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Effects of landscape and species on chemical composition and *in vitro* ruminal dry matter degradability of *Acacia nilotica* and *Maytenus heterophylla* leaves harvested during winter season

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Statement of the Problem: Pastures often lack adequate nutrients to sustain livestock productivity. The lack of sufficient nutrients in rangelands could be due to the highly fibrous nature of pastures in semi-arid areas and anti-nutritional components found in these trees that might influence the diet and health of animals. Of concern is the high concentration of phenolic compounds, such as tannins in some browse products.

Purpose: The purpose of this study is to investigate the effect of landscape variations in chemical composition and *in vitro* ruminal degradability of *Acacia nilotica* and *Maytenus heterophylla* leaves harvested during dry season.

Methodology: Fresh leaves from twenty randomly selected individual trees, each from *Acacia nilotica*, and *Maytenus heterophylla* tree species, were harvested from the two sites by hand. Individual trees were selected from within a marked 100 × 100 m area each site. Factorial experiment in a completely randomised block design was used with landscape and tree species being the main factors, and with the 100 X 100 m plots within landscapes serving as blocks (replicates).

Findings: Leaves from *Acacia nilotica* had higher DM (dry matter), N (nitrogen) and CP (crude protein) in high landscape compared to those of *Maytenus heterophylla*. There was no significant difference on NDF (neutral detergent fiber) of leaves from *A. nilotica* on both high and low landscape while the leaves of *M. heterophylla* had high NDF in low landscape than high landscape. The two species revealed major variations in the macro element content in relation to landscape positions in both high landscape and low landscape areas. In the high landscape areas most of these elements had highest values for both species than those collected from the low landscape areas.

Conclusion & Significance: Plants from low landscape were deficient of macro-minerals. Therefore; it is recommended that mineral supplements should be offered to animals to improve animal productivity throughout the year.

Biography

Mzuyanda Vela holds Bachelor of Science Degree in Agriculture (Animal Production Science) from the University of Fort Hare, South Africa. In 2014, he was awarded an Honours Scholarship for being the best final year's research project presenter. He then enrolled for BSc Agriculture Honours and completed it in one year. He is currently pursuing a Master's Degree in Animal Science, focusing on Ruminants Nutrition. He is a Research Information Management System Administrator. He is a Candidate Natural Scientist registered with South African Council for Natural Science Professions. He is also a Member of Southern African Research and Innovation Management Association. He is also an Alumnus in the Fort Hare Autumn School on Social Democracy and Political Economy. He is interested in becoming a well-recognized professional who will continue to learn and contribute a great value to the research management and development. He wishes to gain hands-on experience in conducting research that will be responsive to the ground level social issues.

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