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FACULTY OF VETERINARY MEDICINE - SKOPJE

PROCEEDINGS

DAYS OF
VETERINARY MEDICINE 2013



The 4th International Scientific Meeting

06-08 September 2013
Struga, Republic of Macedonia

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FOOD WORD

(Dino Kolegijevic)

This year the 4th International Scientific Meeting "DAYS OF VETERINARY MEDICINE 2013", is held from 6-8 September in Struga, Macedonia. The organizer is the Faculty of Veterinary Medicine at the University of "Sv. Cyril and Methodius" in Skopje.

The program offers unique opportunity for plenary lectures, scientific presentations and discussions regarding the following topics: animal health, food safety, public health, animal welfare and animal reproduction.

We believe that this meeting is an excellent occasion for renewal of old and meeting new contacts between scientists, veterinary practitioners and official veterinarians. Moreover it will be an open platform for dissemination the knowledge in the field of veterinary medicine.

Veterinary science has undergone tremendous development in all fields of research and gained ever-increasing importance in the management of many diseases. Faculty of Veterinary Medicine in Skopje continuously plays a fundamental role in these processes in our country and the region. These activities have generated significant results in various areas of the veterinary science and contributed greatly to the incorporation of science into every day veterinary practice.

The city of Struga is lying on the shore of Lake Ohrid, which is indeed the cultural heritage of the Republic of Macedonia and is ready to welcome all participants offering unique experience through a blend of beautiful lake, museums, old churches and above all traditional Macedonian food.

We kindly welcome you in Struga for this unique and stimulating event!

The Organizing Committee!

Serum P₄ levels showed cyclic activity of the ovaries in one sheep at 5th of September, 2012 and only one sheep did not establish ovarian cyclic activity.

Conclusion

Based on the results, we can conclude that the breeding season in the first year of study started two weeks later than the year after (~ September, 8th vs. ~August, 25th). Although this difference is not statistically significant, it points out that the change of geographical location could postpone the start of sexual activity in Pramenka of Lika sheep.

Key words: breeding season, environment, progesterone, Pramenka of Lika, sheep

P39 HISTOPATHOLOGICAL CHANGES OF THE LIVER IN T-2 MYCOTOXICOSIS IN BROILERS

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ABSTRACT

Introduction

T-2 toxin is a trichothecene mycotoxin produced by some *Fusarium* fungi. The harmful consequences of ingestion of dietary T-2 toxin have been examined in many species after its prolonged administration, but there are very few records of its toxicity after short term administration. Therefore, the aim of this study was to examine the effect of T-2 mycotoxigenesis on the histopathological changes in the broiler's liver after short term (3 day) administration.

Materials and Methods

One day old broilers were divided in two groups, both given feed and water ad libitum. T-2 mycotoxin was dissolved in water and given to the experimental group with daily oral gavages in doses of 0.250 mg per bird for 3 consecutive days. Histopathological analyses of the liver were made 24 hours after the last application. Liver was fixed in buffered 10% formalin, embedded in paraffin and 5µm thick sections were stained with haematoxylin and eosin.

Results

Compared to the control group, the body weight and the absolute liver weight of the broilers in experimental group were significantly reduced by 27,26 % and 19,19%, respectively. The relative liver weight was significantly increased by 5,30% compared to the control chicks. Histopathological analyses showed areas with destruction of the normal liver lobular histology, accompanied with cell necrosis. Mononuclear cell infiltration was evidenced in Kiernani's interlobular spaces. In all experimental animals, fat degeneration of hepatocytes was noticed in a form of small lipid vacuoles present in their cytoplasm. Fat degeneration was observed in the central parts of the lobules (around vena centralis), as well as in the ventral and periportal parts of the liver lobes. Dilated sinusoids were also registered.

Conclusion

The obtained results showed that three day application of T-2 mycotoxin provokes damage of the histological architecture of the liver with distinguish fat degeneration of the hepatocytes.

Key words: T-2 mycotoxin, liver, histopathology, broilers

P40 T-2 TOXIN AND IT'S EFFECT UPON BROILER'S TISSUE ANTIOXIDANT STATUS

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ABSTRACT

Mycotoxins are secondary metabolites of various fungal species and are unavoidable contaminants of food and feed, because their formation is weather dependant and effective prevention is impossible. From all Fusarium mycotoxins, trichotecenes, especially T-2 toxin has an enormous influence on poultry health and performance. Their presence in high concentrations in poultry feed may induce genotoxic, cytotoxic, cancerogenic and teratogenic effects. They are fast acting potent inhibitors of protein and nucleic acid synthesis, inhibition of mitochondrial function, effects on cell division, membrane effects and apoptosis induction. The changes that T-2 provokes in the biochemical status vary greatly, however, lipid peroxidation is considered as one of the most important. Inducing lipid peroxidation, trichotecenes influence on cell membrane integrity, resulting in different disorders in animals, such as malabsorption syndrome. The pro-oxidant effect of T-2 in many cases may be mediated via influence on the glutathione synthesis and the antioxidant enzymes. For that purpose, 40 day-old broilers were divided in two groups, both given feed and water *ad libitum*. T-2 mycotoxin was dissolved in water and given to the experimental group with daily oral gavages in doses of 0.250 mg per bird for 3 consecutive days. On day four, 5 chicks from each group were sacrificed after total ether anesthesia and liver tissue samples were taken for further analyses. Total glutathione and superoxide dismutase levels were determined in liver homogenates, as well as TBARS concentration. The results of this study demonstrate that trichothecenes stimulate lipid peroxidation with consequent decrease of GSH content and superoxide dismutase, and increase the level of TBARS in tissue liver homogenate. These data demonstrate that T-2 can adversely affect broiler health. The effects of this toxin may be exacerbated by other factors when under field conditions; hence, the potential detrimental effects of the toxin cannot be dismissed.

Key words: T-2 toxin, lipid peroxidation, liver homogenate, broilers