

PRODUCTION AND REPRODUCTION PERFORMANCE OF INDIGENOUS BUFFALOES IN COASTAL AREA IN BANGLADESH

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The study was undertaken to know the productive and reproductive features of indigenous buffaloes in coastal area under pirojpur and Barguna district. For achieving the target goals, 50 buffalo owners were interviewed of selected area. The study shown that the average lactation length, milk yield, gestation period and birth weight were 286.12 ± 11.27 and 290.44 ± 10.92 days, 319.12 ± 0.68 and 3.43 ± 0.744 litres, 319.56 ± 5.93 and 319.12 ± 4.69 days, 24.28 ± 4.00 and 24.12 ± 3.60 kg, respectively. Whereas, age at first calving, post partum heat period, calving interval were 50.88 ± 1.71 and 51 ± 1.80 months, 153.6 ± 6.13 and 153.44 ± 6.78 days, 547.92 ± 10.88 and 547.24 ± 14.32 days in pirojpur and Barguna district, respectively.

Key word: Production, Reproduction, buffaloes, coastal area

Bangladesh is an agricultural country and livestock plays a vital role in its economy. Among the livestock species, Buffalo is one of them and plays an important contribution in Bangladesh as well as different asiatic countries including India, China, Pakistan, Thailand, Phillipines, Indonesia, Burma, Ceylon and Egypt etc. According to the latest estimate total world population of buffaloes is more than 185.28 million (FAO, 2005), of which about 179.75 million are found in Asia. Bangladesh possesses 1.26 million buffalo heads (DLS, 2008). It is economically important in this

region and could be used as a “small tractor” for farmers and its milk and meat. It is one of the most important sources of market milk in Bangladesh. . India has the largest buffalo population of 105.1 million and they comprise approximately 56.7% of the total world buffalo population. Bangladesh has around 830764 buffalo head owned by 270228 holdings representing 1.52% of the total holdings in the country (Faruque, 2003). In the past there was no awareness to development of buffalo based dairy and meat industry. There are various breeds of buffalo in Bangladesh. At the highest percentage of buffalo were used for land preparation in Bangladesh. Buffalo is second most dairy species in the world. Of all domestic animals Asian buffaloes hold the greatest promise and potential for milk production (Cockrill, 1982)

Bangladesh now has about 400 000 adult female buffaloes that are being used for draught or dairy purposes. These buffalo are found in the Bramhaputra-Jamuna flood plain of central Bangladesh, the Ganges-Meghna flood plain of southern Bangladesh and in institutional herds. Bangladesh has milk/dairy buffaloes of the swamp crossbred and river types such as the Murrah and Nili-Ravi. The occurrence of crossbred dairy buffaloes indicates that the genetic improvement programme has been operative and is still running. Husbandry and production systems for buffaloes vary depending on the topography and vegetation patterns of the country. Buffaloes are raised

under an extensive system in the coastal and hilly areas where large-scale pasture land and enough green forage are available (Faruque, 2003). Despite their important role in the national economy and their outstanding production potential these animals are neglected in Bangladesh. Buffalo production is reduced day by day due to traditional grazing and Bathan which is being converted to crop land, expansion of crop-water-fertilizer technology and increased number of tractor machine. In spite of all important roles in buffalo reared in Bangladesh there are some problems regarding productive and reproductive features. If we could determine the actual value of productive and reproductive features it would be possible for us to manage them easily. So the study was conducted with following objectives: to determine the identification of existing productive and reproductive features of indigenous buffaloes at the selected coastal areas of Bangladesh.

MATERIALS AND METHODS

The study was conducted to assess productive and reproductive features of indigenous buffaloes at the selected coastal areas of Bangladesh. The data were collected by interviewing the 50 farmers using a questionnaire during a period from 1st January 2014 to 1st January 2015. Though these upazilla are situated at Barguna and

Pirojpur district but geographically these are adjacent, riverine and coastal part.

Preparation of data collection schedule

The data collection was designed in accordance with objectives of the research. It was designed in a simple manner to get accurate information from the farmers. Before preparing the final schedule a preliminary schedule was developed in accordance with objectives of the study. The schedule obtained of the information about general identification and information of the selected livestock owners, lactation length, daily milk yield, gestation length, birth weight of calves, age at first calving, calving interval and post partum heat period.

Analytical Techniques

Data collection from this study were processed, tabulated and analyzed in accordance with the objectives of the study. Analysis was mainly done by Statistical Package for Social Science (SPSS) software such as percentages, mean, standard deviations etc. Reproductive features are Lactation length (days) and Daily milk yield (litres) Gestation period (days), Birth weight of calves (kg), Age at first calving (months), Calving interval (days), Post partum heat period (days).

RESULTS AND DISCUSSION

The results of different productive and reproductive features of indigenous buffalo

Table 1: Reproductive feature in different parameters

Parameters	Mean±SD	
	Pirojpur	Barguna
Lactation length (Days)	286.12±11.27	290.44±10.92
Milk yield (Liter)	3.43±0.744	3.33±0.68
Gestation Period (Days)	319.12±4.69	319.70±5.93
Birth weight (Kg)	24.21±4.00	24.12±3.60
Age at first calving (Months)	50.88±1.71	51.00±1.80
Post-partum heat period (Days)	153.30±6.13	153.44±6.78
Calving interval (Days)	547.92±10.88	547.24±14.32

cows have been identified in this study.

Lactation Length

The average lactation length of indigenous buffalo at Pirojpur and Barguna are presented in table-1. The table shows that, the average lactation length was 286.12 ± 11.27 days and 290.44 ± 10.92 days in Pirojpur and Barguna, respectively. The findings of the present study were showed the similarity with the findings of Ranjan *et al.*, (1989) who found that the lactation period of Murrah and Nili-Ravi was 272 and 275 days respectively. Faruque and Amin (1994) mentioned that the lactation length of indigenous buffaloes in the coastal area was 270 days.

Milk Yield

The average milk yield of indigenous buffalo at Pirojpur and Barguna are presented in table-1. The table shows that, the average milk yield is 3.43 ± 0.744 kg and 3.33 ± 0.68 kg respectively in Pirojpur and Barguna. In the present study the average daily milk yield was more or less similar to the findings of Shabede *et al.*, (1993), they reported that daily average milk yield was 3.5 kg.

Gestation Period

The average gestation period of indigenous buffalo at Pirojpur and Barguna are presented in table-1. The table shows that, the average gestation period is 319.12 ± 4.69 days and 319.70 ± 5.93 days respectively in Pirojpur and Barguna. El-Sheikh and Mohamed (1967) found that the gestation period of Egyptian buffalo was 316.70 ± 0.19 days. Joshi *et al.*, (1968) showed that the length of gestation in Indian buffaloes averaged 308 ± 9.6 days. On the other hand, Xiao (1989) mentioned that Chinese buffaloes have average pregnancy length of 321 days (306-331). So, the findings of the present study were more or less similar to the findings of various authors as mentioned above. The data collected from buffalo owners are more or less similar to the scientific study.

Birth weight

The average birth weight of indigenous buffalo at Pirojpur and Barguna are presented in table-1. The table shows that, the average birth weight is 24.21 ± 4.00 and

24.12 ± 3.60 kg respectively in Pirojpur and Barguna. In the present study the birth weight of indigenous buffalo calves were more or less similar to the findings of Chantalakhana *et al.*, (1984) who reported that the average birth weight of swamp male and female calves are 28.60 and 26.97 kg, respectively in Thailand. Hussen (1990) reported that the average birth weight of indigenous buffaloes were 26.74 ± 2.4 kg in Tangail district. Faruque and Amin (1994) mentioned that the average birth weight of indigenous buffaloes of the coastal areas of Bangladesh was 22.00 ± 3.50 kg which was almost similar to the findings of presented study.

Age at first calving

The average age at first calving of indigenous buffalo at Pirojpur and Barguna are presented in table-6. The table shows that, the average age at first calving is 50.88 ± 1.71 and 51.00 ± 1.80 months respectively in Pirojpur and Barguna. In the present study, the age at first calving of indigenous buffaloes were more or less similar to findings of Fadzil (1969) conducted an experiment on swamp buffalo in Malaysia under village condition and found that the minimum age at first calving was 3 years, 3 months and 26 days. Shah *et al.*, (1987) found that the average age at first calving of rural Nili-Ravi buffaloes in Punjab was 45.84 ± 0.19 months. On the other hand, Abeygunawardena *et al.*, (1995) in their experiment showed that the average age at first calving of Surti, Murrah, Nili-Ravi and Lankan buffaloes (Local) were 51.80, 55.00, 52.10 and 44.90 months respectively.

Post partum Heat Period

The average post- partum heat period of indigenous buffalo at Pirojpur and Barguna are presented in table-1. The table shows that, the average post partum heat period is 153.30 ± 6.13 and 153.44 ± 6.78 days respectively in Pirojpur and Barguna. El-wishy and El- sawaf (1971) observed that the first post partum estrus was 146.2 days. Rao *et al.*, (1973) described that the mean post partum heat interval was 125.73 days (Range 121-149 days). On the other hand, Liu *et al.*, (1985) reported that post-partum heat period for triple crossbred, Nili-Ravi, Murrah, and Indigenous were 70.0 ± 27.8 ,

127.9±107.2, 94.7±82.7 and 30-169 days respectively. Parvez *et al.*, (1994) found that the post partum heat interval average was 171.79±4.01 days. So, the findings of the present study were more or less similar to the findings of various authors as mentioned above.

Calving interval

The average calving interval of indigenous buffalo at Pirojpur and Barguna are presented in table-1. The table shows that, the average calving interval is 547.92±10.88 and 547.24±14.32 days respectively in Pirojpur and Barguna. The findings of the present study were more or less similar to the findings of El-Sheikh and Mohamed (1967) who found that first calving interval of Egyptian buffalo was 484.74±2.86 days. Fadzil (1969) carried out an experient on swamp buffalo in Malaysia under village condition and found that calving interval was 639 days. Parera *et al.*, (1987) found that average calving interval of indigenous buffaloes in Srilanka was 384.9±62.9 days. The calving interval ranged from 329 to 816 days. The findings of present study were almost similar.

CONCLUSION

In socio-economic aspects of Bangladesh we have to improve the productive and reproductive features of buffalo cows in order to improve national economic condition. From small work it is very difficult to give precise conclusion. Further work is suggested to collect more information regarding this line. Although it is difficult to come on a clear cut conclusion but data collected in this experiment will be helpful for future research and also give a guide line for buffalo development in Bangladesh.

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