



Lupane State University
Building Communities through Knowledge

Faculty of Agricultural Sciences

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Management**

**PERFORMANCE AND EGG QUALITY CHARACTERISTICS OF INDIGENOUS
CHICKENS (*GALLUS DOMESTICUS*) FED SUNFLOWER (*HELIANTHUS
ASTERECAE*) BASED DIETS.**

BY

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**THIS DISSERTATION IS SUBMITTED IN PARTIAL FULFILLMENT OF THE
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ABSTRACT

The effects of feeding sunflower based diets on performance and an egg quality characteristic of indigenous chickens at pullet stage was. Due to the evidenced shift and increase in the demand and preference of indigenous chickens to broilers no supplementary feed has been formulated to supplement their nutrition hence scavenging on its own is not adequate for production. One of the main reasons for poor performance of indigenous chickens is poor nutrition; therefore there is greater need to formulate a supplementary feed to address the problem Fifty four indigenous chickens were randomly assigned to three dietary treatments each having two replicates (n=9/replicate). The three treatments were sunflower and pearl millet, sunflower and maize and a commercial growers mash (control). The study was carried out over a total of 8 weeks inclusive of the 2 week acclimatization period. Chickens were fed a known quantity of feed and intake was also calculated after refusal collection, eggs collected were weighed and analyzed for nutrient composition. Weighing of chickens was done on a weekly basis so as to come up with a weekly weight gain trend. Collected egg samples were analyzed at the Department of Biochemistry[^] University of Zimbabwe for carbohydrate content, fat content, moisture content, calcium content, vitamin C, vitamin A, crude protein and shell thickness.

Data was analyzed using the General Linear Model Procedures in SPSS.

Average egg shell thickness for the treatments was 0.35mm; 0.38m and 0.33mm respectively and there was no significant difference ($P > 0,05$) between the shell thicknesses in all the treatments. The average ash content for treatment 1 was 0,95% \pm 0.3, 1.05% \pm 0.2 and 1.1% \pm 0.25 respectively and no significant differenc[^]($P > 0.05$) in ash content were noted. Feeding sunflower based diets produced insignificant differences on ash content, moisture content, protein content, carbohydrate content, vitamin A, fat content of egg samples analyzed. Weekl

weight gain had no significant differences ($P=0.43$) between all the treatments. There was also no week effect ($P=0.94$) in weekly weight gain. Treatment 2 recorded the highest average final weight of chickens which was at 1.6245kg, followed by treatments at 1.5713 kg and lastly treatment 1 at 1.5351kg.

There were no significant differences ($P=0.303$) in feed intake. Significant differences ($P<0.05$) were noted on egg weight and average egg weight for eggs collected from treatment 1 was 52.47g, eggs from treatment 2 were 45.79g and eggs from treatment 3 were 47.69g. Based on the results obtained from this study, in cases where commercial feed is not readily and easily available to farmers, sunflower based diets may be used to supplement indigenous chickens depending on whether they are supplemented for egg production or meat production

