GROWTH PERFORMANCE OF BROILER CHICKENS ON ORAL ADMINISTRATION OF *Parquetina nigrescens* EXTRACT

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ABSTRACT
This study evaluated the growth performance of broiler chickens on oral administration of *Parquetina nigrescens* extract. One hundred and twenty day-old broiler chicks of Arbor Acre strain were procured from a reputable hatchery and brooded for one week. The broiler chickens were randomly allotted to four treatments identified as T1, T2, T3 and T4. Each treatment was replicated three times with ten birds per replicate. Birds on treatment one (T1) served as control those on T2 T3 and T4 received extract of *Parquetina nigrescens* (EPN) in their drinking water. (T2) received EPN for two consecutive days. (T3) received EPN for 3 consecutive days while (T4) received EPN for 5 consecutive days. Data on feed intake, water intake, weight gained and feed conversion ratio was collected. The data were subjected to One-way Analysis of Variance (ANOVA) and treatment means were compared using Duncan's Multiple Range Test with the aid of SPSS (version 26.0.0.0) package There was no significant difference ($p<0.05$) between the control group and the treatment groups. Treatment 4 had the highest weight gained value (1431.66 g) and final weight value of (2142.08 g), while treatment 3 had the least feed conversion ratio (FCR) value (1.49). It was concluded that administration of 400g of *Parquetina nigrescens*/4litre of drinking water enhanced the growth rate of broiler chickens.
Keywords: Broiler chicken, Extract, *Parquetina nigrescens*, Water

INTRODUCTION
Poultry production refers to domestic birds such as chickens, turkeys, ducks, guinea fowl, peasants, pigeons, and more recently ostriches which are kept for meat or egg (Getu, 2004; Muazu *et al*., 2008; Ugwu, 2009). Poultry products have become one of the most important protein sources for man throughout the world (Ugwu, 2009).Due to the tremendous demand for animal protein, drastic expansion in broiler chicken farming have been experienced and sustained through fortified nutrition (use of synthetic antibiotics) and good management practice (Alkhalif *et al*., 2010). The prolonged use of antibiotics in poultry production causes drug resistance in birds while the residues may be passed on to humans leading to public health hazards (Ripon *et al*., 2019). As antibiotics are extensively used as growth promoters in poultry production or to control infectious disease, antibiotic resistance may occur leading to mutation of pathogen thereby compromising public health thus synthetic antibiotics are being replaced by alternative growth promoters like phytobiotics, (Alimohamadi *et al*., 2014). Phytobiotics are compounds from herbs, and their extract can stimulate appetite, endogenous secretions such as enzymes and have anti-microbial, coccidiostat or anthelmintic activities in monogastric animals (Wenk, 2003). Introducing phytobiotic to poultry is a better alternative to antibiotics that would ensure safe and economically viable poultry production. *Parquetina nigrescens***,** a notable herb in Nigeria has been reported to scavenge free radicals (Padma *et al*., 2006) because it contains flavonoid which has antioxidant effects. Thus, it is necessary to investigate the performance of broiler chicken when given *Parquetina nigrescens* extract as a growth promoter in broiler chickens.

MATERIALS AND METHODS
Experimental site
The experiment was carried out at the Poultry unit of Agricultural Technology Department, The Federal Polytechnic Ilaro, Ogun State, Nigeria. It is located in Yewa South Local Government area of Ogun State, Nigeria. It has coordinates of Latitudes 6°37′46″N and 6°55′42″N and Longitudes 2°47′24″E and 3°6′48″E (Weather Spark, 2017).

Sources and preparation of *Parquetina nigrescens* extract.
Parquetina nigrescens *whole plant was harvested from the Ilaro forest, Ogun State Nigeria. It was rinsed and reduced into smaller sizes afterwards 400g of the plant soaked in 4 liters of water for 72 hours and stir vigorously at 12 hours intervals. After 72 hours, it was filtered, the filtrate was stored in the refrigerator to avoid fermentation and made in batches when*

needed.

Experimental birds and management

Few days before the arrival of the chicks, the brooder house was thoroughly cleaned and disinfected. Wood shaving was spread on the ground and was constantly changed at different interval during brooding to avoid dampness. Feeding troughs and drinkers were provided in the brooder house, the pen was pre heated and the temperature and relative humidity was monitored using a digital hygrometer. One hundred and twenty day-old broiler chicks of Arbor Acre strain were procured from a reputable hatchery and brooded for one week. Birds were fed with commercial feeds, broiler starter and broiler finisher. Feed and water/extract was provided *ad libitum.*

Experimental Design and treatments

The experiment was laid in a Completely Randomized Design. The birds were randomly distributed into 4 treatments; each treatment had 3 replicates with each replicate containing 10 birds.

Treatment 1 (T1): received water and synthetic antibiotic when necessary (control).

Treatment 2 (T2): received extract of *Parquetina nigrescens* (EPN) for two consecutive days/ week.

Treatment 3 (T3): received EPN for three consecutive days/ week.

Treatment 4 (T4): received EPN for five consecutive days/ week.

Data Collection

Production performance

- Feed intake

A known quantity of feed was given to the birds in each replicate, while the leftover feed was weighed the following morning. The weight of the leftover feed was then subtracted from the feed given to determine the feed intake.

Feed intake (g) = Feed given (g) – Feed leftover (g)

- Water intake

Water offered and left over was recorded daily in order to calculate water intake.

Water intake (l) = Water given (l) – Water leftover (l)

- Weight gain

Initial weights of the birds were taken at day old, and the subsequent body weight was taken at the end of every week.

Weight gain (g) = final weight (g) – initial weight (g)

- Feed conversion ratio

This is the amount of feed consumed to produce 1kg of muscle by the birds.

$$FCR = \frac{Feed\ intake}{Weight\ gain}$$

Statistical Analysis

Data obtained were subjected to One-way Analysis of Variance (ANOVA) and treatment means were compared using Duncan's Multiple Range Test with the aid of SPSS (version 26.0.0.0) package.

RESULTS AND DISCUSSION

Results

Effect of oral administration of *Parquentina nigrescens* on growth performance of broiler chickens

Treatment 4 had the highest weight gained value (1431.66 g), final weight value of (2142.08 g) and feed consumed per bird, while treatment 2 had the least FCR value (1.50) (Table 1).

Table 1. Effect of oral administration of *Parquentina nigrescens* on growth performance of broiler chicken

Treatment	Feed/bird (g)	Water/bird (ml)	Initial weight (g)	Live weight gained/bird (g)	Final Live weight (g)	FCR
1	2008.88	3673.99	713.88	1263.14	1977.03	1.59
2	2069.62	3911.51	686.11	1375.92	2062.03	1.50
3	1985.09	3832.10	712.50	1330.64	2043.14	1.49
4	2200.13	4097.08	710.41	1431.66	2142.08	1.55
SEM	37.90	77.10	7.97	37.83	35.15	0.03
P-Value	0.13	0.25	0.65	0.47	0.43	0.78

DISCUSSION

The growth performance characteristics of broiler chicken fed *Parquetina nigrescens* extract was shown in table 1. Treatment 4 had the highest weight gained value (1431.66 g) and final weight value of (2142.08 g), while treatment 3 had the least FCR value (1.49). This means that, the birds given herbal treatment performed comparably with the control group. This outcome corroborates the findings of Ripon *et al.* (2019) that phytobiotics supplement alone could give the best weight gain and lower feed conversion ratio. The increased effect may be due to stimulatory effect of probiotics on digestibility, feed utilization and influence of gut micro flora.

CONCLUSION AND RECOMMENDATION

Conclusion

From this study, it was revealed that the tested plant materials competed comparably with the control group in growth promoting activity. It was concluded that administration of 400g of *Parquetina nigrescens*/ 4litre of drinking water enhanced the growth of broiler chickens.

Recommendation

The addition of *Parquetina nigrescens* extract at 400g/4litre of drinking water drinking water can be used as growth promoter in broiler chicken.

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