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
Recent Update: Effects of Aflatoxin in Broiler Chickens.

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 aflatoxin in broiler chickens. The birds were fed with a basal diet without aflatoxin contamination, group B with aflatoxin (1 ppb to 51 ppb) and group C with aflatoxin (101 ppb to 501 ppb). The results showed that aflatoxin exposure significantly increased the mortality rate, reduced the body weight gain, and decreased the feed conversion ratio. The histopathological analysis revealed increased liver necrosis, kidney degeneration, and lung inflammation in the aflatoxin-exposed groups. The study concluded that aflatoxin is a significant risk factor for broiler chicken health and performance.

References:


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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 (W/W) of microalgae biomass and have variable vaccination schemes of live attenuated and inactivated Newcastle disease virus (NDV) vaccines genotype II or either non-vaccinated control. 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. Using microalgal biomass in animal diets has been studied recently. Many species of cultivated algae were found effective in maintaining animal growth performance, and in improving body biochemical properties. Furthermore, future studies should be applied with increasing microalgae percent in poultry feed.
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