

Abstract

Two feeding experiments were conducted to evaluate the nutritive value of *Acacia brevispica* and *Leucaena leucocephala* seedpods in terms of chemical composition and liveweight performance. In feeding experiment one (FE-1), 18 calves weighing on average 132 kg and aged five to nine months were used. The treatments comprised of A₁: control-1, B: *Acacia* seedpod meal (ASM) and C₁: *Leucaena* seedpod meal (LSM-1). In feeding experiment two (FE-2), 16 calves weighing on average 131 kg and aged five and half to nine months were used. The treatments were A₂: control-2 and C₂: LSM-2.

Experimental diets were designed to supply isonitrogenous levels of 265 g CP to meet the CP requirement for a predetermined performance goal of 500 g/d. Control calves were given basal hay and wheat bran equivalent to the amount used in formulating ASM and LSM diets. Calves were weighed weekly over five and four weeks in FE-1 and FE-2, respectively. F-test was used to compare experimental groups with the controls.

Chemical analyses of seedpods of *A. brevispica* and *L. leucocephala* showed that contents of CP decline and fibre (NDF and ADF) increase with maturity. Seeds of both *A. brevispica* and *L. leucocephala* contained higher CP, EE and IVDMD, but lower fibre than empty pods. Dry *L. leucocephala* seedpods contained appreciably more tannins than *A. brevispica*. More of the tannins were located in the empty pods.

In FE-1, ADG (g/d) was 486, 250 and 239 for calves on LSM-1, ASM and Control-1, respectively. Calves supplemented with LSM-1 diet had better ADG ($P < 0.01$) than control-1 and ASM supplemented calves. Calves on ASM had superior ADG than control-1, though not significantly ($P > 0.05$). In FE-2, calves on LSM-2 had significantly higher ($P < 0.01$) ADG (559 g/d) than control-2 (276 g/d) confirming the results obtained in FE-1. Intact seedpods of both legume trees had similar digestible energy (DE) contents. However, seedpods of *A. brevispica* used in FE-1 contained only 65% of their seeds and thus had lower contents of DE. The ADG of calves on ASM diet did not reflect the true nutritive value of intact seedpods.

It was concluded that if most seeds are retained, both seedpods are suitable feeds for ruminants, at least for strategic supplementation by smallholder farmers and agro-pastoralists when other feeds are unavailable in the dry season.