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LIVE PERFORMANCE OF BROILER AND DOMINANT D300 HYBREED CHICKS

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ABSTRACT

This study was conducted with 20 hens and two cocks of broiler (Bx), indigenous chicken (Dominant D300) and their hybreed (BxD300) from where 180 chicks, 60 each of Broiler pullet (Bxpx), Dominant D300 pullet (D300px) and their hybreed pullet (BxD300px) were raised for the study. The chicks were brooded in the conventional open floor system with each breed divided into four replications. Feed and water were given ad libitum for 4 weeks. Results obtained were subjected to ANOVA and means separation. Economics of production was also analysed. Results show significant ($P<0.05$) differences in productive parameters (hen weight at point-of-lay, live weight of chicks at 4 weeks and mortality), except for total feed consumed which was not significantly ($P>0.05$) different. There were significant ($P>0.05$) differences in reproductive parameters (egg weght-at-lay, egg weight loss due to incubation, shell weight after hatch, and weight of day-old chicks) except for eggshell weight and hatchability. Results also indicate preference for BxD300 (hybreed) chicks over Bx (broiler) chicks and Dominant D300 in terms of financial returns at 4 weeks of age.

Key words: Broiler, Dominant D300, Hybreed pullet and performance

INTRODUCTION

Native chicken posseses more tropical adaptive qualities than the exotic breeds. Theses qualities include hardiness, broodiness, agility, small size and scavenging ability. It has better texture and taste commensurate with local demands. It also has better mothering and fostering qualities; less cannibalistic and aesthetically varied. However, it has slow growth rate and adult weight. It also has low egg laying capacity and small egg size. These negative qualities has actually affected research interest into improving its potentials through cross breeding. Instead, huge finance has been committed to importation and research into exotic breeds. In spite of this neglet, local chickens remain the most important chicken breed in Africa. Local chickens are a major protein source for African families as they are easily raised by women and children in the backyard, with or without care. It contributes over 80% 0f poultry production in most African countries (Kitalyi, 2000).
This study therefore, evaluated the live performances of Dominant D300 against broiler and the hybreed of Dominant D300 and broiler chickens.

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MATERIALS AND METHODS

The study was conducted with 60 hens and 2 cocks raised from 180 chicks of 60 each. Each group comprised of twenty hens (20) and two (2) cocks of the same breed raised under the conventional deep litter system. One hundred (100) eggs were collected for artificial incubation 2 weeks after the start of lay from each group. Upon hatching, 60 chicks of mixed sexes from each group were brooded separately for 4 weeks in four replications. Feed and water were given ad libitum.
Data collected were analysed using One-way analysis of variance (Steel and Torrie, 1980) and means separated using Duncan's 'New' Multiple Range Test (Obi, 2002). Economic analysis was conducted using the methods outlined by Akpodite and Inoni (2002).

RESULTS

Table 1. Productive performance of chicks

Parameter	BxPx	BxD300Px	D300Px	X	±SEM	CV
Hen wt. at point of lay(kg)	3.5[a]	3.3[b]	1.4[c]	2.4	0.0319	0.44
Total feed consumed/chick (kg)	1.0	0.7	1.5	0.7	0.1947	8.49
Live wt. at 4wks/chick (kg)	0.6[a]	0.5[b]	0.4[c]	0.5	0.0625	0.39
Mortality (%)	2.5[a]	0.75[b]	0.5[c]	1.25	0.6458	3.2

Table 2. Reproductive performance of chicks

Parameter	BxPx	BxD300Px	D300Px	X	±SEM	CV
Egg wt. at point of lay(g)	57.5[a]	45.0[b]	39.0[c]	7.2	0.7239	0.51
Egg wt. loss due to incubation (g)	3.0	2.1	1.0	2.0	0.0217	0.36
Eggshell wt. after hatch (g)	4.2[a]	4.1[b]	4.0[c]	4.1	0.3637	2.98
Hatchability (g)	15.0	19.5	20.8	18.4	0.7591	1.37
Wt. of day-old chick (g)	47.3[a]	36.9[b]	33[c]	39.1	0.7235	0.62

SEM = Standard ErrorMean
CV = Coefficient of Variation
Means along the rows without superscripts are not significantly (P>0.05) different.

Table 3. Economic analysis of chicks

Parameter	BxPx	BxD300Px	D300Px	X
Feed cost (₦/Kg)	0.064	0.064	0.064	0.064
Cost of day-old (₦/chick)	250	200	120	190
Price/chick at 28days (₦)	500	480	250	410
Feed cost/ chick (₦)	38.4	32	25.6	32
Tota cost/chick (₦)	288.4	232.0	145	221.8
Gross margin (₦)	211.6	248.0	104.4	188.0

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DISCUSSION OF RESULTS

From table 1, hens of the different breeds had different weights at point-of-lay which was significantly (P<0.05) different. This could be attributed to breed differences, which affected the liveweights of the progeny at the end of the 4th week of age. The significant (P<0.05) differences could be attributed to different rates of feed conversion of feed as feed intake was not significatly (P>0.05) different. However, mortality was highest in the Broiler (2.5), followed by the hybreed (0.75) and lowwest in the Dominant D300.

Their hybreed consumed above the average of the broiler and the Dominant D300 chicks. All parameters studied were significantly (P<0.05) different except for total feed consumed. The Dominant D300 chicks are better scavengers than either of the broiler and their hybreed. This agrees with Numes (2005) who reported that broilers are nimblers and would eat every hour and drink severally within the day and night periods.

Egg weight at point-of-lay was significantly (P<0.05) different(Table 2). Broiler had the highest weight of 57.5g, followed by their hybreed (45g) and then Dominant D300 (39g). this could be attributed to hen weight at point-of-lay (Table 1). This implies that heavier birds lay heavier eggs. The small egg weight of 39g of Dominant D300 is thus improved to 45g in the hybreed. The table also shows a regular loss in weight in the incubating egg. Egg weight loss was significantly (P<0.05) different and may be attributed to energy loss due to embryonic metabolism. Eggshell showed no significant (P>0.05) differences. Results indicate that above 4g shell weight, hatching is delayed or impaired due to imbalance gas exchange. Hatchability was not significantly (P>0.05) different. This agrees with the report of Azharul et al.(2005). However, the broiler group recorded the least value. Weight of day-old was significantly (P<0.05), and could be attributed to breed differences in terms of hen weight at point-of-lay and egg weight.

From table 3: Broiler had the highest production cost of N288.4 while Dominant D300 chicks had the least (N145.6). The hybreed had an average production cost of N232.0 Chicks from the hybreed had the highest gross margin of N248.0 followed by broiler (N211.6) and Dominant D300 (N104.4). These results suggest that the Hybreed strain was more economic to produce than the other strains studied.

CONCLUSION

This study has shown that improving our local breeds such as the Dominant D300 is of significance in improving their genetic worth. This is because of the positive effects of cross breeding broiler hens and local Dominant D300 chicks. This study therefore recommends the cross breeding of indigenous breeds with exotic ones as this would encourage organic poultry farming in the phase of eminent problems of global warming arising from livestock agriculture.

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