EVALUATION OF CHEMICAL COMPOSITION OF *Papsalum spp* GRASS TREATED WITH UREA AND MOLASSES

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ABSTRACT
This study was carried out to evaluate the chemical composition *Papsalum* spp grass treated with urea or molasses. The result showed a significant ($P<0.05$) difference across all treatments in moisture, Ash, crude fibre, crude lipid, crude protein, Nitrogen free extract, Neutral detergent fibre, Acid detergent fibre and Dry matter contents. Moisture was among then treatments with T2 having the highest moisture content (14.65%) while, T4, had lowest moisture content (10.26%). Ash content was significant across the treatments, T2 had the highest Ash content of (8.12%) while, T2 had lowest (6.50%). Crude fibre (CF) was significantly different among the treatments, T2 had highest (27.84%) while T2, had lowest (22.14%). Similarly, there was significant difference in crude lipid (CL) among the treatments, T2 had highest (3.48%) while, T4 had lowest (2.35%). Crude protein also recorded, significant difference across the treatments, T4 had highest (12.03%) while T3 had lowest (14.48%). Again, there was significant difference in Nitrogen free extract among the treatments, T4 had highest (49.29%) while, T2 had lowest (35.28%). Similarly, there was significant difference in Neutral detergent fibre among the treatments, T4 had highest (27.69%) while, T1 T2 and T3, (14.77%), (18.56%) and (15.5%) lower than T4. Also, there was significant difference in Acid detergent fibre among the treatments T2 had highest (15.99%) while, T1 had lowest (8.70%) Similarly, there was significant difference in dry matter among the treatments, T4 had highest (89.76%) while, T2 had lowest (85.35%). It was concluded that, the urea treated samples has the highest crude protein (9.87%) with the acceptable range for effective animal nutrition and therefore it was recommended that, urea can be used to treat *Papsalum* spp and to feed ruminant animals without adverse effect with the sole aim of boosting the CP content of dry grass.
Keywords: Papsalum, Grass, urea, Molases, Composition.

INTRODUCTION
Pasture is a major agricultural resource supporting both intensive and extensive systems of ruminant animal production (Oyenuga, 2009). The ruminant animals rely heavily on pasture for their nutrition than on any other feed resources (Oyenuga, 2009). However available evidences indicate that small ruminant industry would benefit if the animal received optimal nutrition. Ruminants in recent times have also been reared on fodder because they supply nutrient. During dry season when nutrient from grazing become qualitative and quantitatively limited for grazing livestock (Amole, *et al., 2011)*. These dry grasses serve as supplements, depending on the capacity to provide essential nutrient to the rumen microbial population and also satisfy the animal's requirement, both of which may increase the efficient of the feed utilization. The purpose of ensiling is to enhance the nutritional value of the feed by fermenting the feed itself for other additives added to supplement the feed (Ozung *et al* 2011). Direct addition of molasses, and urea are useful supplementary fermentable carbohydrate sources (Chiejina *et al* 2015). The main objective of the study therefore is to evaluate chemical composition of *Papsalum Spp* ensiled with urea or molasses.

MATERIAL AND METHODS
Area of Study
This research was conducted in the Federal University Gashua Teaching and Research Farm, Gashua is a community in Yobe state in northeastern Nigeria, on the Yobe river a few miles below the convergence of the Hadejia river and Jama'are river. Average elevation is about 299m.the population is about 125,000(Census

2006). The hottest months are March and April with Temperature ranges between 38-40. Temperature fall to 23-28c with rainfall of 500-1000mm (NEAZP, 2015).

Samples Collection and Preparation

The sample *of Papsalum spp*. Grass was collected from Federal University, Gashua Grazing Area. The grass was chopped in to smaller pieces (3-5cm) using cutlass. The chopped *Papsalum spp* was treated with; T1= papsalum spp untreated

T2= 400g of urea dissolved in 2litres of water used to treat 1.2kg of *Papsalum spp*

T3= 400ml of molasses dissolved in 2litres of water used to treat 1.2kg of *Papsalum spp*

T4= 200ml of molasses +200g of urea dissolved in 2litres of water used to treat 1.2kg of *Papsalum spp*

1.2kg of *Papsalum spp* was spread on a sack, a bucket containing the dissolved solution was used to spray on each treatment that is; Urea treated solution, Molasses treated solution, and Urea+molasses treated solution and turned over several times to ensure equal distribution and thorough mixing. The treated *Papsalum spp* was then ensiled in a Bama bottles for 21days. After opening, samples were taken to Yobe State University Laboratory for analysis.

Data Analysis

Data collected were subjected to analysis of variance using SPSS package (version 25). Where differences occur Duncan multiple range test (DMRT) was use to separate the means.

RESULTS AND DISCUSSION

Table 1 shows the proximate composition of *Papsalum spp* grass treated with urea or molasses Result recorded1, shows there was significant ($p<0.05$) difference in moisture content among then treatments, T2 had highest moisture content (14.65%) while, T4, had lowest moisture content (10.26%). Also, there was significant difference in Ash content among the treatments, T2 had the highest Ash content of (8.12%) while, T2 had lowest (6.50%)Again, there was significant difference in crude fibre (CF) among the treatments, T2 had highest CF (27.84%) while, T3 and T4 (24.06%) and (2.65%) were lower than T2, and T1 had lowest CF (22.14%).Similarly, There was significant difference in crude lipid (CL) among the treatments, T2 had highest (3.48%) while, T4 had lowest (2.35%).Also, there was significant difference in crude protein among the treatments, T2, and T3 had lowest (15.26%) and (14.48%) respectively, while, T4 had highest (12.03%).Again, there was significant difference in Nitrogen free extract among the treatments, T4 had highest (49.29%) while, T2 had lowest (35.28%).Similarly, there was significant difference in Neutral detergent fibre among the treatments, T4 had highest (27.69%) while, T1 T2 and T3 , (14.77%), (18.56%) and (15.5%) lower than T4. Also, there was significant difference in Acid detergent fibre among the treatments T2 had highest (15.99%) while, T1 had lowest (8.70%) Similarly, there was significant difference in dry matter among the treatments, T4 had highest (89.76%) while, T2 had lowest (85.35%).

The dry matter in this study 86.88 to 89.70% was similar to the result reported by Abdalbasit *et al.* (2013) on Gamba grass treated with urea. They reported values range from 84.99 to 88.55% DM from different locations. This implies that treating grass with urea and molasses has no effect on dry matter (DM). The crude lipid obtained in this study 2.35 to 2.18% was slightly higher compared to the values 2.06 to 3.01% as reported by Anthwange *et al.* (2013). Maffo, *et al.* (2014) on *pennisatum pediasalatum* grass treated with urea from two different studies. This implies that the level of crude lipid will be closely at the same even treated with urea. The crude fibre (CF) 22.65 to 27.84% and ash content 6.64 to 8.12% in T2, T3 and T4 respectively was similar to the results reported by Maffo *et al.* (2014) on *pannicum maximum* grass treated with urea. This means that grass treated with urea or molasses will have high ash content than untreated grass, which is good for growing animals and animals that lack calcium. Nitrogen free extract (NFE) obtained from this study 49.29% was slightly higher compare to values reported by Abdalbasit *et al* (2013) on Gamba grass treated with urea. The highest crude protein (CP) value obtained in T2 (9.74%) In this study was slightly high than the value recorded by Maffo *et al* (2014) when *Pannicum maximum was* treated with urea. These differences might be due to stage at with the grass was cut or the percentages of urea in the samples. The moisture content obtained in this study 10.26 to 14.65 was lower than the value obtained by Aduku (2013) who recorded 16.36% on Gamba grass treated with molasses, this might's be due to late harvest or the level at which the samples were ensiled

Table 1: proximate composition of *Papsalum spp* Grass treated with urea or molasses

	Treatments				
Parameters (%)	T1	T2	T3	T4	LOS
Moisture	13.1+0.19^{c}	14.65+0.09^{a}	13.59+0.05^{b}	10.26+0.06^{d}	*
Ash	6.50+0.06^{c}	8.12+0.02^{a}	6.64+0.01^{b}	6.69+0.01^{b}	*
Crude Fibre	22.14+0.29^{b}	27.84+2.41^{a}	24.06+1.63^{ab}	22.65+1.25^{ab}	*
Cellulose	3.18+0.04^{b}	3.48+0.04^{a}	3.26+0.02^{b}	2.35+0.01^{c}	*
Crude Protein	7.64+0.01^{ab}	9.74+0.01^{a}	8.48+0.34^{a}	7.03+0.01^{b}	*
Nitrogen Free Extract	41.65+0.01^{b}	35.28+0.03^{d}	39.97+0.01^{c}	49.29+0.06^{a}	*
Neutral Detergent Fibre	14.77+015^{b}	18.56+0.08^{b}	15.35+0.05^{b}	27.69+3.75^{a}	*
Acid Detergent Fibre	8.70+0.02^{d}	15.99+0.09^{a}	11.78+0.04^{c}	14.48+0.14^{b}	*
Dry Matter	86.88+0.19^{b}	85.35+0.09^{d}	86.41+0.49^{c}	89.76+0.07^{a}	*

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