

News & Comments

Physiological Effects of Tiger Nut-Fortified Broiler Chicken Diet*Abhilash Singh*

Tiger nuts (*Cyperus esculentus*), a non-traditional feed product from the Cyperaceae family, are grown mostly in Nigeria as a rich vegetable milk alternative for cow's milk. Omega-3 fatty acids, crude protein (9%), metabolizable energy (2700 kcal kg⁻¹), minerals (potassium and phosphorus), and vitamins E and C are all present in significant amounts. Fibre and necessary amino acids are abundant in tiger nuts. Studies claim that the starchy content likely gives animal colon bacteria prebiotic characteristics. It has been discovered that milk is effective in avoiding arteriosclerosis. This study's goal was to find out how tiger nuts affected the broiler chickens' ability to grow.

This research was carried out at the Teaching and Research Farm of Federal College of Agriculture, Ishiagu in Ivo Local Government Area of Ebonyi State, Nigeria. Using a completely randomized approach, four treatment groups of 84-day-old SAYED broiler chicks were chosen (CRD). The therapies included: Tiger nuts were not used in treatment one (T₁), treatment two (T₂) contained 5% of them, treatment three (T₃) contained 10% of them, and treatment four (T₄) contained 15% of them in place of maize. There were 7 birds per replication and 21 birds in each treatment group. Data on growth performance criteria, such as starting weight, ultimate body weight, daily weight gain, daily feed consumption, and feed efficiency, were gathered. According to Saleh et al description, the haemocytometer (Paul Marienfeld, Lauda-Konigshofen, Germany) was used to quantify the White Blood Cells (WBC). One-way ANOVA was used to evaluate the data.

When compared to the control group, the fortified tiger nut group consumed more feed each day. The T₄ group consumed the most feed, which may have been a result of the diet's low energy content, since the birds may have eaten more to reach the required amount of energy. Feed efficiency is a measurement of the input to output (weight gain) ratio (feed). The iron-containing metalloprotein responsible for transporting oxygen in red blood cells, known as haemoglobin, varied greatly amongst the different species of birds. The group that consumed reinforced tiger nuts had lower values. The RBC level, which did not significantly differ from the Hb level but was high nonetheless, is an indicator of effective oxygen and carbon dioxide transportation inside the animal body. Red Blood Cell (RBC), Mean Cell Haemoglobin (MCH), Mean Cell Volume (MCV), as well as Packed Cell Volume (PCV), Mean Cell Haemoglobin Concentration (MCHC), and White Blood Cell (WBC) mean values did not differ significantly ($p > 0.05$) between the treatment groups.



The inclusion of tiger nuts in the diets of broiler chickens did not have any negative effects on the broilers' haematopoiesis. At a fortification level of 5%, the outcome was optimal in terms of feed efficiency and weight increase.

Tiger nuts can thus be substituted for maize at a 5% inclusion level for both the starting and finisher broiler chicks to increase yield.

JOURNAL REFERENCE

S.U. Ilo, O.A. Ugwu, C.U. Ogba and O.C. Ogbu, 2021. Physiological implications of broiler chickens diet fortified with tiger nuts (*Cyperus esculentus*). *Int. J. Poult. Sci.*, 20: 39-42.

KEYWORDS

Tiger nut, broiler chicken, growth performance, haematology, protein, poultry feed

