

Abstract

The study was conducted at Kenya Agricultural and Livestock Research Organisation, Katumani, Machakos to evaluate the herbage quality of *Brachiaria* grass cultivars in semi arid regions of Eastern Kenya. *Brachiaria* cultivars namely *B. decumbens* cv. Basilisk, *Brachiaria* hybrid Mulato II, four *Brachiaria brizantha* cultivars Marandu, Xaraes, Piata, MG4 and *Brachiaria humidicola* cv Llanero were assessed with reference to their chemical and nutritive composition at 22, 24 and 28 weeks post seedling emergence. Rhodes grass (*Chloris gayana* cv KATR3) and Napier grass (*P. purpureum* cv. Kakamega I) were included as controls. There were significant differences ($p < 0.05$) among the cultivars for crude protein, crude fibre (NDF, ADF and ADL) Ash, Calcium, Phosphorus, Dry Matter Digestibility and Metabolisable energy during the the week 22 and 24 post seedling emergence harvest. At week 28 harvest interval, however, ADL values for all the cultivars were similar and only Marandu was significantly different ($p < 0.05$) in terms of metabolizable energy from the rest. The mean CP content of the grasses decreased from 11.1% at week 22 to 6.3% at harvest week 28 harvest intervals. MG4, Mulato II and Xaraes were the only grasses able to meet minimum CP (7.0%) requirement for rumen microbial function throughout the harvest period. Ash and phosphorus values decreased whereas Calcium content increased for all the cultivars during the harvest intervals, with Mulato II recording the highest ash (15%) content during this period. *Chloris gayana* KATR3 recorded highest average NDF (72.9%), ADF (48.1%) and ADL (6.1%) content during this period. Xaraes, Marandu and Mulato II were the only cultivars able to achieve the highest metabolizable energy of 7.0 MJ/kg DM recorded for the grass cultivars throughout the harvest intervals. These results indicate that *Brachiaria* grasses can be a good source of forage for livestock and a boost to the forage resource base in the semi arid regions of Kenya. Further research is needed to quantify their productivity in both dry and wet periods and to assess the effect of feeding on animal production performance.