

## Genetic control of carcass traits among Nigerian pure and crossbred meat type chickens

Adebambo, A. O., Wheto, M., Adeleke, M. A., Ikeobi, C. O.N., Ozoje, M. O.,  
Oduguwa, O. O. and Olufunmilayo A. Adebambo

Department of Animal Breeding and Genetics, College of Animal Science  
and Livestock Production, P.M.B.2240,  
University of Agriculture, Abeokuta, Nigeria.



Correspondence Author email: tumininl@adebambo@yahoo.com

### Abstract

Two hundred and ninety five cocks and two hundred and ninety nine hens were selected from a diallel combination of four breeds of chickens; (Anak Titan (A), Alpha (B), Giriraja (G) and Normal indigenous (N) chickens) at 12 weeks of age, in a broiler improvement program for carcass analysis. Genetic parameters like dominance, additive, maternal, reciprocal variances and heterosis were estimated for the following economically important carcass traits - Live weight (g), Eviscerated weight, Abdominal fat percentage, Breast yield, Thigh yield, Drumstick yield; survival organs - Wing yield, Empty gizzard yield, internal organ yield and heart yield. Additive, dominance and maternal effect were significant ( $P < 0.01$ ) on all carcass traits. Dominance variance was more important in the control of survival organs; therefore crossbreeding will improve them, while Additive variance was important in the control of economically important traits and therefore selection useful in their improvement. Narrow sense heritability estimates were medium to high for all the parameters with values ranging from  $0.34 \pm 0.12$  for weight of internal organ to  $0.77 \pm 0.06$  for wing weight. Estimates of heterosis among carcass traits showed that AN had the highest heterotic advantage, while NA exhibited the least for the parameters. AG cross generally had highest dominance for carcass traits while least values were found among GA. Anak Titan dams generally showed the highest maternal effects, while least was exhibited by Normal indigenous dams. AN cross showed highest reciprocal differences for all the parameters while the least reciprocal values for carcass traits were generally among AG cross. Anak Titans showed a good breed advantage for inclusion in this indigenous broiler development. It is recommended that an improvement process that involves all the breeds should be adapted using reciprocal recurrent selection or modifications of it.

Key words: Poultry breeds, carcass traits, genetic parameters