THE EXPERIMENT
INTERNATIONAL JOURNAL OF SCIENCE AND TECHNOLOGY

ISSN 2319-2119

RESEARCH ARTICLE
ONWURAH, F.B , The *Experiment, 2013, June, Vol.11. (4), 721-725*

EFFECT OF PROVIRON (Mesterolone) ON THE PERFORMANCE OFBROILER CHICKENS

ABSTRACT

This study was conducted to investigate the effect of Proviron on the performance of broiler chicken, using Anak broiler. Parameters studied included live performance, cost benefit, carcass quality and organ characteristics some important parameters. Excel feed formulation and feeding models was used in feed formulations. All data generated were analysed using t- statistics. Results indicated that Proviron has significant ($P<0.05$) effect on broiler live performance and carcass quality (weight and size) but no effect ($P>0.05$) on cost benefit and organ weight and size.

Key words: Proviron, Performance, Carcass quality, Organ characteristics, cost benefit and Anak broiler.

INTRODUCTION

Broiler chickens are fast growing birds of the *gallus* family developed for meat production, and are usually suitable for broiling. The need to increase white meat production such as broiler requires intensified research to increase both meat quantity and quality. Proviron is one such drug of great potentials both as a growth enhancer and as a sex reverser, and because it has no serious side effect. Proviron like other **h**ormones are organic compounds produced in one part of the body, from where they are transported to other parts to produce response(s). A minute quantity can produce a profound effect (Roberts, 1975). Proviron is an estrogen antagonist and does not block the estrogen receptor sites, but actually stops the conversion of testesterone to estrogen. It promotes development of secondary male sex characteristics in cases of pre-puberal hypogonadism.

Proviron is a unique steroid that has no anabolic properties but does have androgenic properties. Originally, Proviron was used to reduced some of the symptoms of testosterone deficiency like reduced sex drive. Better-suited products like Clomid and Human Chronic Gonadotrophin soon took over this role. Proviron has, however. got a far better purpose and has been in the bodybuilder's arsenal alongside Winstrol and Oxandrolone when it comes to competition preparation in humans. It is very different from Timoxifen (Nolvadex) in that it is not uncommon for athletes to be on Proviron year round in order to look sharp and hard for competitions and gust posing as it leads to harder and sharper muscles development. So, it is a final touch to competition preparation, Nolvadex in combination with Proviron and Aldactone used correctly will yield seriously hard physiques (Anabolicreview.co, 2012). Mesterolone had seen widespread use in body building primarily for antiestrogenic activity in anabolic steroid stacks but such use has declined after introduction of aromatase inhibitors and SERMs. Most significant benefits of current Mesterolone use are considered to be maintaining libido off-cycle and also relatively and temporarily improving vascularity (Morrison, 2000).

In the production of meat for human consumption, a hormonally-induced increase in growth rate of the order of 10% evidently has major economic implications. The improvement in feed conversion efficiency (FCE) which usually accompanies the increase in gain adds to the economic benefits, and at the same time makes possible greater production of edible protein per unit energy used, and this in itself is of importance in a world lacking in protein supplies (Weiert,n.d). Some of the hormones that have become available recently appear on average to increase gain as well as FCE considerably beyond the 10% level, and in examining whether they should be approved for use in animal production, the risk/benefit analysis must be taken into account.

Few analyses of the economic advantages of using hormones as growth stimulants appear to have been made. The economic advantage of using diethylstilboestrol plus diethylstilboestrol was estimated at $1.15 per head (Schake *et al*.,1979) per head.

THE EXPERIMENT
INTERNATIONAL JOURNAL OF SCIENCE AND TECHNOLOGY

ISSN 2319-2119

RESEARCH ARTICLE
ONWURAH, F.B , The *Experiment, 2013, June, Vol.11. (4), 721-725*

This study is intended to investigate effect of Proviron properties in broiler chicken performance. It is intended to investigate the effect of Proviron on weight gain and size of broilers as consumers would prefer size before weight of birds. The possibility of these dual effects (increase in weight and size) is predicted.

MATERIALS AND METHODS

A total of 60 birds were used for this study. They were birds of the same initial live weights (115g). They were divided into two groups 'A and B' laid out in a completely randomised design (CRD). Group A birds were treated with Proviron while group B birds were not treated with Proviron. Proviron (25mg each) was given in drinking water daily for the first fourteen (14) days of life and was then withdrawn. Subsequently water was given *ad libitum* without Proviron inclusion. Feed was fed only by day throughout the period of 8weeks. Feed was formulated to contain 21.7% crude protein and 15.80 ME/MJ/kg feed for the starter birds and 18.5% crude protein and 16.97ME/MJ/kg for the finisher diet using Excel feed formulation and feeding models (Onwurah, 2011).

Data were collected on Feed and water intake, weight gain, mortality, cost benefit, carcass quality and organ characteristics. Data generated were analysed using SPSS (2006)

RESULTS AND DISCUSSIONS

Table 1.0: Nutrient composition of diets

Ingredient	Starter	Finisher
Maize	55	60
Soybean	15	15
Palm kernel cake	15	20
Ground nut	15	5
Premix	0.25	0.25
Salt	0.25	0.25
Crude Protein	21.7	18.5
ME/MJ/kg	15.80	16.97

Table 2.0: Effect of Proviron on the Performance of broiler chicken

Parameters	Group A	Group B	Differences
Feed intake (g)	3263.00	2860.12	402.88
Water intake (l)	1825.10	1542.00	283.10
Live weight gain (g)	2442.10	1666.30	775.80
Mortality	0.00	0.00	0.00
$\sum$	7530.20	6068.42	1461.78
$\overline{X}$	1882.55	1517.11	365.45

From Table 2.0 above, there was significant difference ($t_{0.05} = 2.621$) in live performance of broiler chicken fed Proviron and those that were not fed the drug. This agrees with the reports of Embry (1976), Bastiman and Scott (1977), Stollard and Jones, (1979) and

THE EXPERIMENT
INTERNATIONAL JOURNAL OF SCIENCE AND TECHNOLOGY

ISSN 2319-2119

RESEARCH ARTICLE
ONWURAH, F.B , The *Experiment, 2013, June, Vol.11. (4), 721-725*

Galbraith and Watson (1978) which reported increased feed conversion efficiency and weight gain in birds fed hormonal drugs/implants. This could be attributed to differences in weight gain due to Proviron administration.

Table 3: Effect of Proviron on the economics of broiler chicken production

Parameters	Group A	Group B	Differences
Feed cost (₦)	892	896	0.04
Live weight (₦)	2500	1800	700
Dressed weight (₦)	1300	1200	100
Carcass/kg (₦)	750	750	0.00
$\sum$	5442	4646	800.04
$\bar{X}$	1360.50	1161.50	200.01

From Table 3.0 above, there was no significant ($t_{0.05} = 2.046$) difference in the cost of production between birds fed Proviron and those that were not fed Proviron. This agrees with the report of Schake *et al*.(1979) who reported that the economic advantage of using diethylstilboestrol plus diethylstilboestrol was estimated at $1.15 per head. This could be attributed reduced feed cost difference and similar dressed and carcass weights.

Table 4.0: Effect of Proviron on the carcass quality of broiler chicken

Parameters	Group A	Group B	Differences
Dressed weight(%)	47.62	41.27	6.35
shank (%)	12.40	11.32	1.08
Thigh (%)	12.91	11.41	1.50
Back cut(%)	32.33	30.12	2.21
$\sum$	105.26	94.12	11.14
$\bar{X}$	26.32	23.53	2.79

From Table 4.0 above, Proviron administration in broiler significantly ($t_{0.05} = 2.629$) the affected carcass quality of broiler birds.

Table 5.0: Effect of Proviron on the carcass quality of broiler chicken

Parameters	Group A	Group B	Differences
Body length (cm)	28.00	26.44	1.56
shank (cm)	10.24	8.94	1.30
Thigh (cm)	8.42	8.00	0.42
Back cut (cm)	17.00	16.62	0.38
$\sum$	63.66	60.00	3.66
$\bar{X}$	15.92	15.00	0.92

THE EXPERIMENT
INTERNATIONAL JOURNAL OF SCIENCE AND TECHNOLOGY

ISSN 2319-2119

RESEARCH ARTICLE
ONWURAH, F.B , The *Experiment, 2013, June, Vol.11. (4), 721-725*

From Table 5.0 above, Proviron affected ($t_{0.05}$ = 2.771) carcass parts (lenght) significantly. This agrees with Akanno *et al.(*2007) and Udeh *et al*.(2008) who reported that linear measurements could be used to determine the weight of broiler chicken.

Table 6.0: Effect of Proviron on the organ characteristics of broiler chicken

Parameters	Group A	Group B	Difference
Pancreas (g)	0.31	0.25	0.06
Liver (g)	2.65	2.13	0.52
Caecum (g)	2.00	1.86	0.14
Gizzard (g)	3.15	3.13	0.02
∑	8.11	15.78	7.67
$\bar{X}$	2.03	3.95	1.92

From Table 6.0 above, Proviron did not significantly ($t_{0.05}$ = -1.145) affect organ weights. This implies that Proviron has no negative effect on the organs.

Table7.0: Effect of Proviron on the organ characteristics of broiler chicken

Parameters	Group A	Group B	Differences
Pancreas (cm)	1.00	1.00	0.00
Liver (cm)	6.65	6.44	0.21
Caecum (cm)	3.44	3.45	0.01
Gizzard (cm)	5.30	4.89	0.41
∑	16.39	15.78	0.61
$\bar{X}$	4.10	3.95	0.15

From Table 7.0 above, Proviron did not affect organ lenghts ($t_{0.05}$ = 2.306) significantly. This agrees with Akanno *et al*.(2007) and Udeh *et al.(*2008) who reported that linear measurements could be used to determine the weight of broiler chicken.

CONCLUSION

This study was conducted to investigate the effect of Proviron on the live performance, cost benefit, carcass and organ characteristics of broiler chicken. Parameters studied included feed and water intake, weight gain, cost benefit and mortality, some carcass and organ parts were also studied. Results indicated that Proviron has effect on broiler performance as it affected

THE EXPERIMENT
INTERNATIONAL JOURNAL OF SCIENCE AND TECHNOLOGY

ISSN 2319-2119

RESEARCH ARTICLE
ONWURAH, F.B , The *Experiment, 2013, June, Vol.11. (4), 721-725*

weight gain and body size positively which are indicators of increased feed conversion efficiency; but had no significant (P>0.05) effect on the economics of production and organ characteristics.

RECOMMENDATIONS

This study recommends the feeding of Proviron as water additive in broiler production as it improved broiler perfomance (live weight and size), caracass quality without compromising organ characteristic and cost.

REFERENCES

1. Akanno, E.C., Ole, P.K., Okoli, I.C. and Ogundu, U.E. (2007). Performance characteristics and prediction of boby weight of broiler strains using linear body measurement. Proceeding of the Nigerian Society of Animal Production held in Calabar. Pg 162 – 164.
2. Anabolicreview.co.(2012).Proviron. Available on-line at http://www.anabolicreview.co.za.product-reviews/highly-andogenic/...
3. Bastiman, B. and Scott, B.M. (1977). Growth-promoting implants for beef cattle. *Anim. Prod.* 24, 131, Abst. 15.
4. Galbraith, H. and Watson, H.B. (1978). Performance, blood and carcase characteristics of finishing steers treated with trenbolone acetate and hexoestrol. *Vet. Rec.* 103, 28–31.
5. Morrison, M. C. (2000). *Hormones, Gender and the Aging Brain: The Endocrine Basis of Geriatric Psychiatry*. Cambridge, UK: Cambridge University Press. p. 134. ISBN 0-521-65304-5.
6. Onwurah, F.B., (2011). Excel feed formulation and feeding models. Greener Journal of Agricultural Sciences 1(2):27-31. Available on line at www.gjournals.org/GJPS/GJPS Content/2011/November/GJP...
7. Shering (pty) LTD. Proviron tablet.
8. Stephane, C. (2009). Positive effects of Proviron. Available on-line at http://www.livestrong.com/article/67681-positive-effects-proviron/Steroidiologycom (2011). Proviron (Mesterolone).
9. Stollard, R.J. and Jones, D.W.(1979). The response to growth-promoting implants in finishing steers and heifers, both in yards and at grass, and the economic implications. *Anim. Prod.* 28, 416–416.
10. Udeh, I., Isikwenu, J.O. and Ukughere, G. (2008). Performance characteristics and prediction of bodyweight using linear body measurement in four strains of broiler. Proceedings of the 42th Annual Conference of Agricultural Society of Nigeria. Ebonyi State, October 19th – 23rd: Pg 737 - 740.
11. Weiert, V.(n.d). The use of hormones in animal production. Food and Agricultural Organisation.

ONWURAH, F.B

FEDERAL COLLEGE EDUCATION (Technical),

*Federal College of Education (Tech.),

Omoku, Nigeria.