The Effect of \textit{In Ovo} Exposition to Ethanol Upon Osteogenesis of the Chicken Embryo.

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ABSTRACT

Excessive alcohol consumption by a pregnant woman may delay foetal development and may cause malformations. In this study, the model of the chicken embryo to demonstrate the teratogenic effect of ethanol (33%) on the chicken osteogenesis on the 10th day of embryonic development have been used. 49 fertilized eggs were used in present investigation. Hence, different doses of ethanol were injected into the chicken embryos at 33% (20, 40, 80μl) in the air space at gastrulation and, on the other hand, an equivalent amount of the mentioned doses of distilled water were injected into the control-group eggs which was done once in every two days in order to maintain a high concentration in the blood. Experiments were repeatedly and independently carried out for three times. The eggs were incubated in a humid incubator at the temperature of 37.7 °C and at 60-65% of humidity. On the 10th day of incubation, the embryos were taken out and fixed in formalin at 10%. After that, the eggs were sectioned at 5μm of thickness with a Leica micrtome and, then, stained with the Hematoxylin and eosin. Histological examination has revealed that the exposition of chicken embryos to ethanol (33%) delays the skeletal development in a dose-dependent manner by reducing the length of the cartilaginous proliferation zone and hypertrophic zone during the bone formation period. Furthermore, under the effect of ethanol, the cell proliferation activities were repressed. In conclusion, present results indicated that using ethanol to treat chicken embryos at early stages caused considerable malformations and a decreased in the embryo survival rate. The exposition to alcohol affects the chicken osteogenesis in a dose-dependent manner.

Keywords: Chicken embryo, Ethanol, Malformations, Osteogenesis, Teratogenic effect
Aflatoxin is a worldwide problem in poultry industries as it is known to contaminate poultry feed. Aflatoxin induces stress and increases mortality rate during infection in poultry, especially broiler.

**Recent Update: Effects of Aflatoxin in Broiler Chickens.**

**Research Paper**

Aflatoxicosis in broiler chickens. A total of 120 chickens were divided into four groups, group A fed with a basal diet without aflatoxin contamination, group B with aflatoxin (> 1 ppb 51 ppb 101 ppb), group C with aflatoxin (1 ppb 51 ppb), and group D with aflatoxin (1 ppb). Post-mortem sperm, obtained from epididymis and the vas deferens of 18 pairs of adult local chicken cock, was flushed and float-out for 10 min at 37°C and assayed for activity and quality. The quality was significantly higher (0.72±0.12 ml vs 0.48±0.12 ml) in flushing method compared to float-out method in terms of sperm motility. Significantly higher number of sperm per ml was observed in flushing method, and semen of Algerian local cocks can be preserved at 20°C for 24 h.

**The characterization of Post-Mortem Sperm of Local Chicken Cocks in Eastern Algeria.**

Concentration (3.33±1.63 million sperm vs 1.75±0.76 million sperm), initial motility (85.33±6.22% vs 42.33±12.33%), and viability (78.33±12.33% vs 48.33±7.68%) were significantly higher in flushing method, and semen of Algerian local cocks can be preserved at 20°C for 24 h.

**Parameters of Broiler Chickens.**

The aim of the present study was to determine the effect of different bedding materials on the hematological and serum biochemical parameters of the broiler chickens. A completely randomized design was employed for the research in which the treatment were five bedding materials including rice, hulls, groundnut hulls, wood shaving, and sharp sand. The birds were replicated three times each with ten birds in each experimental unit. The birds were fed a basal diet containing 16% CP and 3100 kcal/kg ME. A completely randomized design was employed for the research in which the treatment were five bedding materials (rice hulls, groundnut hulls, wood shaving, sharp sand, and control). The treatments were replicated three times each with ten birds in each experimental unit. Feed intake during the starter phase and entire trial period was recorded. Feed conversion ratio of T4 and T3 groups was better than T2 and T1. T3 and T4 were recommended for feeding as the highest feed intake than the other supplemental groups. The highest daily body weight gain was obtained in T3 and T4 groups. The findings also indicated in the hematological parameters that bedding materials caused significant difference in the hemoglobin content, WBC count, MCV, and MCH.

**Effects of Feeding Different Levels of Baker's Yeast on Performance and Hematological Parameters of Broiler Chickens.**

The effects of feeding baker's yeast performance of Cobb 500 broilers were studied. Four nearly isonitrogenous and isocaloric rations containing 0, 0.5, 1.5, and 2.5% of baker's yeast were prepared. 240 chicks with an average initial body weight of 42 g were randomly divided into 12 groups contained 4 treatments each. The CP content of the rations during the starter and finisher phases were 22% and 20%, respectively. The ME content of the rations during the starter and finisher phases were 3200 kcal/kg and 3100 kcal/kg, respectively. Baker's yeast can be an important feed additive, which can be included up to 2.5% in broiler diet with no adverse effects on growth performance and health parameters. The highest net income, marginal rate of return, and chicks' sale to feed cost were obtained for T3, the highest net income, marginal rate of return, and chicks' sale to feed cost were obtained for T3 and T4. Baker's yeast can be an important feed additive, which can be included up to 2.5% in broiler diet with no adverse effects on growth performance and health parameters.

**Recent Update: Effects Due to Aflatoxin in Broiler Chickens.**

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Microalgae Biomass Application in Commercial Broilers Nutrition and Their Efficacy

Using microalgal biomass in animal diets has been studied recently. Many species of cultivated microalgae can be used up to 5, 10 or 20% (W/W) in order to assess better performance on poultry production. In this study, the effects of microalgae supplementation on feed and water intake as well as enhanced viability of chickens. And in regards to immune protection rate and body weight gain. In conclusion, microalgae can be used in broiler ration control. In addition, the other 3 groups have fed on free microalgae biomass balanced ration and were found effective in maintaining animal growth performance, and in improving body weight. Using of microalgae collected from high rate algal ponds (HRAP) as a feed additive to broiler ration was studied. One hundred and twenty broiler chicks were divided into 6 groups of 20 birds each. All groups were fed experimental diets containing 0, 0.5, 1, 2, 5, and 10% W/W microalgae biomass and have variable vaccination schemes of live attenuated and inactivated Newcastle disease virus (NDV) vaccines genotype II or either non-vaccinated. The serological response and viral shedding post vaccination with NDV vaccines as well as similar control. In conclusion, the results revealed that the performance of broilers fed on high rate microalgae biomass diets was not significantly different from the control groups. In addition, the microalgae-fed groups showed similar immune response to those fed on the non-microalgae diets. Therefore, microalgae can be used as a feed additive to improve the performance and health of broilers.
ABSTRACT
Clostridium perfringens is the most important cause of enteritis in domestic animals, in chicken and turkey it well known as pathogen responsible for necrotic enteritis; hepatitis, and cholecystitis. The disease in turkey characterize by either severe form with high rate of mortalities or subclinical form of reduce growth rate and increase condemnation rate. The major factor responsible for pathogenicity of Clostridium perfringens was alpha toxin. The aim of present study was to prepare of Clostridium perfringens alpha Toxoid vaccine for controlling the necrotic enteritis disease. The vaccine was prepared at different doses depend on lethality of toxin (24, 48 and 96 Minimum Lethal Dose) for controlling necrotic enteritis disease. Antibody titer elicited by vaccination was measured by toxin neutralization test, ELISA, and challenge test. It revealed that antibody titer expressed by international antitoxin unit per ml was 7.4, 4.1 and 1.26 respectively according to the mentioned dose, and also the protection percent against challenge was 100% when vaccinated with either 48 or 96 Minimum Lethal Dose, while it gave 80% when vaccinated with 24 Minimum Lethal Dose. It concluded that use of Clostridium perfringens alpha Toxoid with recommended dose of 48 MLD able to protect turkey for 6 months.

Keywords: Alpha toxin, Clostridium perfringens, Turkey, Type A, Vaccine