



Nutrient digestibility and live weight change in yaks fed maize stover based complete feed block during winter

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Yak is a multipurpose high altitude bovid having potential of converting the primary production supplied by cold highland vegetation into valuable products, viz. milk, meat, hide and wool. Under traditional system of rearing yaks, supplementary feeding is rare except for weak or lactating yaks (Chatterjee *et al.* 2003, Ghosh and Buragohain 2004). As a result, general health, production and reproduction performance are severely affected specially during winter season due to herbage deficiency and poor grazing condition (Buragohain *et al.* 2004, Chatterjee 2003). During this period yaks have been reported to loose their body weight. This body weight loss during winter have been largely controlled by supplementing concentrate mixture at organized farm (Pal 1995).

Under field condition at higher altitude supplementing concentrate mixture may not solve the problem as there is wholesome scarcity of green and dry forages as well as concentrate ingredients during winter season. Complete feed blocks (CFB) may be useful to overcome this wholesome nutrient deficiency during winter. The CFB also involves cheaper cost of transportation from production area to scarcity area for obvious reason. Keeping these in view in the present experiment the effect of feeding complete feed blocks (CFB) on dry matter intake (DMI), body weight gain and digestibility of proximate nutrients in yaks have been studied and the values were compared with the group fed diet supplemented with concentrate mixture.

A feeding trial of 6 months duration was conducted at Nyukmadung yak farm (at about 8500 ft above MSL), NRCY, Arunachal Pradesh. Male yaks (20) of similar age group were selected at random and divided into 2 experimental groups. Control group having 10 animals was supplemented with a concentrate mixture along with straw and tree leaves at the ratio of 3: 2: 4 so as to provide 2.5–3.0 kg DM/100 kg body weight as per NRC 1989 for cattle and buffaloes and rest 10 animals were provided with complete feed block composed

of maize stover (60 parts), concentrate (37 parts) and molasses (3 parts) as binding agent prepared in an automatic block making machine at 4000 psi pressure. Monthly individual body weight was recorded for the entire period of experiment. At the end of the feeding trial, a digestibility trial of 7 days duration was conducted to estimate the nutrient utilization. During the feeding and digestibility trial weighed quantity of feed was offered and the residue was recorded. The total faecal output was measured daily of individual animal. The representative samples of feeds and faeces were pooled and analyzed for proximate principles of feeds offered, residue and the dung (AOAC 1990).

The proximate composition (% DM) of the CFB was crude protein 9.54%; ether extract 3.24%; crude fibre 28.37%; nitrogen free extract 50.6% and total ash 9.1. The dry matter intake (DMI) /100 kg body weight were 1.73 kg in control group and 1.52 kg in CFB fed group. There was no statistically significant difference between 2 groups which indicated the potential of complete feed block as maintenance ration. None of the yaks in either groups have been found to loose body weight. The total live weight gain in control group and the CFB groups were 17.32 kg and 16.52 kg, respectively. The difference was statistically nonsignificant. Digestibility of DM, CP, CF and EE were recorded as 61.24±0.84 and 60.93±0.71; 65.13±0.92 and 65.44±0.62; 51.47±1.21 and

Table 1. Body weight gain, dry matter intake and nutrient digestibility in yaks fed normal diet and CFB diet

Particular	Control group	CFB diet group
Initial body weight (kg)	239.83±10.2	241.33±12.24
Final body weight (kg)	257.15±9.58	257.85±15.42
Total live wt. gain (kg)	17.32±1.71	16.52±1.33
Dry matter intake (% body weight)	1.73±0.11	1.52±0.13
<i>Digestibility of nutrients (%)</i>		
Dry matter	61.24±0.84	60.93±0.71
Crude protein	65.13±0.92	65.44±0.62
Crude fiber	51.47±1.21	50.12±1.84
Ether extract	66.34±0.72	65.15±0.98

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50.12±1.84 and 66.34±0.72 and 65.15±0.98 for control group and feed block fed group, respectively. The values for the two groups were quite comparable having no statistically significant difference.

Optimization of all round development of yak depends primarily on providing required nutrition in right proportion at right time. This experiment was carried out to find out, whether the maize stover based feed block can meet up the maintenance requirement of yak as in case of concentrate mixture supplementation during winter season. The findings of the present experiment show that CFB can be fed to yaks in place of diet supplemented with concentrate mixture without any adverse effect on voluntary feed intake digestibility and body weight change. CFB, being prepared with locally available feed ingredients, has been found to be effective for feeding of yak at high altitude at least during winter season when there is acute shortage of feed.

SUMMARY

The study was undertaken to see the effect of feeding complete feed block (CFB) on dry matter intake, body weight change and digestibility of proximate nutrients in yak. The values were compared with the control group fed diet supplemented with concentrate mixture. The CFB was prepared using maize stover (60%), concentrate mixture (37%) and molasses (3%) as binding agent. The dry matter intake (DMI) /100 kg body weight were 1.73 kg in control group and 1.52 kg in CFB fed group. Digestibility of DM,

CP, CF and EE were recorded as 61.24 and 60.93; 65.13 and 65.44; 51.47 and 50.12 and 66.34 and 65.15 for control group and feed block fed group, respectively. The total live weight gain in control group and the CFB groups were 17.32 kg and 16.52 kg, respectively. There was no statistically significant difference between 2 groups for any of the parameter. The findings of the present experiment had shown that CFB can replace the diet supplemented with concentrate mixture without any adverse effect on voluntary feed intake digestibility and body weight change in yaks during winter.

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