Nutritive value of common browsed species in the semi-arid regions of the Eastern Cape, South Africa

By

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Background

Woody plants: secondary growth in the form of wood

Found all over southern Africa as they are parts of natural plant communities distributed along coastal zone .

Woody plants play an important role in ecosystem function

➢ In the past, woody species were not considered as feeds for animals and efforts were made to control or eradicate them from grasslands

➢ Over the last 25-30 years substantial research has been conducted to show that woody species are important forage resources in the arid and semi-arid regions.

Problem statement

➢ Natural pastures are the only cheap source of feed for livestock, especially in the communal areas.

➢ There is little information regarding the utilization of the woody plants as feed for livestock in communal areas.

Justification of the study

➢ Availability of nutritive value

➢ High nutrients lead to high producing animals and subsequently high profits.

Objectives

➢ To determine the nutritional characteristics, chemical composition and *In vitro* dry matter Degradability *of Acacia karroo, Schotia afra , Cussonia spicata, Azima tetracantha* and *Sideroxylon Inerme*
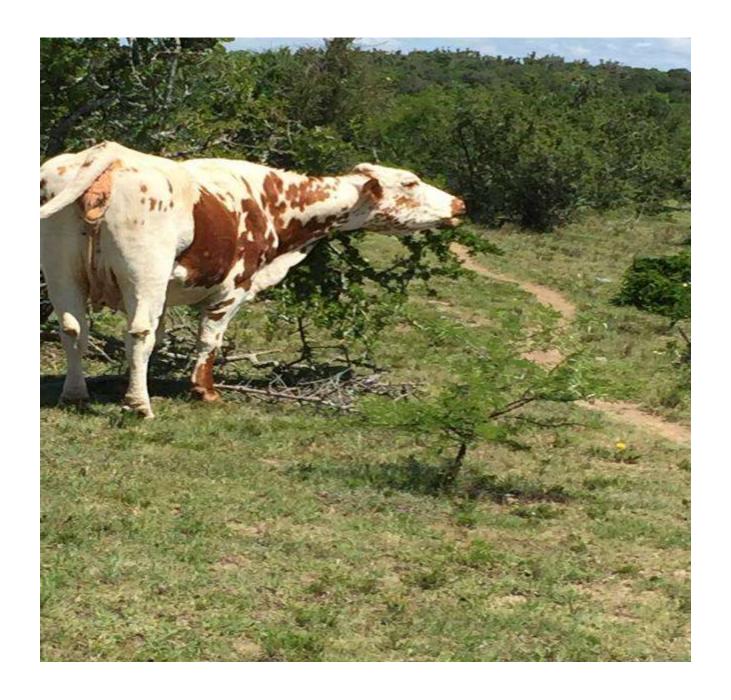
Methodology

Study site

➢ Grazing lands around: UFH 177m Longitude 18°50' E, Latitude 33°51' S,

➢ Altitude; rainfall 500 mm per annum

➢ Vegetation: False thorn veld of the Eastern Cape

Vegetation sampling

➢ Leaves harvested *A. karoo, S. Afra. C. spicata*, *A. tetracantha and S. irreme*

Chemical analysis

➢ The dried leaves milled with 2mm screen

➢ for laboratory dry matter, neutral detergent fibre acid detergent fibre, minerals, total nitrogen and *in vitro* degradability

Statistical analysis

➤ A one way Anova and GLM procedure of SAS (2010)

➤ Model: $y_{ij} = \mu + S_i + \varepsilon_{ij}$

μ = mean measure parameter

S_i = Effect of the woody species

ε_{ij} = Standard error

Results and discussion

Table1. Mean Crude protein and Crude fibre (g/kg DM) harvested from five woody species

SPECIES	CP	NDF	ADF
Acacia karroo	187.0^a	489.6^b	435.6^b
Azima tetracantha	196.0^a	416.0^c	345.8^c
Cussonia spicata	84.0^d	528.2^b	415.0^b
Schotia afra	111.0^c	608.2^a	530.0^a
Sideroxylon inerme	158.0^b	507.0^b	396.0^c
SEM	4.00	14.02	13.985

[a,b] Means and each column with similar superscripts were not significant different at (P>0.05)

Table 4.Mean degradability dry matter (g/kg DM) harvested from five woody plants

SPECIES	INVDMD24h	INVDMD36h
Acacia Karoo	314.8[b]	326.1[ab]
Azima tetracantha	492.3[ab]	527[b]
Cussonia spicata	501.8[a]	549.4[a]
Schotia Afra	228.5[c]	258.3[ac]
Sideroxylon inerme	318.9[b]	340.3[ab]
SEM	27.387	9.996

[abc] means and column with similar superscripts were not significant deferent at (P>0.05)

Conclusion and Recommendation

➢ The main characteristics of browsed species are their high CP (100-250g/kg DM) and mineral content.

➢ *Azima tetracantha* showed high crude protein, and was more degraded than other species except *Cussonia spicata*

➢ Therefore from this study it is advisable to make use of leaves of *Azima tetracantha* and *Acacia karroo* as supplement to livestock when the forage produced by the veld is inadequate.

Thank You