EFFECTS OF FEEDING GRADED LEVELS OF SCENT LEAF *(OCIMUM GRATISSIMUM)* MEAL ON BIOCHEMICAL INDICES OF WEANER RABBITS

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ABSTRACT
This study was conducted for twenty-eight days to evaluate the effects of feeding graded levels of scent leaf (Ocimum gratissimum) meal (SLM) on biochemical indices of weaner rabbits, proximate and phytochemical parameters of scent leaf meal were also determined. The formulated feed contained 0g, 25g, 50g and 75g inclusion levels of SLM in their diets. Twenty crossed-bred weaner rabbits were allotted into four treatments, with each treatment replicated five times having one rabbit each in a completely randomized design. The proximate composition of the result of SLM are as follows; Crude Protein (CP)-30.99%, Ether Extract (EE)-4.50%, Crude Fibre (CF)-18.78%, Ash-14.10%, Moisture-5.17% and NFE-26.10. The results showed that SLM is rich in protein, and the results of phytochemical parameters of SLM includes; Oxalate- 55.27 mg/100g, Alkaloids -12.63%, Tannins -18.31 mg/100g, Phytate -504.03 mg/100g and Saponin o-86%. The result of serum biochemistry shows the range of AST (13.48-33.45u/i), ALT (11.75-19.75u/i), Total Protein (55.89-65.64g/l) and Albumin (34.62-39.68g/l). From the results above, it can be concluded that SLM has nutrients that can keep rabbits healthy because it contains vital nutrients which supports their performance.
Keywords: Scent leaf, Rabbits, Biochemical indices, Proximate composition, Phytochemical

INTRODUCTION
Today, conventional feed used for feeding all classes of livestock are very expensive and beyond the reach of farmers which have caused many farms especially poultry farms to be folded up, hence the need for the search for unconventional sources of feed. This high cost and scarcity according to Esonu *et al*. (2004) are derived from crippling realities which are characteristics of the economics of developing countries. Nowadays, even by products that ordinary will be thrown away by farmers attracts some fees and the prices are soaring higher and higher with each passing day. Scent leaf known as *Ocimum gratissimum* (Linn) is of the family Labiaceae which is a herbaceous plant found in tropical Asia especially India, where it is used for aromatic baths of fumigations in the treatment of rheumatism and paralysis (Effraim *et al.*, 2000). The use of medicinal plants in the treatment of diseases has been in practice since ancient times in different parts of the world. Plants have the major advantage of still being the most effective and cheaper alternative sources of drugs (Pretorious and Watt, 2001). The plant is well known in medicine and has severally been applied in animal health management for the treatment of diseases such as gastrointestinal diseases, diarrhoea, fungal and bacterial infections (Orafidiya *et al*., 2000). According to Ibrahim *et al. (*2009) *Ocimum gratissimum* as a medicinal plant that contains bioactive substances which would help in the reduction of cholesterol, improve feed intake, acceptability and digestibility of feed, absorption of mineral and vitamins, inhibit bacterial, viral and fungal infections and generally boost the immunity of these animals. Blood is a good indicator of mineral status of various animal species and to be used for accessing the nutritional status, health and disease condition of the animals (Islam *et al.,* 2004). It had been reported that serum biochemical constituents positively correlate with the quality of the diet (Adeyemi, 2000).
In Nigeria, it is usually recommended for stomach ache, diarrhoea and other stomach related illnesses. Therefore, this study was designed to evaluate the proximate composition, phytochemical composition of SLM and biochemical indices of weaner rabbits fed diets containing SLM.

MATERIAL AND METHODS
The study was conducted at the rabbitry section in Dagwom farm of the National Veterinary Research Institute (NVRI), Vom. Vom is located in Jos South Local Government of Plateau State which is in the Guinea Savannah zone of Nigeria. Its geographical location is on longitude 8° 45` E and latitude 9° 44`N on an altitude of 4200 feet (1280 m) above sea level, relative humidity ranges from 22 % in January to 78 % in July/August ((NVRI, 2018)). Fresh leaves of the test ingredient were harvested from K/Vom

and air dried under the shed until crispy to touch while retaining the greenish colour. The leaves were then milled using hammer mill sieve of size 2 mm and thereafter stored in air tight bag. Representative sample was used for proximate compositions of SLM according to (AOAC 2005). Phytochemical; AST and ALT according to the method described by Reitman and Frankel (1957), Total Protein Biuret method according to Reinhold (1953); and Albumin was determined according to BCG method as described by Spencer and Price (1977). The analysis for biochemical indices of rabbits fed diets containing SLM was carried out at the biochemistry laboratory department of the NVRI, Vom. The parameters analyzed were Oxalate determined by titration method of Onwuka (2005)., Alkaloids as described by Harbone (1973), Tannins using the method described by Joslyn (1970), The Wheeler and Ferrel (1971) method was used to determine the Phytate content in the sample and Saponin was determined using the AOAC (1990) method. Data collected were subjected to one-way Analysis of Variance (ANOVA) using the Statistical Package for Social Science and the means that differ significantly ($P<0.05$) were separated using Duncan's Multiple Range Test (DMRT) using the same package. (SPSS 21, 2016).

RESULTS AND DISCUSSION

The proximate composition of scent leaf meal is presented in Table 1. From the result presented, it can be observed that SLM is rich in protein (30.99) and the fat (4.50), crude fibre (18.78), Ash (14.10) and moisture (5.17) which are adequate for feeding animals. However, the NFE (26.10) is low which shows that SLM is not rich in energy. SLM is very rich in ash and fibre, the high ash content is an indicative of this leaf being rich in mineral content. The high fibre content also indicates that SLM can adequately help the digestive system to be free of excess cholesterol which agrees with the report of Ikpeama *et al.* (2014). The proximate composition of SLM is higher in all the parameters (CP-27.92, EE-13.00, CF-11.00, Ash-11.50 and NFE-24.56) analyzed for *Moringa oleifera* leaf meal as reported by Adeyemi (2018).

Table 1: Proximate composition of Scent leaf

Sample	Composition (%)
Crude protein	30.99
Fat	4.50
Crude fibre	18.78
Ash	14.10
Moisture	5.17
NFE	26.10

The result of phytochemical composition of scent leaf meal is presented in Table 2. The phytochemical parameters analyzed are present in SLM and phytochemicals are basically produced by only plants whereby the plants used them as natural protection from bacteria, fungi and viruses (Harshal *et al.*, 2014). Saponins are a special class of glycosides which have soapy characteristics and saponin has also shown that it has antifungal agents (Adebisi *et al.*, 2021).

Table 2: Phytochemical analysis of Scent leaf

Sample	Composition
Oxalate (mg/100g)	55.27
Alkaloids (%)	12.63
Tannins (mg/100g)	18.31
Phytate (mg/100g)	504.03
Saponin (%)	0.86

The result of serum biochemical indices of weaner rabbits fed diets containing scent leaf meal is presented in Table 3. All the parameters were significantly ($P<0.05$) affected by SLM except ALT values in all the treatments were inconsistently increasing and decreasing across the dietary treatments without a particular trend. Rabbits fed diets 2 had high values in AST and ALT which are kidney enzymes, this might be an indication that SLM may have affected organs like the kidney, heart or liver, since high level of AST and ALT indicates organ toxicity. The values range for AST and ALT in this

experiment did not agree with the values range obtained for rabbits fed *Moringa oleifera* leaf meal as reported by Adeyemi (2018). Serum biochemical analysis is used to determine the level of heart, liver and kidney damages as well as to evaluate protein quality and amino acid levels in animals (Adeyemi, 2018).

Table 3: Serum Biochemical Indices of Weaner Rabbits

Parameters	Treatment				
	T1 (0g)	T2 (25g)	T3(50g)	T4 (75g)	SEM
AST (U/L)	15.22[b]	33.45[a]	19.06[b]	13.48[b]	3.24
ALT (U/L)	13.67	19.75	16.50	11.75	2.30
Total protein (g/l)	65.64[a]	64.48[a]	64.42[a]	55.89[b]	2.20
Albumin (g/l)	39.68[a]	37.03[b]	37.18[b]	34.62[c]	0.68

However, total protein was decreasing as the quantity of SLM was increasing across the dietary treatments. This implies that the blood protein levels were negatively affected by the increase in SLM in the rabbits' diets, which suggest there was no efficient utilization of protein within the body of the animals.

CONCLUSION

Based on the results obtained, scent leaf meal is rich in protein, crude fibre and ash but very poor in energy. However, increment beyond 50g may not be beneficial to rabbits.

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