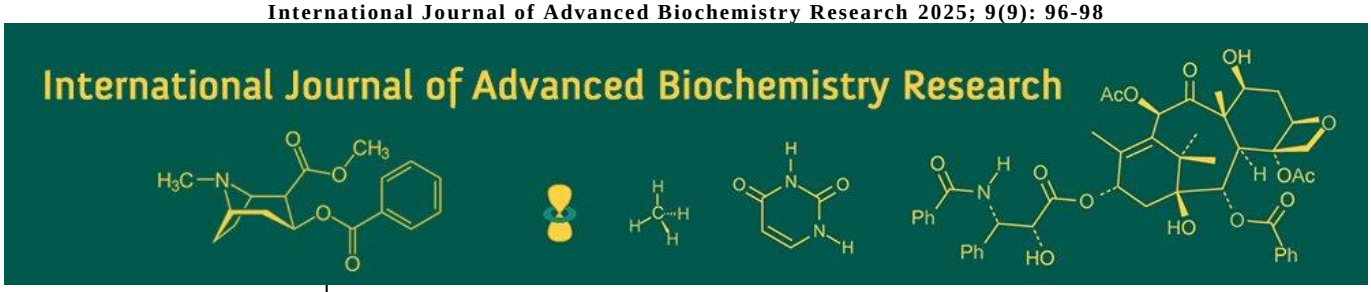

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Performances of Murrah buffalo cows under semi-intensive system of rearing at lower Brahmaputra Valley zone of Assam

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Abstract
Murrah buffalo is one of the best dairy buffalo breeds in India. The success of any dairy farm depends upon efficient productive and reproductive performances of its dairy animals. Various factors like genetic and non-genetic factors influence its performance potential of Murrah buffalo. Performance traits like 305 days milk yield, peak milk yield, lactation length, dry period, birth weight of calf, calf mortality rate, age at first calving, service period, calving interval, number of services per conception and conception rate of Murrah buffalo under the present study were reported as 1370±51.40 kg, 8±1.15 kg, 315±6.5 days, 180±16.5 days, 38±0.55 kg, 7-10%, 52±1.20 months, 150±15.5 days, 480±20 days, 1.4±0.50 and 80%, respectively. All the productive and reproductive traits of Murrah buffalo under the present study will serve as standard and hence can be used as a reference at a glance for Murrah buffalo farming in Assam.

Keywords: Productive, reproductive, performances, Murrah buffalo and mortality

Introduction
Buffalo farming as a dairy animal is gaining popularity among the masses. It contributes more than 50% of the total milk production in India. In this aspect, the finest dairy breed, Murrah buffalo cow can be adopted for milk production. Introduction of high yielding breed like Murrah buffalo in milk deficient state like Assam can bridge the gap of milk requirement. Besides, there is a huge gap in their managemental practices, economic output, production and reproduction performances. It has been observed that agro-climatic condition of the regions affects the production and reproduction performances of dairy animals. Moreover, the literature on performances of Murrah buffalo cows in Assam under semi-intensive system is not available. Hence, the present study was undertaken to study the productive and reproductive performances of Murrah buffalo cows under semi-intensive system of rearing under Lower Brahmaputra Valley Zone of Assam. These findings can act as package for scientific rearing of Murrah buffalo cows in Assam under semi-intensive system.

Materials and Methods
The study was conducted at Murrah Buffalo Farm, AAU-ZLRS, Mandira from April, 2019 to March, 2025 which falls under the Lower Brahmaputra Valley Zone (LBVZ) of Assam. Forty numbers (40) of Murrah buffalo cows of 2nd to 3rd lactation were selected for the study from 2019 to 2025. The animals are maintained in semi-intensive system where animals are let loose in the morning after milking and in the evening after grazing the animals return back to the shed. Natural method of breeding was followed. Performance traits like 305 days milk yield, peak milk yield, lactation length, dry period, birth weight, calf mortality rate, age at first calving, service period, calving interval and conception rate of Murrah buffalo cows were recorded and analysed. The data so generated was analysed for descriptive statistics using SPSS software as presented in the table (1) and (2).

Results and Discussions

From the present study, the productive and reproductive performance of Murrah buffalo cows, reared at AAU-ZLRS, Mandira under the agro-climatic zone of Assam was analysed for the first time ever. It was found that 305 days milk yield, peak milk yield, lactation length, dry period, birth weight, calf mortality rate, age at first calving, service period, calving interval, number of services per conception and conception rate of Murrah buffalo under the present study were reported as 1370±51.40 kg, 8±1.15 Kg, 315±6.5 days, 180±16.5 days, 38±0.55 kg, 7-10%, 52±1. 20 months, 150±15.5 days, 480±20 days, 1.4±0.50 and 80%, respectively.

In the present study, mean body weight of Murrah buffalo calf at birth was found to be 38±0.55 kg which is higher than the findings of Christa *et al*., 2015 **(**27.7±0.13 kg) [5]. Lactation length of Murrah buffalo cow was observed as 315±6.5 days which is higher than the findings of Suresh *et al*., 2004 (299.91±5.01days) [15] and Thiruvenkadan *et al*., 2014 (312.8±5.7 days) [16]. It was seen that Lactation length was mainly influenced by the parity of lactation. It was found that 305 day milk yield in Murrah Buffalo was 1370±51.40 which is much lower than the findings of Pawar *et al*., 2012 (2147.6±87.06 kg) [13]. Peak milk yield was found to be 8±1.15 kg which is lower than the study by Suresh *et al*., 2004 (13.97±1.13) [15]. The average Dry Period was found to be 180±16.5 days which is much lower than the findings of Thiruvenkadan *et al*., 2014 (230.2±4.9 days) [16] and Thiruvenkadan *et al*., 2010 (250.5±4.5 days) [17]. Dry period was seen to be affected by season of birth. Mortality of calves in Murrah buffalo was found to be 7-10% which is lower than the findings of Abhi *et al*., 1973 (29.1% to 39.8%) [1] and Martin *et al*., 1973 (20%) [12]. The cause of mortality in Murrah buffalo calves may be affected by many factors like general debility, respiratory problems, digestive problems and urinary problems, etc.

In the present study, Age at First Calving of Murrah Buffalo cow was found to be 52±1. 20 months which is higher than the report given by Gogoi *et al*., 1985 (1216.64±17 days) [8] and Kumaravel *et al*., 2006 (47.1±0.6 months) [11]. It corresponds to the similar findings by Thiruvenkadan *et al*., 2010 (51.9 months±0.8 months) [17] . Age at First Calving in Murrah buffaloes ranged from 48 to 55 months. It was influenced by period of calving, season of birth and herd size. Service period was found to be 150±15.5 days which is in contrast to the findings of Jamuna *et al*., 2013 (139.91±2.96 days) [10] and Thiruvenkadan *et al*., 2014 (225.0±5.5 days) [16]. Service period was affected by season, parity and herd. Number of services per conception in Murrah buffaloes was found to be 1.4±0.50. which corresponds to the similar findings by Dehuri *et al*. ., 1987 (1.73±0.00) [7] and in contrast to the findings by Yadav *et al*., 1983 (3.74±0.26 days) [18]. It ranged from 1-3. Conception rate in Murrah buffaloes was found as 80% which is higher than the findings by Sarkar *et al*., 2005 (33.19%) [14]. It might be affected by season. Gestation period was found to be 310±2 days which ranges from 310-315 days. Similar findings was reported by Bhave *et al*., 2018 (308.68±0.16 days) [4]. Calving interval was found to be 480±20 days which is similar to the findings of Thiruvenkadan *et al*., 2014 (532.8±5. days)`16]. Calving interval in Murrah buffaloes might be affected by period of calving.

Table 1: Productive traits of Murrah Buffalo cows

Particulars	Mean (µ)±SE	Range
305 day milk yield (kg)	1370±51.40	1168-1425
Peak yield (kg)	8±1.15	6-10
Lactation length (days)	315±6.5	300-395
Lactation milk yield (kg)	1417.50±45.2	1349-1585
Dry period (days)	180±16.5	140-195
Mortality of Calves (%)	-	7-10%
Birth weight of calves (Kg)	38±0.55	36-45

Table 2: Reproductive traits of Murrah Buffalo cows

Particulars	Mean (µ)±SE	Range
Age at First calving(months)	52±1. 20	48-55
Service period (days)	150±15.5	130-210
Service per conception	1.4±0.50	1-3
Conception rate (%)	80	70-90
Gestation period (days)	310±2	310-315
Calving interval (days) days	480±20 days	365-510

Conclusion

The performance of Murrah buffalo cows depends upon many factors viz. managemental practices adopted, sires used for breeding, environmental conditions and variations in feed and fodder availability. In the present study, these factors had significant impact on the productive and reproductive performances of Murrah Buffalo under agro-climatic condition of Assam. It is therefore, necessary to give emphasis on improvement in rearing practices and incorporation of rich genetic germ-plasm. The present study will be the leading example for scientific Murrah buffalo dairy farming in Assam for increasing milk production in the state.

References

1. Abhi HL, Nagpal NP, Sharma TL, Grewal AS. A study of the breeding behaviour of Murrah buffaloes and their breeding efficiency through artificial insemination under farm conditions. Indian Journal of Dairy Science. 1973;26:107-113.
2. Afzal M, Javid MH, Anjum AD. Calf mortality: season pattern, age distribution and causes of calf mortality. Pakistan Veterinary Journal. 1983;3(1):30-33.
3. Babu DS. Production performance of Murrah buffaloes under organized dairy farm production system in West Godavari district of Andhra Pradesh. Indian Journal of Applied Research. 2013;3(8):674-675.
4. Bhave KG, Khadse JR, Mangurkar BR, Gaundare YS, Phadke NL, Potdar VV. Effect of genetic and environmental factors on gestation length of graded Murrah buffaloes in field condition. International Journal of Pure and Applied Bioscience. 2018;6(6):449-454.
5. Christa Charlini B, Sinniah J. Performance of Murrah, Surti, Nili-Ravi buffaloes and their crosses in the intermediate zone of Sri Lanka. Livestock Research for Rural Development. 2015;27(3):1-8.
6. Dechow CD, Goodling RC, Rhode SP. The effect of sire selection on cow mortality and early lactation culling in adverse and favorable cow survival environments. Preventive Veterinary Medicine. 2012;103:228-233.
7. Dehuri JK, Nayak JB. Some preliminary studies on reproductive performance of Murrah buffaloes in

coastal and hilly tract of Orissa: a note. Indian Journal of Animal Production and Management. 1987;3:32-34.
8. Gogoi PK, Johar KS, Singh A. Factors affecting age at first calving in Murrah buffaloes. Indian Veterinary Journal. 1985;62:1058-1062.
9. Gogoi PK, Johar KS, Singh A. Factors affecting dry period in Murrah buffaloes: a note. Indian Veterinary Journal. 1986;63:340-341.
10. Jamuna V, Chakravarty AK, Patil CS, Mahajan AC, Dash S, Vohra V. Decline in reproductive performance in high producing Murrah buffalo. Journal of Animal Research. 2013;3(2):203-208.
11. Kumaravel N, Murugan M, Balagangatharathilagar M, Gopi H, Sivakumar T. Study on the production and reproduction traits of Murrah buffaloes in an organized farm in Tamil Nadu. Livestock International. 2006;10:4-6.
12. Martin SW, Wiggin. Perinatal diseases. Am J Vet Res. 1973;34:1027. Quoted by Blood DC. Veterinary Medicine. 8th ed. London: ELBS; 1994. p. 107-112.
13. Pawar HN, Kumar GR, Narang R. Effect of year, season and parity on milk production traits in Murrah buffaloes. Journal of Buffalo Science. 2012;1(1):122-125.
14. Sarkar U, Gupta AK, Yadav P, Mohanty TK, Raina VS. Factors affecting conception rate in Murrah buffaloes. Journal of Dairying, Foods and Home Science. 2005;24:96-100.
15. Suresh R, Bidarkar DK, Gupta BR, Rao BS, Sudhakar K. Production and reproduction performance in Murrah buffaloes. Indian Journal of Animal Science. 2004;74:315-318.
16. Thiruvenkadan AK, Panneerselvam S, Murali N, Selvam S, Saravanakumar VR. Milk production and reproduction performance of Murrah buffaloes of Tamil Nadu, India. Buffalo Bulletin. 2014;33(3):405-412.
17. Thiruvenkadan AK, Panneerselvam S, Rajendran R, Murali N. Analysis on the productive and reproductive traits of Murrah buffalo cows maintained in the coastal region of India. Applied Animal Husbandry and Rural Development. 2010;3:1-7.
18. Yadav KN, Rathi SS, Ram S, Singh R. Estimation of genetic and phenotypic trends in Murrah buffaloes under progeny testing programme. Indian Journal of Dairy Science. 1983;36:330-332.