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Evaluation of On-farm Goat Fattening Using Cowpea Hay with Concentrate in North-western Dry Lands of Ethiopia

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Abstract

An experiment was conducted in Gumara-Maksegnit watershed to evaluate fattening of 36 castrated yearling goats with initial weight of 28.2 kg using cowpea hay and concentrate supplementation with different proportions. The treatments were browsing alone (T1), browsing +100 % concentrate (T2), browsing +100 % cowpea hay (T3), browsing+ 50 % cowpea hay with 50 % concentrate(T4), browsing +25 % cowpea hay with 75 % concentrate (T5) and browsing +75 % cowpea hay with 25 % concentrate (T6) for 105 days. Each animal has free access to browsing and water. Average initial body weight was not different between treatment groups. The mean final weight (Kg), total body weight gain (Kg) and average daily weight gain (g) obtained were 33.88 ± 4.00 , 5.65 ± 1.19 and 62.87 ± 13.24 , respectively. Total body weight gain and average daily body weight gain were significantly different ($p < 0.05$) between treatments. The group fed on browsing plus 75 % concentrate supplement +25 % cowpea and browsing +100 % concentrate had better final body weight, total body weight and average daily body weight gain. The groups fed on browsing +100 % concentrate and browsing +75 % concentrate with 25 % cowpea hay had higher daily feed conversion efficiency while those fed on other feed groups. The highest daily gain from T5 is related to a good nutrient balance available in the commercial concentrate supplement despite the relatively higher crude protein content supplemented with 25 % cowpea hay with 75 % concentrate. Average dry matter intake and feed conversion efficiency were calculated for indoor fed treatment groups (concentrate with cowpea hay fed treatments) only. There was significant difference in average daily dry matter intake (DM) between treatments. Increased supplementation of concentrate with cowpea hay forage increased total DM intake, that treatment groups fed on 75 cow pea hay, 25 concentrate and sole cowpea hay had higher DM intake than the other treatments but the average daily weight gain of the animal is higher for T2 and T5 that means goats fed on concentrate alone and 75 % concentrate with 25 % cowpea hay had better daily weight gain. Therefore based on the results T5 was recommended but as famers point of view T6 was preferred to reduce the concentrate level.

Keywords: Body weight, Cowpea hay, Dry land , Fattening, Goat