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.
Antacid is a mixture of sodium bicarbonate, bicarbonate, and citric acid, which can neutralize stomach acidity and may stabilize the pH of post-mortem carcass and meat.

The first experiment aimed to compare the effects of manual and electric beak-trimming on feed intake, body weight, and some biochemical parameters of eight-week-old pullets. A total of 20 pullets aged 3 weeks were assigned to two treatment groups; those in group A received antacid supplementation in drinking water (0.10%) for three days pre-slaughter. It was found that the antacid supplementation increased the percentage of breast meat, while carcass yield, and thigh meat yield were not affected.

Acute Pain Responses of Pullets Subjected to Beak-trimming. Okoroafor ON, Okereke HN, and Udegbunam RI.

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The chickens’ beak trimmed with both methods experienced intense pain of varying degrees lasting up to 72 hours. In the second experiment, 40 eight-week-old pullets were assigned to four groups; group A was the control, group B was treated with a vitamin supplement, group C was treated with acetaminophen, and group D was treated with vitamin supplement plus acetaminophen. After 24 hours, chickens were beak-trimmed using a manual cutter. The results revealed that 2 hours PBT, plasma cortisol level in groups B, C, and D were significantly lower than that of the group 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. The packed-cell volume of group A was higher than that of group B at 2 and 6 hours PBT while total plasma protein level of group A was significantly lower than that of group B. Blood glucose was lowest in groups A and D at 6 and 24 hours PBT, while glucose level of group C was significantly higher than that of group B at 6 and 24 hours PBT. It is concluded that the pre-treatment with vitamins and NSAIDs could reduce stress and pain in debeaked chickens.


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 were divided into two groups; the first group was supplemented with antacid in drinking water (0.10%) for three days pre-slaughter. It was found that the antacid supplementation increased the percentage of breast meat, while carcass yield, and thigh, and organ meat yield were not affected.
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.

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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. The histomorphology of the small intestine was also affected by the use of maggot meal, with P3 having a different structure compared to the other treatments. The percentage of carcass parts was also affected by the use of maggot meal, with P3 having a higher percentage of muscle and a lower percentage of fat compared to the other treatments. Based on these results, it is recommended to use maggot meal at a concentration of 11.25% as a source of protein and a small amount of fat to improve the relative length of the digestive tract organs and the percentage of carcass parts in native chickens.

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

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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 inclusion of the feed supplement also improved the performance index and carcass weight. Based on these results, it is recommended to use the feed supplement at a concentration of 2.50 ml/L to 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 Gallus turcicus (Arabic Gold chicken), affecting egg production and luteinizing hormone (LH) concentration. The study was conducted using a completely randomized design and the hormonal status, especially progesterone hormone, which has been known to correlate with egg production, was analyzed. The LH concentrations were (1.36 ng/ml) and (1.34 ng/ml) in the control and (1.52 ng/ml) in the progesterone hormone injection group, respectively. It was concluded that progesterone hormone injection during laying periods had a significant effect on the egg weight, shape index, fertility, embryo viability, hatchability, and chick viability. Varying egg production peak and LH concentration were observed, with the progesterone hormone injection group reaching its peak at week 29, while the control group reached its peak at week 26. The analysis of variance followed with Duncan’s Multiple Range Test as a post hoc test for the quantitative data. The results presented that progesterone hormone injection had a significant effect on hen day production two and six weeks after injection. The progesterone hormone injection group was able to reach its peak production (82.9%) at week 29, while the control group reached its peak at week 26 (78.9%).

**ABSTRACT:** Tatfo Keutchatang FDP, Bouelet Ntsama IS, Medoua Nama G, and Kansci G. Biosecurity Practices and Characteristics of Poultry Farms in Three Regions of Cameroon. J. World Poult. Res., 11(4): 53-63, 2021; pii: S2322455X2100009-11. Poor biosecurity practices affect biosecurity in chicken farming and are associated with BS, showing a tendency of increase in the risk of disease outbreaks and provides good quality chicken products for human consumption. The outbreak of diseases correlated with BS, showing a tendency of increase in the risk of disease outbreaks. This study aimed to assess biosecurity practices in poultry farms in three regions of Cameroon (Centre, Littoral, and West) to support the efficient production of chickens by respecting biosecurity that drastically reduces the risk factors of MDV sero-positivity, as well as the status of occurrences and spread in the region. A total of 768 serum samples from 3 zones were collected and assayed for MDV. Moreover, to measure the association of host and environmental risk factors, the occurrences and spread of MD were identified in local and exotic chickens in northwest Ethiopia. A total of 768 serum samples from 3 zones were collected and assayed for MDV. Among chicken flocks in northwest Ethiopia, suggesting that environmental dust/dander and farm management systems might be a source of this disease for chicken infection. Besides, the study demonstrated, with an overall seroprevalence of 59.11%. The mixed-effect logistic regression analysis of variance followed with Duncan’s Multiple Range Test as a post hoc test for the quantitative data. The results presented that progesterone hormone injection had a significant effect on hen day production two and six weeks after injection. The progesterone hormone injection group was able to reach its peak production (82.9%) at week 29, while the control group reached its peak at week 26 (78.9%).
Etiology of Respiratory Diseases of Poultry Farms in North Coast

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 to attenuate the pathogenicity of *E. tenella*. Their feces were tested to observe oocysts production and clinical symptoms. The obtained data showed that the most optimal concentration to attenuate the pathogenicity was 1.5 ml of 1.1x10^7 cfu/ml of *Lactobacillus casei*.

**ABSTRACT:**
Formalin Potentials in the Pathogenic Attenuation of *E. tenella*.

**Keywords:** protozoa, attenuation, pathogenicity, *E. tenella*, *Lactobacillus casei*.

Isolation and Identification of Newcastle Disease Virus from Ducks Sold at Traditional Livestock Market Center in Indonesia.

**ABSTRACT:**
Ducks infected with the ND virus were isolated and identified using hemagglutination inhibition tests. Based on the result of the current study, out of 100 pooled samples, there were three to nine antibody-negative embryonated chicken eggs for 8-10 days. Hemagglutination and hemagglutination inhibition tests were performed for confirmation and identification of ND virus.

**Etiology of Respiratory Diseases of Poultry Farms in the North Coast**

Isolation and Identification of Newcastle Disease Virus from Ducks Sold at Traditional Livestock Market Center in Indonesia.

**ABSTRACT:**
Newcastle disease (ND) is one of the important infectious diseases in the poultry industry. The current study aimed to identify the respiratory problems in poultry farms in the north coast of Egypt. All 89 flocks were subjected to real-time PCR to investigate AI H9N2 virus. The samples of 31, 43, and 15 out of 89 flocks were selected for the positive results. Partial sequencing for selected viruses revealed that these viruses were related to G1-lineage of H9 viruses circulating in the Middle East and Egypt. Three H5N8 AI isolates were obtained from birds and tested for the positive findings. 22 out of 89 flocks were positive for AI H9N2 virus (2 layers + 2 turkeys), 32 out of 43 flocks were positive for IB virus (2 layers + 30 broilers), 24 out of 31 flocks were positive for ND virus (3 ducks). Finally, there is a need to devise a complete strategy to control the isolated respiratory viruses on the north coast of Egypt.
The present study aimed to estimate carcass characteristics of pure and crossbred indigenous guinea fowl (Numida meleagris) populations in Benin. The current study was carried out on 1320 (529 males and 791 females) adult (at least 24 weeks old) indigenous guinea fowls. Morphobiometric Characteristics and Biodiversity of Indigenous Guinea Fowl (Numida meleagris) in Benin was significantly diverse, but the most widespread plumage colors were pearl grey (30%), black (29.5%), and cinnamon (9.8%). The most common beak colors were grey (64.9%) and black-orange (33.7%). The most common wattles were relatively dominated by red-white (59.4%) and white-red (30.5%). The average live weight of guinea fowl was 1.34 kg in males which was 4.38% heavier than females. All the biometric measurements were significantly higher in males. The live weights of guinea fowl in the Sudano-Guinean zone (1.27 ± 0.24 kg) and Guinean zone (1.33 ± 0.28 kg). Principal populations of indigenous guinea fowl in Benin can guide farmers to select specific phenotypes with high potential for productivity and meat quality.

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Morphobiometric Characteristics and Biodiversity of Indigenous Guinea Fowl (Numida meleagris) in Benin was significantly diverse, but the most widespread plumage colors were pearl grey (30%), black (29.5%), and cinnamon (9.8%). The most common beak colors were grey (64.9%) and black-orange (33.7%). The most common wattles were relatively dominated by red-white (59.4%) and white-red (30.5%). The average live weight of guinea fowl was 1.34 kg in males which was 4.38% heavier than females. All the biometric measurements were significantly higher in males. The live weights of guinea fowl in the Sudano-Guinean zone (1.27 ± 0.24 kg) and Guinean zone (1.33 ± 0.28 kg). Principal populations of indigenous guinea fowl in Benin can guide farmers to select specific phenotypes with high potential for productivity and meat quality.

**Keywords:** indigenous guinea fowl, morphobiometric characteristics, biodiversity.