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The XXI International Grassland Congress / VIII International Rangeland Congress took place in Hohhot, China from June 29 through July 5, 2008.

Proceedings edited by Organizing Committee of 2008 IGC/IRC Conference

Published by Guangdong People's Publishing House

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Presenter Information

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Effects of sowing methods and seeding rates on chemical composition of *Tephrosia bracteolata*

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Key words : seed rates , sowing methods , *T. bracteolata* , ash , crude protein (CP)

Introduction In the sub humid and semi-arid zones of West Africa , ruminant nutrition is severely impaired by feed especially in the dry season . The use of improved pasture particularly those based on high yielding tropical legumes were advocated as one of the ways of achieving year round good quality forage . *Tephrosia bracteolata* is a leguminous annual plant which can be fed green or cut and processed into hay for ruminant animals . Omokanye *et al* . (2001) reported that among the factors influencing the production and quality of grazed pasture are seeding rate , sowing methods , pasture species , climate , fertilizer application and age of the pasture . Hence the objective of the study is to evaluate the effect of sowing methods and seeding rate on crude protein and ash contents of *T. bracteolata* .

Materials and methods The site used for the trial was ploughed and harrowed in June 2001 . The 2x3 factorial experiment comprised of 2 sowing methods (broadcasting & drilling) and 3 seeding rates (5kg , 10kg and 15kg/ha) in 3 replicates . The seeds were scarified with hot water 70°C for 10 minutes and germination was determined . Seed were planted and the plots were weeded on regular basis . Measurement of plant height , branches and leaflets were measured fortnightly while dry matter yield (DM) was determined every 4 weeks . Samples within 1x1m quadrat in each plot were cut 15cm above ground level separated into leaf and stem dried at 70°C for 48 hour to determine DM yield . CP was estimated using AOAC (1990) and ash content assessed by the method of Georing and Van Soest (1970) .

Result and discussion

Table 1 : Effect of sowing method and seed rate on crude protein and ash content of leaf and stem of *T. bracteolata* .

Methods/Seed rate	Age of plant					
	4	8	12	4	8	12
<i>Broadcasting</i>	<i>CP</i>			<i>Ash</i>		
5 Leaf	19.3	18.3	16.6	9.5	8.0	6.0
Stem	7.0	6.6	4.4	7.0	5.5	5.0
10leaf	18.0	16.2	16.2	11.0	10.5	4.0
Stem	6.2	5.3	2.6	6.0	4.0	2.0
15leaf	18.8	16.2	9.6	9.5	9.5	5.0
Stem	3.9	3.1	3.1	8.0	7.5	4.5
<i>Drilling</i> 5 Leaf	16.6	16.6	12.7	11.5	10.5	7.0
Stem	6.2	3.5	3.1	10.0	6.5	5.0
10leaf	17.1	17.5	15.8	9.5	8.0	5.5
Stem	5.7	3.7	3.0	8.0	4.5	4.5
15leaf	16.6	15.8	15.3	7.0	7.0	4.0
Stem	6.6	3.5	2.6	6.0	5.5	3.5

Results The result showed that the effects of sowing methods and seed rate on the CP and the Ash content of *T. bracteolata* were not significant ($P > 0.05$) . The content of the leaf were higher than the stem . In addition quality of forage declined with age of plant . These values were higher than the values reported by Okagbare and Brathe (1999) however , it falls between the ranges of values obtained in the studies of $P < 0.05$ Minson (1983) .

Conclusion The result suggests that *T. bracteolata* could be planted at least with a seed rate of 10kg/ha using broadcasting method to achieve higher values of protein and ash .

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