Effects of Diet Containing Fermented Canola Meal on Performance, Blood Parameters and Gut Health of Broiler Chickens.

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ABSTRACT: The current research aimed to study the effects of the fermented canola meal (Lactobacillus) diet on productive performance, blood parameters, and gut health of broiler chickens under high ambient temperature conditions. A total number of 320 (Ross-308) one-day-old broiler chickens were allocated randomly into four experimental groups for 42 days. Four experimental groups with four types of diet, including the control group (CON) received basal diet, and three other experimental groups were supplemented with 20% of the canola meal (CM), 20% fermented canola meal (FCM), and 20% canola meal with probiotic (PCM). The chickens that fed FCM presented improvement in live body weight, feed conversion ratio, and higher nutrient digestibility, compared to CM and PCM groups. Serum glucose, total protein, albumin, and aspartate aminotransferase (AST) of levels of chickens fed by FCM were higher than chickens fed CM and PCM, while there was a decrease in cholesterol. Fermented canola meal resulted in some noticeable beneficial changes in the cecum microflora communities through increasing the population of Lactobacillus spp. and decreasing the Escherichia coli and improved its morphology by increasing villus height. The results indicated that the fermentation of canola meal has enhanced performance, nutrient digestibility, and gut health, which allow using greater amounts of fermented canola meal as a replacement of soybeans meal in the broiler diet.

Keywords: Broiler, Canola meal, Fermentation, Gut health, Performance, Serum parameter.
Avian neoplastic diseases, including Marek’s disease (MD), avian leukosis (AL), and reticuloendotheliosis (RE), are of economic importance in the chicken industry. However, it is difficult to differentiate MD from AL and RE by clinical signs and postmortem examination.

Therefore, the present study aimed to classify the avian neoplastic diseases affecting commercial layer chickens in Nigeria using clinical history, postmortem examination, and histopathological technique. Carcasses of commercial layer chickens from 7 and 20 poultry farms in Kaduna and Plateau States, respectively, were studied, respectively, from February 2017 to March 2018. The age, morbidity, and mortality rates in each of the affected farms were determined.

Detailed postmortem examinations were carried out on the carcasses from the affected farms, revealing that the neoplastic lesions were characterized by white to gray, multifocal, firm nodules of varying sizes on the affected organs. In Kaduna State, the neoplasms were commonly observed in the liver, spleen, proventriculus, and lungs. In Plateau State, the affected organs included liver, spleen, proventriculus, lungs, and the intestines. The histopathological changes in the affected tissues were similar and characterized predominantly by the infiltration of lymphocytes, lymphoblasts, and macrophages. The patterns varied among the affected organs, and the size of the lesions was related to the duration of the disease.

The histopathological findings indicated that 2 hours post-beak-trimming (PBT), the packed-cell volume of group A was significantly lower than that of group B while plasma cortisol level of group A was significantly higher than that of group B at 2 and 6 hours PBT. Furthermore, feed intake and body weight markedly decreased in the pullets debeaked with both methods until 72 hours PBT. Therefore, the present study aimed to investigate the carcass and meat quality of broiler chickens by supplementing the antacid in drinking water. A total of 48 male broiler chickens (Ross 308) were divided into two groups that the first group was the control group (did not receive antacid supplementation in the drinking water) and the second group was supplemented with antacid in drinking water (0.10%) for three days pre-slaughter. It was found that the antacid neutralized stomach acidity and may stabilize the pH of post-mortem carcass and meat.

Drip loss at 24 hours post-slaughter was significantly higher. The shear-force of breast meat was not significantly affected. The pH of breast meat 45 minutes and the drumstick, and wing were not significantly affected. The shear-force of breast meat was significantly lower than that of group A at 2 and 72 hours PBT. Furthermore, feed intake and body weight markedly decreased in the pullets debeaked with both methods until 72 hours PBT. Therefore, the present study aimed to compare the effects of manual and electric debeaking on the performance and meat quality of broiler chickens. A total of 20 pullets aged 3 weeks were assigned to two treatment groups; those in group A were manually debeaked while the samples in group B were electro debeaked. The results showed that the pre-treatment with vitamins and NSAIDs could reduce acute pain responses of pullets subjected to beak-trimming.
ABSTRACT: Chicken production plays a major role in the livelihood of rural people due to the provision of eggs and meat which are high sources of protein. This calls for sustainable production of chickens through strategies aimed at improving the hatchability of eggs and survival of chickens. Therefore, the present study was conducted to determine the effect of egg storage length on egg hatchability and survival of the Koekoek chickens. A total number of 270 eggs were divided into three treatment groups, and the eggs of each group were stored for 3, 7, and 11 days before incubation. Each treatment consisted of three replicates. The General Linear Model procedure was used to analyze the data. The eggs that were stored for three days before incubation had a higher hatching percentage, compared to those that were stored for 7 and 11 days before incubation. Storing eggs for few days before incubation resulted in reduced embryonic mortality rate and lower mortality of chickens during the first seven days after hatching. Based on these results, it is recommended that Koekoek chicken eggs should be stored for three days before incubation to maximize hatchability and survival of chickens before the age of seven days.

Keywords: Eggs, Storage, Embryo mortality, Hatchability, Koekoek chicken.

ABSTRACT: The development of the digestive tract organs is closely related to the increased body weight growth in chickens. The present study aimed to determine the effect of using maggot meal as an antibacterial and protein source of fish meal substitution in diets on the relative length of the digestive tract organs, small intestine histomorphology, and the percentage of the native chicken carcass. A total of 140 one-day-old chickens were randomly assigned to one of the five treatments according to a completely randomized design with four replications for each treatment. The treatments included P0 (basal diet + 15% fish meal + 0% maggot meal), P1 (basal diet + 11.25% fish meal + 3.75% maggot meal), P2 (basal diet + 7.5% fish meal + 7.5% maggot meal), P3 (basal diet + 3.75% fish meal + 11.25% maggot meal), and P4 (basal diet + 0% fish meal + 15% maggot meal). The results showed that the use of maggot meal in P3 had a significant effect on the relative length of the digestive tract organs and small intestine histomorphology. The percentage of the native chicken carcass was also affected by the use of maggot meal. Based on these results, it is recommended that maggot meal can be substituted for fish meal in broiler chicken diets to improve the relative length of the digestive tract organs and histomorphology of the small intestine.

Keywords: Carcass parts, Digestive tract, Histomorphology, Maggot meal, Native chicken.

ABSTRACT: The present study was conducted to evaluate the effects of different levels of the feed supplement containing minerals, fatty acids, vitamins, and amino acids added to drinking water on broiler chickens' performance and carcass traits. A total of 100 one-day-old Cobb 707 (mean weight 46.7 g) were randomly assigned into four treatments, including control group (C), C + 2.25 ml/L Viterna Plus (V1), C + 2.50 ml/L Viterna Plus (V2), and C + 2.75 ml/L Viterna Plus (V3). Each treatment group contained 5 replicates of 5 birds in each (25 birds per treatment). Birds were maintained for 28 days. The results suggested that feed supplement at 2.50 ml/L could successfully improve final body weight, performance index, and carcass weight. The addition of feed supplement to drinking water could improve the performance and carcass traits of broiler chickens.

Keywords: Broiler chicken, Carcass, Feed supplement, Tropics, Viterna plus.
Marek's disease (MD) is a lymphoproliferative and neuropathic disease of chickens. Research has shown that progesterone hormone injection during the production phase of Arabic Gold chicken had a significant effect on egg production and caused varying egg production peak and luteinizing hormone concentration.

**ABSTRACT:**

The present study aimed to analyze the effect of progesterone hormone injection on egg production. The study was conducted using a completely randomized design and the obtained data were analyzed with a descriptive analysis for qualitative data and one-way analysis of variance followed with Duncan's Multiple Range Test as a post hoc test for the hormone concentration in blood plasma. A total number of 60 Arabic Gold chickens aged 26-weeks were divided into three groups based on injected hormone concentration (P<0.01). The study results indicated that the progesterone hormone injection during the production phase increased egg production.

**Keywords:** Biosecurity Practices and Characteristics of Poultry Farms in Three Regions of Cameroon.


**Evaluation of Biosecurity Practices:**

- **Study areas:**
  - Cameroon
  - Littoral
  - West

- **Mean biosecurity scores:**
  - 2 (Cameroon)
  - 2 (Littoral)
  - 2 (West)

- **Number of farms:**
  - 20 (Cameroon)
  - 20 (Littoral)
  - 30 (West)

- **Number of farms with disease outbreak:**
  - 2 (Cameroon)
  - 2 (Littoral)
  - 3 (West)

- **Risk of disease outbreaks:**
  - Higher in the well-ventilated type farms (99.9%)
  - Higher in the all-in-all-out farms (99.9%)

- **Risk factors:**
  - Hospitals and clinics (95%)
  - Schools and universities (94%)
  - Industries (92%)

- **Antibiotic resistance:**
  - Higher in the well-ventilated type farms (100%)

**Conclusion:**

The present study revealed a high flock and chicken seroprevalence level of MDV significantly higher in local chickens (OR: 1.70, 95% CI: 1.26-2.28) than exotic chickens, higher significantly in the Centre region (OR: 2.09, 95% CI: 1.25-3.49) compared to the West region, and higher significantly in North Gondar zone (OR: 0.27-0.58) and South Gondar (OR: 0.19, 95% CI: 0.13-0.28) compared to North Gondar zone. In conclusion, the present study revealed a high flock and chicken seroprevalence level of MDV significantly higher in local chickens than exotic chickens, higher significantly in the Centre region compared to the West region, and higher significantly in North Gondar zone compared to South Gondar.
Coccidiosis is a disease found in poultry caused by parasitic protozoa, namely *E. tenella*. The current study aimed to evaluate whether the probiotic *Lactobacillus casei* could be used as a probiotic in the control of chicken colibacillosis.

The treatment groups presented clinical symptoms of *E. coli* infection. The number of oocysts in treatment group I fluctuated from the lowest number which was zero on day five and then increased by day six, seven, and eight and it has reached the highest number of 284,200 oocysts on day nine. Meanwhile, the treatment V group reached the highest number of 719,480 oocysts on day nine. The treatment group III peaked with the most significant number of 618,960 oocysts on day nine. The treatment group II presented a significant decrease in the total number of oocysts of *E. tenella* in attenuation of *E. tenella* infection. One of the compounds applied for attenuation is formaldehyde. Formaldehyde was zero on day five and then increased by day six, seven, and eight and it has reached the highest number of 371,102 oocysts on day nine. The treatment group II peaked with the most significant number of 558,600 oocysts on day nine.

The absorption of *E. tenella* oocysts in the treatment groups was measured by the number of oocysts in the feces. The number of oocysts in treatment group I fluctuated from the lowest number which was zero on day five and then increased by day six, seven, and eight and it has reached the highest number of 284,200 oocysts on day nine. Meanwhile, the treatment V group reached the highest number of 719,480 oocysts on day nine. The treatment group III peaked with the most significant number of 618,960 oocysts on day nine. The treatment group II presented a significant decrease in the total number of oocysts of *E. tenella* in attenuation of *E. tenella* infection. One of the compounds applied for attenuation is formaldehyde. Formaldehyde was zero on day five and then increased by day six, seven, and eight and it has reached the highest number of 371,102 oocysts on day nine. The treatment group II peaked with the most significant number of 558,600 oocysts on day nine.

The treatment groups were divided into five groups, namely A (healthy control), B (infected without treatment), C (infected and treated with antibiotic), D (infected and treated with probiotic), and E (infected and treated with formalin). Groups C and D were treated using 15 g/L norfloxacin and 1.5 ml of 1.1x10^6 cfu/ml *L. casei*, respectively. Group E was given the oral infusion of 1.5 ml of 1.3x10^6 cfu/ml *L. casei*. The experimental design was conducted on three-week-old broiler chicks, which were divided into five groups, namely A (healthy control), B (infected without treatment), C (infected and treated with antibiotic), D (infected and treated with probiotic), and E (infected and treated with formalin). The obtained data would be analyzed by the ANOVA statistical test.
The present study aimed to estimate carcass characteristics of pure and crossbred indigenous guinea fowl in Benin, Biodiversity, Climatic zone, Indigenous guinea fowl, Phenotypic characteristic.

**Morphobiometric Characteristics and Biodiversity of Indigenous Guinea Fowl (** *Numida meleagris* **)**


Histopathology Description of Chicken Liver Infected by L2 Toxocara Vivulorum

Toxocara vitulorum parasitic hosts of toxocariasis which has the potential for transmission of toxocariasis to humans. Larvae and were grouped in accordance with observations of the 1, 2, 3, 7, 14, and 21 days after larval infection caused changes in histopathological features of broilers chickens. This infection caused hydropic inflammation and degeneration of liver cells, cholangitis, and eventually necrosis of the cells. Exposure to infection over a long period of time can worsen liver cell and death. The current study aimed to analyze the description of chicken liver infected by L2 Toxocara Vivulorum larvae.

Histopathology Description of Chicken Liver Infected by L2 Toxocara Vivulorum


Incubate Turkey fertile eggs for 25 days


Diallel Analysis on Breast and Thigh Muscle Traits in the Cross of Three South African Indigenous Chicken Genotypes


**3 X 3 Diallel crossing**

The study was conducted to investigate the effect of crossbreeding on meat yield, meat color, and meat tenderness. Nine growth groups (*P × O, V × P, O × V, P × O × E, V × P × E, O × V × E*) were developed in a diallel cross mating system. The study suggested that *O × P* chickens produced better meat color and weight than other chicken groups.