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Abbreviation

A/G ratio	=	Albumin/Globulin ratio.
ALP	=	Alkaline Phosphatase.
ALT	=	Alanine amino Transferase.
AST	=	Aspartate amino Transferase.
ATA	=	Alimentary Toxic Aleukia.
BUN	=	Blood Urea Nitrogen.
B.wt.	=	Body Weight.
E.coli	=	Escherichia coli.
E-GM	=	Esterified-Glucomannan.
EDTA	=	Ethylene Diamine Tetra Acetic acid.
F.	=	Fusarium.
FAO	=	Food Agriculture Organization.
GGT	=	Gamma Glutamyl Transferase.
GSH	=	Glutathione.
HB	=	Hemoglobin.
HSCAS	=	Hydrated Sodium Calcium Aluminosilicate.
KGY	=	Kilo Grey
LD50	=	Lethal Dose 50.
LDH	=	Lactate Dehydrogenase.
MCV	=	Mean Corpuscular Volume.
MCH	=	Mean Corpuscular Hemoglobin.
MCHC	=	Mean Corpuscular Hemoglobin Concentration.
MOS	=	Mannan oligosaccharide.
PCV	=	Packed cell volume.
Ppb	=	Part per billion.
Ppm	=	Part per million.
RBCs	=	Red Blood Cells.
SAC	=	Super Activated Charcoal.
SDA	=	Sabaraud's Dextrose Agar.
Spp.	=	Species.
T-2	=	Trichothecene.
TDI	=	Tolerable Daily Intake.
TLC	=	Thin Layer Chromatography.
T.P.	=	Total Protein.
WBCs	=	White Blood Cells.
WHO	=	World Health Organization.
Y.E.	=	Yeast Extract.

Summary

Poultry industry is considered one of the most important industries in Egypt and it affects in the national income. This industry faces some problems, mycotoxicosis is one of them.

Mycotoxicosis is a disease caused by consuming of poultry a ration contaminated with mycotoxins which are produced by fungi under certain conditions such as bad storage .

Fusarium spp . produce group of mycotoxins, trichothecenes (deoxynivalenol, nivalenol and T-2 toxin), zearalenone and fumonisins are the most important ones .

T-2 toxin affects poultry productivity, therefore this study was designed to study the effect of T-2 toxin on broiler chickens (on the body weight, hemogram, serum biochemistry, histopathology and measurement of toxin residues in chicken muscles). In addition to study the possibility of reduction of the toxic effects of this toxin by using of two methods, physical and chemical.

This work was done on two steps : The first step was a mycological survey of poultry rations where 150 samples of poultry feed and yellow corn were examined. Results showed that the predominant species of fungi were.. *Aspergillus* , *Mucor* , *Penicillium* and *Fusarium* in a descending frequency. *Fusarium* isolates in poultry feed were.. *F. aqueductum*, *F. tricinctum*, *F. stoveri*, *F. solani* and *F. oxysporum*. In yellow corn, *F. stoveri*, *F. fusaroides*, *F. moniliforme* and *F. oxysporum*. Mycotoxigenicity of some isolated *Fusarium species* revealed that all tested isolates were mycotoxigenic and produce toxins (Zearalenone and T-2 toxin) with different amounts.

The second step of work was an experimental study where 150 one day old chicks were divided into 5 equal groups treated as follows:

- 1.. control group, received ration mixed with sterile Y.E broth 37.5 ml/kg ration.
- 11.. as control plus HSCAS in a dose of 2 kg/ton ration.
- 111.. group received ration mixed with T-2 toxin present in Y.E broth 37.5 ml/kg ration.

IV.. as 111 group and treated physically by using of dry heat at 200°C for 1 hour.

V.. as 111 group and treated chemically by addition of HSCAS at a dose of 2kg/ton ration.

The experiment continued for 6 weeks in which clinical signs were observed and recorded and hemogram, serum biochemistry, histopathology and measurement of the toxin residues in the chicken muscles of control and all toxicated groups were studied.

Results revealed that clinical signs were in the form of severe reduction in birds body weight and abnormal feathering. Hemogram showed decrease in RBCs and WBCs count, Hb % and PCV values. Differential leukocytic count showed heteropenia and lymphocytosis. Serum biochemistry denoted decreased activities of ALT and GGT enzymes, increased activity of AST, decreased values of cholesterol, total proteins, albumin and globulin meaning that T-2 toxin affects the liver. Uric acid and BUN were increased markedly meaning that kidney tissue was affected by the toxin. Blood glucose values were increased clearly meaning that the pancreas was affected.

Histopathological examination revealed that T-2 toxin affected badly the digestive system organs (specially proventriculus, gizzard, liver and intestine) and kidney tissues.

Measurement of the toxin residues in toxicated chicken muscles revealed presence of toxin in all toxicated chicken muscles with different amounts.

Reduction of the toxic effects of T-2 toxin was a target of the study which was done by using of two methods, physical and chemical.

The study showed that the two methods reduced the toxic effects of T-2 toxin. Comparison between chemical and physical methods revealed that the chemical method was much better, as it is easier and more applicable. Also measurement of the toxin residues revealed perfect improvement and reduction in the toxin residues in the chicken muscles.

The present study reveals that T-2 mycotoxicosis causes serious effects on different poultry systems which are reflected badly on poultry productivity.

Therefore, more attention must be paid for the quality of feed consumed by poultry and all efforts must be taken to prevent fungal growth and mycotoxin production.

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