

BIOTEST TO THE EFFECTIVENESS OF UREA IN DEGRADATION AFLATOXIN B1 IN SUNFLOWER MEAL.

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ABSTRACT

This study was conducted in the Department of Plant Protection - College of Agriculture - University of Baghdad in order to evaluate the effectiveness of urea in degradation aflatoxin B1 in sunflower meal bio-available on broiler chickens type Fabro – CD. The Urea in concentration 5% caused the complete inhibition of the growth of fungus *A. flavus* and production of aflatoxin B1 and degradation it in sunflower meal. Results of bioassay proved that the presence of aflatoxin B1 at concentration 4.7 µg/g in sunflower meal in feed of chicken at one day age until 21 days caused significant reduction in chicken weight 12333, 286.67, and 360.0 gm and increased mortality 27% compared to the control treatment 186.67, 833.33 and 1066.67 gm and 0.0 respectively and weight of liver and spleen and gizzard 4.08, 0.19 and 8.96 gm/100gm compared to the control treatment 3.84, 0.08 and 6.53 gm/100gm and significant reduction in bursal fabricious weight and body weight 0.11 and 114.2 gm/100gm compared to the control treatment 0.16 and 270.4 gm/100 gm respectively. However , there was no significant difference in heart weight 0.90 compared to the control treatment 0.93. More ever , results showed that aflatoxin B1 caused significant reduction in blood characters , hemoglobin and number of red blood count RBC 5.29 gm/100gm and 1.81×10^6 cell/ml³ measurement to the control treatment 8.78 gm/100gm and 2.39×10^6 cell/ml³. However aflatoxin B1 achieved increase in number of white blood cell count WBC 22.96×10^3 cell/ml³ and heterophills to lymphocytes ratio H : L was 0.47 measurement to the control treatment 19.48×10^3 cell/ml³ and 0.24. Also , aflatoxin B1 changed the biochemical characteristics of blood , reduction in total protein , glucose and cholesterol 4.33, 1660.0 and 182.7 µg/100 ml and increased uric acid 9.67 gm/100ml compared to the control treatment 5.73, 176.7 and 192.7 µg/100 ml and 4.27 gm/100ml respectively with reduction of albumins (Pre-alb. , albumin , Postalb.) 1.61, 17.43 and 16.43% and globulins (α , β , and γ globulin) 13.66, 7.64 and 19.57% and transferrine 8.26% compared to the

control treatment 2.51, 24.88 and 20.73% and 15.26, 11.55 and 25.65% and 10.11% respectively.

As well as reduce the effectiveness of the enzymes GOT, GPT and ALP 7.3, 4.5 and 25.4 IU/ml compared to the control treatment 104.3, 9.8 and 32.4 IU/ml. Aflatoxin B1 reduced significantly moisture and protein of liver 70.32 and 15.66% compared to control 77.00 and 17.76% and increased lipid ratio 11.78% with no difference in ratio of carbohydrates and ash 1.03 and 1.21% compared to the control treatment 5.98, 1.04 and 1.22% respectively. The urea 5% showed a significant improvement in the all studied characters and reduce the negative effect of aflatoxin B1 in broiler chickens.