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PRODUCTIVE PERFORMANCES OF SWAMP BUFFALOES OF ASSAM

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ABSTRACT

A survey was carried out to study productive performances of swamp buffaloes of Assam. Average lactation length, lactation milk yield, peak yield, and days to attain peak yield were found to be 237.06 ± 0.74 days, 448.38 ± 1.67 kg, 3.41 ± 0.02 kg and 54.16 ± 0.19 days respectively. Lactation length was found to be affected significantly by type of animal, location and season of calving while lactation order exerted non significant effect. Lactation milk yield and peak yield was found to be affected significantly by type of animal, location, lactation order and season of calving. Days to attain peak yield was found to be affected significantly only by season of calving while location, type of animal, lactation order exerted non significant effect.

Key words : Swamp buffalo, Assam, Productive traits

The majority of the buffaloes in Assam is swamp type and mostly reared under *khuti* system of management[1]. Their production potentiality is low. The skin colour of the buffaloes is grey at birth but becomes slate blue in adults. The hoof, horn and hair normally have lighter shade. The usual description is dark grey. They have long and curved horns. In *khuti* system, buffalo herds are reared in inaccessible areas such as in forest or in river banks where abundant natural green grasses are available throughout the year. The sheath of the male buffalo of Assam adheres close to the body except at the umbilical end. Albinoid buffaloes are also found in Assam.

The farmers milk their buffaloes once in the morning and allow them to graze in the forest or nearby grazing lands throughout the day.

MATERIALS AND METHODS

A survey was carried out to study the productive performances of swamp buffaloes of Assam and data were collected from the available breeding records, personal observations and verbal communications with the individual owners of Kamrup, Nagaon and Darrang districts of Assam. A total of 324 observations for lactation milk yield, lactation length, peak yield and days to attain peak yield were recorded for this study. Out of total 324 observations 115, 108 and 101 were recorded from Nagaon, Kamrup, and Darrang districts of Assam respectively. The data obtained were classified as follows:

1) Types – The data were classified into 3 groups according to types of swamp buffaloes

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available in Assam, viz. the 'Asomia', the 'Khaspuria' and the 'Asomia x Khaspuria' and designated as A, K and C.

2) Lactation – The data were classified into five lactation orders and designated as L_1, L_2, L_3, L_4, and L_5

3) Season – The data were classified into four seasons and designated as S_1, S_2, S_3 and S_4

The data were subjected to statistical analysis as per the standard methods[17].

RESULTS AND DISCUSSION

Least squares means and their standard errors of different factors affecting various production parameters (lactation length, lactation milk yield, peak yield and days to attain peak yield) are presented in Table 1.

Lactation length – Statistical analysis revealed significant effect (P<0.05) of type of animal and highly significant effect (P<0.01) of location and season of calving on lactation length while lactation number exerted non significant effect. The swamp buffaloes of Darrang district had lower lactation length than the swamp buffaloes of Nagaon and Kamrup district. Certain worker[12] reported significant effect of location on lactation length while other workers[1,15] reported non significant effect of location on lactation length. A few workers[1,15] reported non significant effect of lactation order on lactation length of different breeds/varieties of buffaloes. DMRT revealed that the lactation length was longer in post monsoon calvers (S_3) and shorter in monsoon calvers (S_1). The effect of season of calving on lactation length was reported by few workers[12] in Surti buffalo and other worker[18] in swamp buffaloes of Assam while certain workers[1,14] in swamp buffaloes of Assam reported no effect of season of calving on lactation length.

Lactation milk yield – A similar lactation milk yield was reported by a worker[14] while another worker [18] reported higher lactation milk yield in swamp buffaloes of Assam. Statistical analysis revealed significant effect (P<0.05) of type and highly significant effect (P<0.01) of location, lactation order and season of calving on lactation milk yield. Certain few workers[16,1] in swamp buffaloes of Assam observed non significant effect of location on lactation milk yield. In the present findings, lactation milk yield was observed to be increased consistently from first lactation to 3rd lactation and thereafter it declined gradually. Similar findings were also observed by workers[3,14] in Surti buffaloes and swamp buffaloes of Assam. In contrary to the present findings higher milk yield was observed in fourth lactation by a worker [6] in swamp buffaloes of Assam and in sixth lactation by other workers[10] in Marathawadi buffaloes. Lactation milk yield was found to be significantly higher in post monsoon calvers (S_3). Certain workers[11] observed higher lactation milk yield in summer calvers of Murrah buffaloes. A worker [14] observed non significant effect of season of calving on lactation milk yield in swamp buffaloes of Assam.

Peak yield – Few workers [9,18,2] reported peak yield as 4.18 ± 0.05, 4.06 ± 0.06 and 4.08 ± 0.06 kg respectively in swamp buffaloes of Assam. Statistical analysis revealed highly significant effect (P<0.01) of location, type of buffaloes, lactation order and season of calving on peak yield. The significant effect of lactation order and season of calving was reported earlier by the workers [4,9,18] in Surti buffaloes; Murrah, Surti and swamp buffaloes; and swamp buffaloes of Assam respectively. Certain workers [8] observed significant effect while other workers [5,13] reported non significant effect of season of calving on peak yield in different Indian breeds of buffaloes.

Days to attain peak yield – Few workers [6,18] in swamp buffaloes of Assam reported a slightly longer peak period while other workers [7,4] reported much shorter peak period in Kujang

buffaloes and Surti buffaloes respectively. Statistical analysis revealed non significant effect of location, type and lactation order while season of calving exerted highly significant effect on days to attain peak yield. DMRT revealed days to attain peak yield of post monsoon calvers (S_3) was shortest with 49.68 ± 0.28 days followed by winter calvers (S_4) with 53.03 ± 0.31 days. The monsoon calvers (S_1) took longest time to attain peak yield with 58.39 ± 0.56 days.

Table1. LSM ± SE of Lactation milk yield, Lactation length, Peak yield and Days to attain peak yield of swamp buffaloes of Assam as affected by location, type, lactation order and season of calving

Effect	No. of observation	Lactation Milk yield (kg)	Lactation Length (days)	Peak yield (kg)	Days to attain peak yield (days)
μ	324	448.38 ±1.67	237.06±0.74	3.41±0.02	54.16±0.19
Location					
Nagaon	115	471.10^{a}±2.49	241.63^{a}±1.10	3.72^{a}±0.03	53.87±0.29
Kamrup	108	469.07^{a}±2.61	242.51^{a}±1.15	3.70^{a}±0.03	54.25±0.03
Darrang	101	404.10^{b}±2.68	227.04^{b}±1.18	2.80^{b}±0.03	54.36±0.31
Type					
A	126	443.76^{a}±2.38	234.91^{a}±1.05	3.31^{a}±0.03	54.25±0.23
K	99	459.26^{b}±2.68	241.83^{b}±1.18	3.56^{b}±0.03	54.27±0.21
C	99	442.14^{a}±2.74	234.44^{a}±1.21	3.34^{a}±0.03	53.96±0.32
Lactation					
L_1	68	422.75^{a}±3.16	234.66±1.39	3.12^{a}±0.04	54.33±0.37
L_2	77	456.38^{b}±2.96	236.89±1.31	3.39^{b}±0.03	54.25±0.34
L_3	72	467.11^{c}±3.18	238.28±1.40	3.70^{c}±0.04	53.80±0.36
L_4	62	452.06^{bd}±3.32	236.53±1.47	3.56^{d}±0.04	54.25±0.38
L_5	45	443.64^{bed}±3.86	238.93±1.71	3.27^{b}±0.04	54.16±0.45
Season					
S_1	28	423.48^{a}±4.82	227.54^{a}±2.13	3.00^{a}±0.05	58.39^{a}±0.56
S_2	93	445.04^{b}±2.64	235.78^{b}±1.17	3.44^{b}±0.03	55.54^{b}±0.30
S_3	113	471.16^{c}±2.39	243.97^{c}±1.06	3.69^{c}±0.03	49.68^{c}±0.28
S_4	90	453.88^{d}±2.68	240.94^{cd}±1.18	3.48^{b}±0.03	53.03^{d}±0.31

NB : Subclass means having different superscript differed significantly (P<0.05)

CONCLUSION

Genetic improvement of buffalo population of Assam is a must to meet the ever increasing demand of milk and work power of the state. Prior to formulating a meaningful buffalo improvement policy for the state of Assam, it is necessary to gather the live data on physical, productive and reproductive performances, availability of fodder round the year at field level. Such data will also help to conserve this unique buffaloes of Assam.

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