

Effect of Feeding Azolla (*Azolla Pinnata*) Based TMR on Growth Performance and Nutrient Utilization in Goats

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Abstract—Sixteen crossbred weaned female goat kids having body weight 12.82 ± 0.65 kg were divided into four experimental groups of four each for a feeding trial of three months. Control group (T_1) was fed total mixed ration consisting berseem hay and concentrate mixture (60:40) as per feeding standards ICAR, 1985. Concentrate mixture comprised of Maize grain (50), groundnut cake (35), wheat bran (12), mineral mixture (2) and common salt (1 part) and had (on %DM) 20.55% CP, 7.83% CF, 4.20% EE, 8.73% ash, 58.69 % NFE, 21.26% NDF and 12.51% ADF. In the total mixed ration (TMR) of groups T_2 , T_3 and T_4 , the concentrate mixture was replaced with sundried azolla on equi-weight basis at 10, 15 and 20% level, respectively. Azolla meal (%DM) contained 22.93% CP, 11.63% CF, 2.82% EE, 15.59% ash, 47.03 % NFE, 40.47% NDF and 32.55% ADF. All diets were is nitrogenous. Mean dry matter intake throughout feeding trial did not differ significantly due to inclusion of sun dried azolla. Up to 15% replacement daily weight gain did not differ significantly. Better FCR was performed by the kids fed 10% sundried azolla (T_2) followed by T_1 (control) and T_3 which among themselves did not differ statistically but was significantly ($P < 0.05$) poor in kids fed 20% sundried azolla. There was net saving of Rs. 7.90 and 5.16 for 1 kg body weight gain by replacing 10 and 15% concentrate mixture with sun dried azolla, respectively. Dry matter digestibility decreased with increasing level of azolla in diet. Digestibility values of CP, OM, CF and NFE were not affected up to 15% azolla incorporation. Daily digestible crude protein intake, total digestible nutrient intake, DCP and TDN% of ration reduced significantly ($P < 0.05$) at 20% sun dried azolla inclusion. It was concluded that dried azolla can be incorporated up to 15 % of the concentrate mixture of kids without any adverse effect.

Keyword: Azolla, Goat, Growth Performance, Nutrient Utilization, TMR.