RESPONSE OF STARTING CHICKS TO ORAL ADMINISTRATION *OF LAGENARIA BREVIFLORA R.* IN TWO HOUSING SYSTEMS

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Abstract

A total of 360 day-old pullet chicks were used in an experiment that lasted for 14 days to determine the effect of Lagenaria breviflora R. administration (0, 25 and 75 g Lagenaria breviflora R per 1 litre of water) on performance of chicks raised on two housing systems (Deep litter 'DL' and Deep litter with a run 'DLR). The birds were randomly divided into six treatment groups replicated thrice and containing 20 birds each. The three levels of administration of Lagenaria breviflora R. and housing systems had no significant effect (P>0.05) on all performance indices measured. The interactive effect of both factors revealed no influence (P>0.05) on performance of chicks. It could therefore be established that chicks can be administered extracts of Lagenaria breviflora R. whole fruit on DL and DLR housing systems with no detrimental effect on performance.

Key words: *Lagenaria breviflora R.*, performance, housing systems.

Introduction

The use of ethno-veterinary medicine (EVM) has been considered sustainable as it is economical, culturally acceptable and ecologically sound. Medicinal plants are integral component of ethno-veterinary interventions (1) and this include the usage of fluted pumpkin (Ugwu) for anaemia, *Capsicum frutescens* treatment of digestive system disorders (2), Onion (*Allium sativum*) as an antiseptic and vermifuge (3) etc. However, non-standardization of dosages of these plants has been the bane of EVM interventions because of toxicity issues.

Although, laboratory inquest have shown prominent evidences of anti-implantation, miracicidal and cercaricidal ability (4) and antibacterial,activity (5) of *Lagenaria brevifloria R.* when administered in wistar rats. The use of *Lagenaria brevifloria R.* has found its relevance in rural populace who have knowledge of the benefits in human and animal health but with no regard for dose regime and no information on its attendant toxicities. Different production systems have been established to have considerable influence on performance and production traits (6) on birds. Therefore, the present study was therefore conducted to ascertain the effect of *Lagenaria breviflora R.* on performance of chicks under two housing systems.

Materials and Methods

Experimental Site

The experiment was carried out at the Poultry unit of the Directorate of University farms, Federal University of Agriculture, Abeokuta, Ogun State. The site is located in the rain forest vegetation zone of South-Western Nigeria on Latitude 7° 13' 49.46" N, longitude 3° 26' 11.98"E and altitude 76 m above the sea level.

Experimental Birds, Management and Design

A total of 400 day-old pullet chicks were obtained from Obasanjo Farm Holdings, Nigeria, for the study. Variation was due to housing systems (Deep litter 'DL' and Deep litter with a run 'DLR') and 3 levels of oral administration of *Lagenaria breviflora R.* (0 (control), 200 and 300 g). Fresh weight of *Lagenaria breviflora R.* whole fruit was weighed (25 and 75 g respectively) and cut into 1 litre of clean water and soaked for 24 hours. After brooding for two weeks, 360 birds were selected and randomly allotted to six treatment groups. The birds were further divided into 3 replicates of 20 birds. Birds were provided with feed and water *ad libitum for a period of 14 days test trial.*

Data collection and Analysis

The following data were taken weekly on the performance of the birds: feed intake and weight gain. The other data on feed: gain, Protein efficiency ratio (PER) and mortality were computed. Data obtained were arranged in a 3 x 2 factorial layout and subjected to completely randomized design (CRD). Significant differences among treatment means were determined using Duncan Multiple Range Test (7) as contained in (8) package.

Results and Discussion

The effects of *Lagenaria breviflora R.* and housing systems on performance indices of pullet chicks is presented in Table 1. *Lagenaria breviflora R.* administration had no influence (P> 0.05) at the three levels on all performance indices likewise the two housing systems. The interactive effect of *Lagenaria breviflora R.* administration and housing systems on performance indices of chicks at 4 weeks of age (Table 2) revealed no impact (P> 0.05) on all indices considered .The similar growth pattern observed in all treatments in all phases of growth shows the adequacy of Lagenaria breviflora R. to act as therapeutic and growth promoting agent. The low percentage mortality obtained in the experiment is also an indication that the *Lagenaria breviflora R.* fruit when administered was non-toxic but confers improved performance and health conditions of birds. *Since the commencement of phasing out of Antibiotics growth promoter (AGP),* herbs and spices have been tested for their potential to replace AGPs in animal diets, also for poultry and has been found capable of improving gut health, immune system and well-being of birds (9).The beneficial effect of conventional growth promoter elements such as antibiotics is hinged on more efficient use of nutrients, which, in turn, resulted in an improved feed conversion in all birds administered *Lagenaria breviflora R.*

Conclusion

For better and optimum performance in starting chicks, extract of *Lagenaria breviflora R.* whole fruit can be administered at 25 and 75 g per 1 litre of water under the two housing systems to minimize cost and usage of drugs with no detrimental effect on indices of growth.

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Table 1: Effects of Lagenaria breviflora R. administration and Housing systems on Performance indices of starting chicks (2-4weeks)

	Lagenaria breviflora R. administration				Housing systems		
Parameter	**0g**	**25 g/1litre**	**75 g/1litre**	**SEM**	**DLR**	**DL**	**SEM**
Initial Weight (g/bird)	100.00	100.42	100.42	0.28	100.6	100.00	0.18
Final Weight (g/bird)	176.7	175.66	174.8	1.73	175.8	175.6	1.42
Total Weight Gain (g/bird)	76.67	75.24	74.39	1.64	75.27	75.59	1.37
Weight Gain (g/bird/day)	5.48	5.37	5.31	0.13	5.38	5.40	0.11
Total Feed Intake ((g/bird)	233.80	233.75	230.00	5.17	234.4	230.6	4.25
Average Feed Intake (g/bird/day)	16.70	16.70	16.43	0.45	16.75	16.47	0.37
Feed : Gain	3.05	3.12	3.09	0.08	3.12	3.06	0.07
Total Protein Intake (g/bird)	53.76	53.76	52.9	1.19	53.99	53.03	0.98
PER	1.43	1.40	1.41	0.04	1.40	1.41	0.03
Mortality (%)	0.00	0.42	0.42	0.28	0.00	0.56	0.18

SEM: Standard Error of Mean **DLR:** Deep litter with Run **DL:** Deep Litter **PER:** Protein Efficiency ratio

Table 2: Interactive effect of *Lagenaria breviflora R.* administration and Housing systemson Performance indices of starting chicks (2-4weeks)

***Lagenaria breviflora R.* administration**	**0g**		**25 g/1litre**		**75 g/1litre**		
Housing systems	**DLR**	**DL**	**DLR**	**DL**	**DLR**	**DL**	**SEM**
Parameter							
Initial Weight (g/bird)	100	100	100.83	100	100.8	100	0.48
Final Weight (g/bird)	177.5	175.83	175	176	175	174.6	2.75
Total Weight Gain (g/bird)	77.5	75.83	74.17	76.3	74.17	74.61	2.6
Weight Gain (g/bird/day)	5.54	5.42	5.3	5.45	5.3	5.33	0.19
Total Feed Intake ((g/bird)	240	227.5	236.67	231	226.7	233.3	8.85
Average Feed Intake (g/bird/day)	17.14	16.25	16.91	16.5	16.19	16.67	0.63
Feed : Gain	3.09	3.01	3.12	3.04	3.06	3.13	0.13
Total Protein Intake (g/bird)	55.2	52.33	54.43	53.1	52.13	53.67	1.6
PER	1.42	1.45	1.37	1.44	1.42	1.39	0.05
Mortality (%)	0.00	0.00	0.00	0.83	0.00	0.83	0.48

SEM: Standard Error of Mean **DLR:** Deep litter with Run **DL:** Deep Litter **PER:** Protein Efficiency ratio