

## SUMMARY

An experiment was carried out to assess the effect of supplementing a Panicum hay basal diet with leaves of Madras thorn (*Pithecellobium dulce*), Leucaena (*Leucaena leucocephala*) or Gliricidia (*Gliricidia sepium*) on the quality and quantity of goat manure. Twelve Small East African goats aged eight months on average and weighing 9.7kg ( $\pm 1.52$ ) were randomly assigned to four treatments. Panicum hay fed ad libitum plus 100g of maize bran constituted the control diet. The remaining three treatments consisted of the control diet supplemented with iso-nitrogenous levels of Leucaena, Gliricidia or Madras thorn, respectively. Crude protein concentrations in the forages were 3.5, 21, 23 and 25% for Panicum hay, Gliricidia, Madras thorn and Leucaena, respectively. The supplements were therefore offered at 19.5g DM/kgW<sup>0.75</sup> Madras thorn, 18.6g DM/kgW<sup>0.75</sup> Leucaena and 22.5g DM/kgW<sup>0.75</sup> Gliricidia. Daily total dry matter intake increased significantly ( $P < 0.05$ ). On supplementation from 229 for the control diet to 365, 387 and 398g for the diets supplemented with Madras thorn, Gliricidia and Leucaena, respectively. Animals supplemented with the legumes retained ( $p < 0.05$ ) more N (3.5, 3.6 and 3.7g N/day for Leucaena, Gliricidia and Madras thorn, respectively) than the control treatment (0.6 g N/day). Legume supplementation increased ( $p < 0.05$ ) daily weight gains from 2g per day for the control treatment to 19, 22 and 25g per day for diets supplemented with Gliricidia, Madras thorn and Leucaena, respectively. The effect of supplement on growth rate was not different between the legumes. Goats fed on legume supplements produced ( $p < 0.05$ ) more faeces (135g, 142g and 150g DM per day for goats fed Madras thorn, Gliricidia and Leucaena treatments, respectively) than those on the control diet (92g DM). The daily faecal DM outputs expressed as percentage of body weight were 1.13, 1.27 and 1.30% for the control diet supplemented with Madras thorn, Gliricidia and Leucaena, respectively, as compared with 0.98%, for the control diet alone. Legume supplementation in goats increased ( $p < 0.05$ ) faecal N content from 0.2 to 1.7% but had no effect on the C, P or K contents. Supplementation of a poor quality basal diet with legume forage is therefore recommended since, in addition to improving the performance of goats, it would increase the amount of manure produced and improve its quality.