo-vaginatis,salpangitis) then conception rate may vary .

 **Calving interval:**

In table- 1 showed that the mean value of calving interval of this study found 12.07 months (367 days. The average calving interval in Red Chittagong cattle in farming conditions was 374.73 days (Talukder, 2003). But in rural conditions Red Chittagong cattle calving interval 529.35 ± 127.50 days, (Khan *et al*. 2000). The calving interval of Red Chittagong cattle was 12.0 months under traditional farming systems (BLRI, 2004). Our results match with the above informations. The calving interval differs from with one another for different genotype, herd size ,diseases,feed and others conditions. The length of gestation and service period are the main components of calving interval.The calving interval may reduce if animal concept in early. (Zafar *et al*. 2008).

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 **Gestation length :**

The average gestation length in our study was found 282.34 days. The result is almost near value with the results of Hossain and Routledge, (1982) for Pabna and non-descript deshi cows 281 ± 10 days. Slightly longer gestation period (between 283.08 ± 0.49 to 287 ± 3.46 days) was found by the studies of Ghose *et al*. (1977) for Pabna cows, local indigenous and other different crossbreds. The standard gestation length of cows is 285 ± 5 days.

 **Productive performance**

The average milk production per cow per day in those cross breed cows was 6.60 liters and lactation length was 249.86 days (Table 2).

**Table 2. Production performances of crossbreed cows in Ramgati upazila.**

|  |  |  |
| --- | --- | --- |
| **Criteria** | **No of observations** | **Mean** |
| Milk production per day (in liter) | 50 | 6.60 |
| Lactation length(days) | 50 | 249.86 |

**Milk production:**

The mean milk production of crossbreed cows in this study was 6.6 liter per day. Daily milk production of local cows in farm condition was 2.56 liter per cow (Ahmed and Islam, 1987). The average milk production of our dairy farm was 3.2 ± 2.2 kg per day per cow . Our result is very higher and it might be due to the improved management and some crossbreed are rearing in rural area.The another causes for high milk production in rural areas proper treatment,good management ,veterinary care,vaccination comparatively past.

 **Lactation length:**

 In table-2 it is shown that the lactation period of those crossbreed cows was 249.86 days (Table 2). The average lactation period of crossbred was 266.42±30.87 days a. The average lactation period of indigenous cows was 228 days observed. Some reporters found slightly less lactation periods ( 222.85 ± 16.3) in Red Chittagong cattle . Khan *et al*. (2000). There are some conditions which are influence on lactation length such as heredity, adequate nutrition, milk production and weaning practice are the most important (Ali *et al*. 2000).

**CONCLUSION AND RECOMMENDATION**

After this study it may be finally that proper feeding, management, heat detection and timely insemination are necessary for improvement of reproductive and productive performance of indigenous and cross-breed cattle.There is still need for more research for a genetic improvement program of indigenous and cross-breed in farmers herd in order to make dairy farming more profitable at the sustaing farming conditions of Bangladesh.

**Recommendations for better rearing of indigenous and crossbreed cattle:**

a) The Directorate of Livestock Services should be expanded their veterinary services other facilities.

b) Veterinary treatment facilities should be extended up to union level and village level.

c) The shortage of feeds and fodder may partially overcome by introducing high yielding Variety fodder cultivation. The government and non-government organizations should play a vital role in disseminating HYV fodder cultivation.

d)CVASU which only veterinary university in Bangladesh can play important role such as making programme among farmers ,make them conscious about dieases of animal ,visiting different farm in villege,Our teachers also taken different projectfor improving animal productive and reproductive performance.

e)Others government agriculturl universities of Bangladesh taken different scientific projects for this purposes.

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**APPENDIX**

Data for local and local xHolistin Friesian

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ID NO(Cow) | Age at Puberty(Month) | Age at First Calving(Month) | Calving Interval(Month) | No of Service per Conception(Month) | GestationLength (Days) | Milk Production(Litre/day) | Lactation Period(Days) |
| 1 | 23 | 33 | 12 | 2 | 282 | 11 | 305 |
| 2 | 25 | 35 | 13 | 1 | 280 | 12 | 210 |
| 3 | 24 | 34 | 12 | 3 | 280 | 12 | 300 |
| 4 | 30 | 40 | 13 | 2 | 283 | 3 | 200 |
| 5 | 23 | 33 | 12 | 2 | 285 | 12 | 300 |
| 6 | 25 | 35 | 13 | 1 | 280 | 3.5 | 200 |
| 7 | 23 | 12 | 2 | 2 | 280 | 10 | 302 |
| 8 | 30 | 40 | 13 | 3 | 285 | 2.5 | 210 |
| 9 | 24 | 33 | 12 | 2 | 282 | 12 | 300 |
| 10 | 31 | 41 | 13 | 1 | 285 | 3 | 200 |
| 11 | 23 | 33 | 12 | 2 | 282 | 11 | 305 |
| 12 | 30 | 40 | 13 | 2 | 285 | 2.5 | 205 |
| 13 | 24 | 34 | 12 | 2 | 283 | 13 | 300 |
| 14 | 28 | 38 | 13 | 3 | 280 | 3 | 210 |
| 15 | 23 | 33 | 14 | 2 | 284 | 12 | 295 |
| 16 | 32 | 42 | 14 | 1 | 283 | 2.5 | 200 |
| 17 | 24 | 34 | 15 | 2 | 285 | 11 | 300 |
| 18 | 31 | 41 | 12 | 2 | 280 | 3.5 | 205 |
| 19 | 23 | 33 | 13 | 2 | 283 | 12 | 305 |
| 20 | 30 | 40 | 13 | 1 | 284 | 11 | 303 |
| 21 | 24 | 34 | 12 | 1 | 284 | 11 | 303 |
| 22 | 31 | 40 | 13 | 2 | 285 | 2.3 | 210 |
| 23 | 23 | 33 | 15 | 3 | 280 | 11.5 | 300 |
| 24 | 30 | 40 | 15 | 2 | 280 | 2 | 200 |
| 25 | 24 | 34 | 14 | 1 | 280 | 10 | 305 |
| 26 | 24 | 34 | 12 | 1 | 280 | 12 | 300 |
| 27 | 28 | 38 | 13 | 2 | 285 | 2.5 | 210 |
| 28 | 23 | 33 | 13 | 1 | 280 | 10 | 305 |
| 29 | 26 | 36 | 13 | 2 | 280 | 2 | 220 |
| 30 | 24 | 34 | 12 | 1 | 282 | 9 | 300 |
| 31 | 28 | 38 | 14 | 2 | 280 | 2.1 | 200 |
| 32 | 23 | 33 | 12 | 2 | 283 | 11 | 290 |
| 33 | 30 | 40 | 13 | 3 | 280 | 2.5 | 210 |
| 34 | 24 | 34 | 13 | 2 | 285 | 12 | 280 |
| 35 | 25 | 35 | 13 | 2 | 280 | 3 | 220 |
| 36 | 25 | 35 | 12 | 1 | 280 | 11 | 300 |
| 37 | 26 | 36 | 14 | 2 | 280 | 3 | 200 |
| 38 | 23 | 33 | 13 | 2 | 282 | 9 | 290 |
| 39 | 30 | 40 | 11 | 2 | 285 | 2.5 | 210 |
| 40 | 24 | 34 | 12 | 1 | 283 | 10 | 300 |
| 41 | 28 | 38 | 11 | 2 | 285 | 2 | 220 |
| 42 | 23 | 33 | 13 | 2 | 282 | 9 | 300 |
| 43 | 30 | 40 | 13 | 3 | 280 | 3 | 200 |
| 44 | 26 | 36 | 12 | 1 | 280 | 11 | 305 |
| 45 | 30 | 40 | 11 | 2 | 290 | 3 | 210 |
| 46 | 23 | 33 | 13 | 1 | 286 | 10 | 300 |
| 47 | 27 | 37 | 12 | 2 | 280 | 3.5 | 205 |
| 48 | 24 | 34 | 12 | 1 | 282 | 9 | 300 |
| 49 | 28 | 38 | 11 | 2 | 285 | 3 | 220 |
| 50 | 23 | 33 | 13 | 2 | 282 | 11 | 290 |
| mean |  |  |  |  |  |  |  |