The Effect of 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 chickens. The objectives of this study was to observe the pathological effects due to aflatoxicosis in broiler chickens. A total of 120 chickens were divided into four groups, group A contained chickens fed with aflatoxin-free ration, group B contained chickens fed with aflatoxin-ridden ration, group C contained chickens were injected with aflatoxin and group D contained chickens were injected with aflatoxin and were also injected with aflatoxin-ridden ration. The results showed that aflatoxin-ridden ration and aflatoxin injection caused significant decrease in the weight gain, feed conversion ratio, and mortality rate of broilers. The histopathological examination of liver, kidney, and muscle tissues revealed that aflatoxin-ridden ration and aflatoxin injection caused significant pathological changes in the liver, kidney, and muscle tissues of broilers. The present study concluded that aflatoxin is a serious problem in poultry industries and must be controlled to prevent its adverse effects on poultry production.
The microalgae were found effective in maintaining animal growth performance, and in improving body up to 5, 10 or 20% (W/W) in order to assess better performance on poultry production. 

One hundred and twenty broiler chicks were divided into 6 groups of 20 birds, three of them have fed on balanced broiler ration supplied with 1% weight per weight of microalgae as a feed additive. The results showed that the microalgae have no hazard effect on growth rate, weight gain, poultry viability and immune response. In addition, the other 3 groups have fed on free microalgae biomass balanced ration with no deleterious effect on growth rate, weight gain, poultry viability and immune response. In conclusion dried microalgal biomass harvested from HRAP can be used in broiler ration with no deleterious effect on growth rate, weight gain, poultry viability and immune response.

Furthermore, future studies should be applied with increasing microalgae percent in poultry feed to reach the optimal percentage of microalgae for the best performance on animal growth performance. 

Microalgae Biomass Application in Commercial Broilers Nutrition and Their Efficacy Against Challenge with Epidemic Newcastle Disease Virus in Egypt.
ABSTRACT

Clostridium perfringens is the most important cause of enteritis in domestic animals, in chicken and turkey it is well known as a pathogen responsible for necrotic enteritis, hepatitis, and cholecystitis. The disease in turkey is characterized by either severe form with high rates of mortalities or subclinical form of reduced growth rate and increased condemnation rate. The major factor responsible for pathogenicity of Clostridium perfringens is alpha toxin.

The aim of the present study was to prepare a Clostridium perfringens alpha Toxoid vaccine for controlling the necrotic enteritis disease. The vaccine was prepared at different doses depending on the lethality of the 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 was revealed that the antibody titer expressed as 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 the use of Clostridium perfringens alpha Toxoid with a recommended dose of 48 MLD can be used to protect turkey for 6 months.

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