

Voluntary Feed Intake of Dorper Sheep Fed on *Brachiaria brizantha* cv Toledo, *Brachiaria decumbens* cv Basilisk and *Eragrostis superba* Hay

Nguku S.A.^{1,*}, Musimba, N.K.R.¹, Mganga, K.Z.¹

¹ Department of Agricultural Sciences, School of Agriculture and Veterinary Sciences, South Eastern Kenya University, Kenya

*Email of corresponding author: susannguku2008@gmail.com

Abstract

Livestock production faces challenges of poor feed supply year round. Climate smart *Brachiaria* grass species whose animal production potential is little known may offer nutrients to ruminant livestock long into the dry season. The study sought to evaluate the chemical composition and voluntary feed intake of *B. brizantha* cv Toledo and *B. decumbens* cv Basilisk hay with *E. superba* to serve as controls. Nine 18 months old Dorper rams were stall fed the three diets using a randomized complete block design for 21 days. The sheep were weighed on day 1 before being introduced to the diets and in the morning of day 22. Samples of feed offered,orts and faeces collected from day 14 to 22 (7 days) were dried in a forced air oven at 100°C for 24 hours then milled using a hammer mill with a 2mm sieve before being analysed for their chemical composition. The results of chemical analysis and voluntary intake for 7 days were subjected to analysis of variance (ANOVA) of their means using SAS 9.2 software and differences in means separated using Duncan's multiple range tests. There were significant differences ($p<0.05$) in intake and chemical composition of the diets offered. *Eragrostis superba* was superior in voluntary intake (2.71% DMI of body weight), OM (92.53%), CP (5.68%) and calcium (0.33%) content. *Brachiaria brizantha* cv Toledo was superior in DM (96.2%) but similar to *Eragrostis superba* (96.08%), ash (8.7%), ME (2154.30 MJ/kg), NDF (65.59%), ADL (3.9967%) and IVDMD (54.02%). Phosphorus content was similar in all the diets ($p>0.05$). There were no significant differences ($p>0.05$) in weight gains. Although voluntary intake for *E. superba* hay is comparatively higher, the *Brachiaria* species offer more nutrients and forage resource in the ASALs. More research on its productive potential under different soil fertility regimes is needed.

Key words: Climate smart forages; Small ruminants; Dry matter intake; Weight gain

Abstract submitted to the East African Science, Technology and Innovation (EASTI) Conference; September 12th-13th, 2019, Kampala, Uganda. <https://easteco.org/easti-conference/>. Lead author **Susan A. Nguku** is a PhD candidate, Department of Agricultural Sciences, South Eastern Kenya University. Financial support for this work was provided to ROFIP Project by the NOW-WOTRO, Netherlands under the Food and Business Applied Research Fund (ARF), 2016.