EFFECTS OF SUPPLEMENTATION OF COMMERCIAL FEED WITH SAND PAPER LEAF MEAL ON GROWTH PARAMETERS OF FINISHER BROILER CHICKEN

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ABSTRACT

Due to antibiotic resistance, the use of antibiotics is being discouraged and alternatives to antibiotics collectively called phytogens are being explored which include sand paper leaves. Sand paper leaf meal was supplemented to the basal diet at 0, 10, 15 and 20g/kg, constituting the four experimental diets in this study. Diet supplemented with 0g/kg served as the control diet. Each of the treatments had three replicates of ten birds. Growth parameters assessed were initial weight, final weight, weight gain, average feed intake, feed conversion ratio and mortality. Results revealed that up to 20g/kg supplementation of sand paper meal in the diets of broiler finishers did not significantly affect ($p>0.05$) all the parameters considered. No mortality was recorded for all the treatments. Final weight range of 2.00 - 2.25kg/bird; weight gain of 0.78 – 1.02kg/bird and feed conversion ratio of 2.77 – 3.12 were obtained In ***CONCLUSION****,, supplementation of finisher diets with sand paper leaves stabilized the growth performance of the fed broiler finishers as none of the birds died in the course of this trial.*

Keywords: Broiler finisher; Feed intake; ***Ficus exasperate;*** **Phytogens and Weight gain**

INTRODUCTION

Feeds additives have been used in poultry nutrition for many decades to increase production and maintain animal health (Pandey *et al.,* 2019)). Conventionally used condiment usually anti-biotic growth promoters (AGPs) are used for combating various infections experienced in poultry production (Murugesan *et al*., 2015). However, consequent residual effects on consumers involving transmission of antibiotic resistance bacteria and transfer of zoonotic infection are issues of concern discouraging its use in poultry production (WHO, 2018). To confront these threats, alternatives to antibiotics collectively called phytogens are being explored which include medicinal plants and their products, plant extract and essential oils of plants or parts of plants and plant extract (Alloui *et al*., 2014)

Phytogens as feed additives in poultry involve the use of aromatic plants and plant bioactive compounds (Kamel, 2001). There has been an increased awareness of the potential that natural plant compounds help in the prevention and treatment of poultry diseases (Guo *et al*., 2004). The phytogenic feed additives can perform multiple functions in the animal body such as increased feed intake, digestive and secretion (Windisch *et al*., 2009). These phytogenic plants include ginger, garlic and sand paper leaf.

Sand paper leaf (*Ficus exasperate*) contain about 18.39% proteins (Obour *et al*., 2017). The leaves of *Ficus exasperata* provide nutrients such as calcium, iron, titanium, aside the protein content (Hernandez *et al*, 2004). *Ficus exasperata* is a plant commonly used as a food and traditional medicine in many parts of Africa. The plant is known to be rich in various nutrients, including vitamins, minerals, anti-oxidants and fiber (Pandey *et al.,* 2019)). Phytochemical analysis of the leaf extract of *Ficus exasperata* has revealed the presence of flavonoids, tannis, saponins and alkaloids. It has also been reported to be of use for treating several problems like difficult child birth, bleeding and diarrhoea (Ijeh and Agbor, 2006). Taiwo *et al*. (2010) reported the hypoglycaemic potential of the leaves. The leaf extract is reportedly taken orally after decoction or maceration (by hypertensive patients (Ayinde *et al*., 2007). *Ficus exasperata* is a nutrient-rich plant that can provide various health benefits when consumed as food or used for medicinal purposes. This attributes could also be exploited in poultry production. This study was designed to study effects of supplementation of finisher broiler feed with sand paper leaf meal on performance.

MATERIALS AND METHODS

One hundred and twenty, four weeks old broiler chicken were source from a reliable farm at Ibadan; these birds were allotted into four dietary treatments with three replicates of ten birds each in a completely randomized design. Sand paper leaves were plucked, shade dry under room temperature for three weeks and ground into fine particles with the use of kitchen blender. Sand paper leaf meal was supplemented to the basal diet at 0, 10, 15 and 20g/kg, constituting the four experimental diets in this study. Diet supplemented with 0g/kg served as the control diet.

Experimental Treatments

Treatment 1: - Commercial feed only 0 g/kg sand paper meal
Treatment 2: - Commercial feed with 5 g/kg sand paper meal
Treatment 3: - Commercial feed with 10 g/kg sand paper meal
Treatment 4: - Commercial feed with 15 g/kg sand paper meal

The parameters of growth performance considered were initial weight, final weight, weight gain, average feed intake, feed conversion ratio and mortality**.** Data were subjected to analysis of variance (ANOVA) using SAS statistical package (SAS, 2002). The means were separated using Duncan multiple range test at $P<0.05$.

RESULTS AND DISCUSSION

Growth performance of broiler finishers fed diets with varying inclusion levels of sand paper leaf meal is shown in the Table 1, showing the initial weight, final weight, weight gain, feed conversion ratio, average feed intake and mortality. Results revealed that up to 20g/kg supplementation of sand paper meal in the diets of broiler finishers did not significantly affect ($p>0.05$) all the parameters considered. The highest final weight (2.25kg/bird) was recorded in treatment 4 and the lowest value (1.22kg/bird) was obtained in treatment 1, but these values were not significantly different ($P>0.05$). Also, values of weight gain was not significantly different ($P>0.05$), the lowest value was recorded from birds fed 0% sand paper (0.78kg/bird) and the highest value was recorded in treatment 4 (1.02kg/bird). Feed intake and feed conversion ratio also followed the same trend; the range was 114.28 – 127.76g/bird/day and 2.77 – 3.12, respectively. No mortality was recorded for all the treatments.

Table 1: Growth performance of finisher broiler chickens fed diets containing varying inclusion levels of sand paper leaf meal

Parameters	T_1 0g/kg	T_2 10g/kg	T_3 15g/kg	T_4 20g/kg	SEM	P-Value
Initial body weight (kg)	1.22	1.22	1.23	1.23	0.01	0.97
Final body Weight (kg)	2.00	2.01	2.10	2.25	0.05	0.26
Body Weight gain (kg)	0.78	0.80	0.87	1.02	0.05	0.33
Average feed intake (kg)	123.33	114.29	123.33	127.76	0.13	0.85
Feed conversion ratio	3.12	3.00	2.98	2.77	0.12	0.30
Mortality (%)	0.00	0.00	0.00	0.00	00	00

A growth performance reflects adequacy and efficiency of feed given to an animal in an environment (Leeson and Summer, 2005). The study showed slight increment in weight gain across the treatments suggested that sandpaper meal could improve the growth of broilers above 20g/kg supplementation. The phytogenic feed additives are known to perform multiple functions in the animal body such as increased feed intake and digestive secretion (Windisch *et al*., 2009). The result agreed with the finding of Orsei *et al.* (2013) that *Ficus exasperata*, did not affect broiler when fed diets containing *Ficus exasperate* at 2.5% and 5% at the finisher stage.

It was observed that there was no mortality across the treatment this suggested the safety of the leaf meal. Though *Ficus exasperate* leaves are known to contain anti nutritional factors including genogenic, glycosides, tannins and alkocoids (Ijeh and Ukwemi, 2007). Odetola *et al.* (2012) reported that tannins have been reported to be responsible for decrease in growth, feed efficiency, net metabolisable energy and protein digestibility. However non detrimental effects could be that the

concentrations of anti-nutritional factors were not enough to exert the known adverse effects of leaf meal. Feed conversion ratio values were decreased throughout with the increase in the levels of sand paper leave meal and indicated that *Ficus exasperate* leaf can improve feed conversion ratio at higher level of inclusion. The plant is known to be rich in various nutrients, including vitamins, minerals, anti-oxidants and fiber (Hernandez *et al*, 2004). These rich nutrients in the leaves might have assisted in feed digestion and absorption.

CONCLUSION

Supplementation of finisher diets with sand paper leave meal up to 20g/kg was considered safe for producing finisher broiler chickens in this study

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