

GROWTH PERFORMANCE OF SWAMP BUFFALO CALVES HOUSED UNDER DIFFERENT ROOF COVERINGS*

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ABSTRACT

An experiment was undertaken at 'Network Project on Swamp Buffalo', College of Veterinary Science, Assam Agricultural University, Khanapara, Guwahati-22 to study the growth performance of swamp buffalo calves of Assam housed under different roof coverings. Eighteen growing swamp buffalo calves (of either sex) of about 5-6 months of age were selected and housed under three different roof coverings with six calves under each roof covering. The experimental groups, viz. T₁, T₂ and T₃ were allocated to asbestos roof covering, asbestos roof covering with bamboo ceiling, and thatch roof covering respectively. The calves were provided with *ad libitum* chaffed green forages along with concentrate mixture at the rate of 0.5 per cent of their body weight. No significant difference was observed in growth performance, daily body weight gain, linear body measurements, average daily feed and water intake among the calves of the three groups.

Key words : Swamp buffalo, growth performance, different roof coverings

Buffaloes of Assam are basically swamp type and they are more or less adapted to hot and humid climates of North Eastern Region of India. The buffaloes are usually reared under three

systems, viz. semi-domesticated, nomadic and settled and are used for cultivation of paddy and other cereal crops, rural transport, pulling of carts, extracting juice from sugarcane, extracting oil from seeds and threshing paddy etc.

Besides these, there exists a tremendous scope for exploitation of male calves in terms of meat production. In the tropical countries there is marked reduction in feed intake, growth rate and overall productivity of buffaloes due to heat stress particularly in summer as buffaloes have poor heat dissipation mechanism. Efficiently designed sheds can lessen the thermal stress to a marked extent

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enhancing feed intake, growth rate and overall productivity of buffaloes. Therefore, an attempt has been made to study the growth performance of swamp buffalo calves of Assam housed under three different roof coverings.

MATERIALS AND METHODS

The experiment was conducted from March to May, 2007 at 'Network Project on Swamp Buffalo', College of Veterinary Science, Assam Agricultural University, Khanapara, Guwahati-22. Eighteen growing swamp buffalo calves (of either sex) of about 5-6 months of age were randomly selected and housed under three different roof coverings with six calves in each on the basis of similarity of their age and average body weight. The experimental groups, *viz.* T₁, T₂ and T₃ were randomly allocated to asbestos roof covering, asbestos roof covering with bamboo ceiling, and thatch roof covering respectively. The calves were provided with *ad libitum* chaffed green forages in the morning and evening along with concentrate mixture at the rate of 0.5 per cent of their bodyweight. The individual body weight and linear body measurements (length, heart girth and height at withers) of calves under each treatment were recorded in the morning before providing feed and water at the beginning of the experiment and thereafter at fortnightly intervals throughout the entire length of experiment.

RESULTS AND DISCUSSION

The fortnightly average body weight of calves under different roof coverings was presented in Table 1. The average daily body weight gain of calves was found as 0.187 ± 0.01 , 0.191 ± 0.01 and 0.193 ± 0.01 kg for T₁, T₂ and T₃ groups respectively. The T₃ group of calves revealed higher daily body weight gain than T₁ and T₂ group of

calves. However, the difference was found to be non significant. This was in close agreement with the findings of earlier workers^{2,6}. The highest body weight gain in calves reared under thatch roof covering could be attributed to higher intake of green fodder and thermal comfort of the shed as buffalo calves have poor heat regulatory mechanism.⁵

There was no significant difference in body length, height at withers and heart girth of the calves among the treatment groups. However, slightly higher values were observed in body measurements of the calves reared under T₃ than T₂ and T₁. Similar findings were also reported by workers⁴ in crossbred calves. T₃ groups of calves revealed higher body length, height at withers and heart girth than T₂ and T₁ which might be attributed to higher feed consumption of calves with a positive correlation of growth rate.

No significant difference was observed in respect of green fodder consumption among the treatment groups. However, higher value for green fodder consumption was recorded in T₃ group of calves, while the lowest value was observed in T₁ group. Earlier worker⁷ also reported highest dry matter intake in crossbred calves reared under thatch roof covering during summer. Higher amount of concentrate consumption was observed in T₂ and T₃ group of calves as compared to T₁ without any significant difference. The present finding is corroborated well with the findings of other workers^{1,4}. Highest water consumption was recorded in T₁ group of calves, while the lowest value was recorded in T₃ group without any significant difference. Earlier workers³ also reported that the voluntary water intake was not significantly influenced by different housing systems.

Table 1 : Fortnightly average body weight (Kg) of calves under different treatments

Fortnight	T ₁	T ₂	T ₃
0	42.61 ± 1.71	42.58 ± 2.44	42.82 ± 2.00
1 st	45.34 ± 1.67	45.34 ± 2.53	45.53 ± 2.12
2 nd	48.10 ± 1.71	48.11 ± 2.59	48.27 ± 2.18
3 rd	50.87 ± 1.68	50.97 ± 2.62	51.00 ± 2.19
4 th	53.70 ± 1.78	53.88 ± 2.66	53.94 ± 2.31
5 th	56.55 ± 1.76	56.73 ± 2.70	56.97 ± 2.46
6 th	59.44 ± 1.77	59.73 ± 2.67	60.12 ± 2.39
Overall	50.94 ± 0.83	51.05 ± 1.20	51.20 ± 1.19

CONCLUSION

It may be concluded that the roof materials like thatch, bamboo ceiling can improve the growth rate and feed intake of young buffalo calves in hot humid condition of Assam. The sheds of thatch

and asbestos roof covering with bamboo ceiling can protect the buffaloes from thermal stress during summer and can impose a congenial physical environment for the proper growth and development of calves with higher feed intake.

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