

"Growth Studies on Male Surti Buffalo Calves for Meat Production"

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The study was undertaken to find out whether Sen's (1971) standard of feeding digestible crude protein can meet the optimum growth of Surti male buffalo calves and to see whether by reducing the DCP level by 20 per cent the growth is not adversely affected and the buffalo calves can be economically reared for meat production. Eighteen growing Surti male buffalo calves ranging between 6-9 months of age and 48-68 kg body weights were selected for this study. They were grouped into 3 groups of 6 calves each (3 castrated and 3 uncastrated). The first group (T_1) was fed DCP as suggested by Sen's (1971) standard. In the second group (T_2) 80 per cent DCP was fed and in the third group (T_3) DCP was fed according to T_1 but 20 per cent of it was replaced by urea. The TDN were kept the same in all the three groups. The experiment was conducted for 44 weeks. During this period, weekly body weights were recorded and 4 weekly body measurements were taken. Monthly changes in the blood constituents were also recorded. Post prandial changes in the major rumen constituents were estimated and three digestibility and balance trials were conducted on all the calves. Four calves (2 castrated and 2 uncastrated) were slaughtered from each group to find out the dressing percentage and production of different body parts and the meat quality was also evaluated.

The study suggested that 100 per cent DCP feeding resulted in significantly higher body weight gains. The lower level of DCP feeding resulted in somewhat lower gain as compared to 100 per cent DCP fed group but it was higher than urea group (T_3). When cost per kg gain was taken into account then it was observed that urea feeding and lower level of DCP feeding is costlier as compared to 100 per cent DCP feeding. There was no significant difference in growth of castrated and uncastrated calves. The increase in heart girth and length was significantly higher in 100 per cent DCP fed group as compared to urea fed group (T_3) but compared to T_2 it was non significantly higher. The increase in height was not significantly affected due to treatments.

Results on haematological and chemical constituents indicated that the haemoglobin and total leucocyte counts were higher in 100 per cent DCP fed group as compared to other groups, but the differences were non significant. The serum calcium, phosphorus, magnesium and protein nitrogen contents were not affected by different treatments imposed. Urea nitrogen was significantly higher in urea fed group as compared to lower level of DCP feeding. Effect of urea feeding on urea nitrogen was more pronounced during the early stages of feedings. The results thus indicated that urea incorporation in the ration of growing calves should be avoided and if required it should be gradually increased.

The data on rumen studies indicated that the P_H of strained rumen liquor was significantly higher in urea fed group as compared to non urea fed groups (T_1 and T_2). Urea feeding resulted in significantly lower rumen volatile fatty acid production as compared to

non urea fed groups. The ammonia nitrogen production in rumen was significantly higher in urea fed group as compared to non urea fed groups. Total nitrogen and non protein nitrogen concentration of strained rumen liquor were higher in 100 per cent DCP fed group as compared to lower level of DCP or urea fed groups. The soluble nitrogen, feed nitrogen and protozal nitrogen concentration in strained rumen liquor were not significantly affected due to different treatments. The hourly changes of these different SRL constituents showed significant variations during different periods. The dry matter intake kg/kg w^{0.75} per day indicated higher dry-matter intake in lower level of DCP feeding as compared to higher level of DCP and urea feeding but the differences were non significant.

The digestibility of crude protein was significantly higher in 100 per cent DCP fed group as compared to lower level of DCP feeding and the value was also higher as compared to urea fed group but the difference was non significant. The digestibilities of E. Ext., C.Fibre, N.F.E. and Organic matter were

not affected due to treatments. The effect of castration did not show any definite trend in digestibilities of different nutrients. The nitrogen, phosphorus and calcium balances were non significantly affected.

The quality of meat judged by 9 judges for flavour, tenderness and juiciness indicated higher scores for lower level of DCP fed group followed by 100 per cent DCP and urea fed group. Moreover, the meat flavour was better in castrated calves as compared to uncastrated but the differences were non significant. The dressing percentage, shrinkage in body weights and per cent proportions of body parts except blood and head were not affected significantly due to different treatments. The effect of castration on these parameters were also not significant. The moisture, protein, fat and phosphorus contents of meat were not significantly affected due to different treatments.

The overall results indicated that the growing male buffalo calves should be fed as per Sen's (1971) standard of DCP requirement and urea in-corporation should be avoided.