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EFFECT OF THE ADDITION OF MAIZE COB TREATED WITH *ASPERGILLUS NIGER* IN SOME PHYSIOLOGICAL TRAITS OF BROILER

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Abstract

This experiment was conducted in the poultry field of the Department of Animal Production / Faculty of Agriculture / University of Diyala to demonstrate the effect of adding different levels of green tea powder to broilers in production performance. A total of 225 non-naturalized Rose species were used at a mean age of 38 g and randomly distributed at 5 treatments with 3 replicates per treatment (15 chick per replicate). The first treatment was free of additive (control treatment) and the second, third, fourth, and fifth treatments included 0.1%, 0.2%, 0.3% and 0.4% of the corn meal powder treated with *A. niger*, respectively. The results of this study showed a significant superiority of the treatments of adding the corn shell treated with *A. niger* fungi in some physiological characteristics such as length of the flies and depth of the caterpillars, increase of the lactic acid bacteria in the fasting area, and in the concentration of total protein and serum protein in the serum compared to the control treatment. There was also a significant decrease in the level of cholesterol, triglycerides, low fat lipids, and significant decrease in E. coli counts in addition to control treatment. There was no significant difference in the concentration of high-density lipoproteins, glucose concentration, albumin protein, liver enzymes AST and ALT in meat serum between broilers and control treatment at age 42 days.

Keywords: *Aspergillus niger*, Precedent, Meat Breeder

Introduction

In view of the continued population growth and increasing demand for food sources, it was necessary to keep pace with this growing demand for the development of the poultry industry. The international companies specialized in the manufacture of commercial breeds and hybrids have started to grow rapidly and efficiently in food conversion. These high productivity traits accompanied administrative requirements and special health and nutritional care. (Naji, 2006), including the use of antibiotics to protect and treat infections caused by pathogenic microorganisms, which have risen with the rapid growth of modern commercial chicken crosses (Eid et al. 2010) , But the widespread use of these drugs has paved the way for the emergence of new strains of resistant pathogenic bacteria, which have become a threat to human and animal health, which called for many countries in the developed world, as well as the World Health Organization (WHO) to ban the use of antibiotics in poultry feed, In 1997, the World Health Organization (WHO) published its report on the risks of antibiotics in animal feeding, which called for the search for alternative alternatives to antibiotics Midilli *et al*., 2008; Bray, 2008. This has encouraged specialists to look for new and safe ways to preserve the health of birds hence the role of biomarkers and biomarkers (Westhuizen 2008).

These complex sugars are able to block receptors on the surface of pathogenic bacteria and thus prevent them from adhering to the receptors of the lining cells of the gastrointestinal tract, thus preventing infections caused by these bacterial species. These complex sugars are a component of the cellular wall of a number of fungi, including *Aspergillus niger*. For this reason, the addition of these former biota has been vital as a rich source of these sugars as well as their content of other important biological materials in the growth and health of birds (Zakaria *et al*., 2010)

Materials and Methods

The study included two axes: the first is the laboratory experiment and the second includes the field experience

1. Laboratory Experiment:

After obtaining many innate isolates of the soil, the development process was carried out on the surface of the corn in a solid state fermentation. The better isolates were selected for later diagnosis. A morphological test was performed using the normal optical microscope to determine the type of isolation that gave the best growth on the medium Corn, depending on scientific references Gugnani (2003) and Diba *et al.* (2007).

2. Field Experience

This experiment was conducted for the period from 25/10/2017 until 6/12/2017 and for 42 days.180 chickes Randomly distributed on The treatments were 45 for each treatment and three recurrences for treatment (15 chick / replicate). The replicates were distributed randomly at the first day of age. During the period 1 to 21 days, the diet fed 22.65% raw protein, 2966 kcal / kg of energy represented, and on Grewer diet at 22-42 days, containing 20.28% crude protein and 3153 65 kg / kg energy represented. The first treatment T1 was the non-additive comparison treatment, and the second treatment T2 included the addition of 1 g degraded corn / kg feed, and the third treatment T3 included the addition of 3 g degraded corn / kg feed and the fourth treatment T4 and the addition of 5 g dissolved corn / kg calorie feed on the relay. At the end of the experiment, at the age of 42 days, blood samples were withdrawn from Jugular Vein, collecting blood from 24 birds (2 birds per replicate (6 birds per treatment.) The vein was removed from the neck area immediately prior to slaughter and blood was collected with test tubes without anticoagulant, and put these tubes in the centrifuge at 3000 cycles / minute and for 15 minutes, to separate the serum from the cellular part, and the following tests were carried out:

Total protein, globulin was calculated according to Ghally and Abd El-Latif (2007). Lipid profile (total

cholesterol), triglyceride, and high-density lipoprotein-cholesterol (HDL-C), based on Richmond (1973), And estimated low-density lipoproteins. Low density Lipoprotein -Cholesterol (LDL-C) (Taherpour et al.2009) Glucose (mg/ml) (Coles 1986). ALT and ALT concentrations of both AST and ALT in serum were calculated based on Reitman and Frankel (1957). Using the complete random design (CRD) analysis, SPSS (2001) was used to analyze the evidence, Transactions using Dunkin Multi-Level Test (1955).

Results and Discussion

The results in Table (1) indicate a significant superiority of the addition factors in the total protein concentration on the control treatment. The concentrations of this characteristic in blood plasma were 3.03, 3.20, 3.33 and 3.60 (g / 100 ml) plasma blood. The third treatment was superior to the control treatment. The increase in the concentration of the protein was due to the increase of the concentrations of the globulin. The concentration of clopulin was recorded in the experimental parameters (1.63, 1.78, 1.92 and 2.18 gm / 100 ml respectively), and the concentration of albumin was not significantly affected in addition to the concentration of 1.40, 1.42, 1.40, 1.42 (gm/100 ml) plasma Blood respectively for the first, second, third and fourth treatment respectively.

Table 1: The addition of multiple levels of *A. niger* treated corn kernels to meat broiler diets in the concentration of glucose, total protein, albumin and lclopulin for plasma at 42 days (mean ± standard error)

Treatments	Glucose mg/100 ml	Total protein gm/100ml	Albumin gm/100ml	*Globulin* gm/100ml
T1	209.11±4.93	3.03±0.36 c	1.40±0.41	1.63±0.04c
T2	211.20±3.21	3.20±0.51bc	1.42±0.12	1.78±0.04bc
T3	219.00±2.64	3.33±0.86b	1.40±0.08	1.92±0.08b
T4	218.33±4.17	3.60±0.96a	1.42±0.05	2.18±0.10a
Significant level	NS	*	NS	*

T1: Comparative treatment without addition, T2: Add 1 g decomposed cornmeal / kg feed,: T33 g Dissolve corn kernels / kg feed, T4: 5 g decomposed cornmeal / kg feed

Vertical letters indicate significant differences between treatments

2: Moral level:, * refers to the level (0.05> p), N.S. Means that there are no significant differences between the transactions

The increase in the concentration of *Globulin* may be due to the degradation of the alcohols of the complex sugars, which act as a biochemical booster, which has the effect of increasing the number of beneficial bacteria such as lactic acid bacteria confirmed by the results of our study. These bacteria stimulate the activity of lymphatic tissues and organs associated with the digestive system (Alkhalf *et al*., 2010), and increase the activity of lymphatic tissues and organs leads to increased production of B cells (B. Cell), which enter the bloodstream and be a source of the composition of the immunoglobulin, which leads to increased serum clopiolin, as the main component of the antibodies P Body (Abdel-Fattah and others, 2008). These results are in line with the findings of Jubouri (2012). The addition of wheat bran with *T. harzianum* at 15 g / kg between 1 and 42 days significantly increases the concentration of serum and serum globulin. The feed additives did not affect the concentration of total protein and albumin, and Al-Kassie *et al*. (2008) found that the addition of 10 g / kg *Aspergillus niger* was not previously reported to be vital to broiler diets at the level of total protein, albumin and serum globulin compared to control group. Table 1 also indicates that there is no effect on the addition of corn-like decomposers to meat broiler diets in the blood glucose concentration. No significant differences in serum glucose concentration were observed between all the experimental parameters, (2004) when glucomannan was added to the diets used for broiler feeding, with no significant differences between the glucose concentration in blood plasma, While the results of our study did not match the findings of Al-Sudani (2005) and Al-Kassie (2008) Who found a significant decrease in the addition of *Aspergillus niger* fungus to the diet compared to the control treatment without additive. The statistical analysis of the cholesterol data in Table (2) shows that there were significant differences between the experimental parameters. The highest value was recorded by the fourth treatment, which exceeded all the experimental factors followed by the third treatment which exceeded both the second treatment and the control treatment. 172.63, 167.33, 155.33 and 150.33 mg / 100 ml respectively, and we can note that the decrease in concentration of cholesterol increases with the increase in the ratio of dissolved corn calves added to the diet, the decrease in cholesterol concentration may be attributed to the role of corn-like decomposers in increasing the number of lactic acid bacteria Light as it works (Kannan *et al*., 2005), and reduced intestinal pH by producing lactic acid and uric acid. These acids act on adhesion to steroid and prevent its uptake in the digestive tract (Kim, 2011). Degradation of corn acids was associated with bile acids in the digestive tract (Bell *et al*., 1999). This reduces the acidity of the bile, which in turn stimulates the production of yellow acids from cholesterol.

Table 2: The addition of multiple levels of *A. niger* treated corn kernels to chicken broiler diets in the form of serum fat at 42 days (mg / ml) (mean ± standard error).

Treatments	Cholesterol	Tri glycerides	HDL	LDL
T1	172.63±1.48d	99.33±1.45d	76.33±0.63	73.73±1.32c
T2	167.33±0.88c	92.33±1.88c	76.91±3.71	72.46±1.88c
T3	155.33±0.78b	85.12±1.28b	79.26±0.37	68.20±0.41b
T4	150.33±1.45a	78.33±1.20a	82.13±1.43	62.33±1.30a
Significant level	**	**	NS	**

T1: Comparative treatment without addition, T2: Add 1 g decomposed cornmeal / kg feed,: T33 g Dissolve corn kernels / kg feed, T4: 5 g decomposed cornmeal / kg feed Vertical letters indicate significant differences between treatments

2: Moral level:, * refers to the level (0.05> p), N.S. Means that there are no significant differences between the transactions

This finding is consistent with the findings of Al-Kassie *et al*. (2008), which found a significant reduction in cholesterol in meat broilers fed on a container of *Aspergillus niger* 10 g / kg with serum cholesterol level 186.50 vs 196.83 mg / 100 ml for control group . In Table 2, there is a significant decrease in triglyceride fat for the addition of the birds' blood at the end of the experiment period compared with the control treatment. The decrease in triglyceride may be attributed to the addition of corn-hydrolyzed molecules due to its effect on the increase in the number of lactic acid bacteria. These bacteria reduce the concentration of triglycerides in the blood (Kannan *et al*., 2005) by their ability to represent them (Jubouri, 2012) This result was consistent with that of al-Jubouri (2012), who observed a significant reduction in triglyceride levels in the meat broiler serum on a fermented wheat bran with *T. harzianum* at 15 g / kg at 70.83 mg / 100 ml compared with 97.67 mg / 100 ml Control group. It is noted in Table (2) that the level of high-density lipoproteins (HDL-C) did not have significant differences in all experimental parameters. (LDL-C) in the third and fourth treatments at the expense of the second treatment and the control treatment. The third and fourth treatment concentrations were 68.20 and 62.33 mg / 100 ml respectively compared to 72.46 and 73.73 mg / 100 ml for the second treatment and the treatment of control respectively, the reduction in concentration of low-density lipoproteins may be due In the serum of birds in the third treatments 3 g dissolved corn / kg of feed and 4 g dissolved corn kernel / kg feed, to the role of feed additives in reducing the level of cholesterol as confirmed by the results of our study that low-density lipoproteins are part of the components of cholesterol, Consistent with the findings of Jubouri (2012), noting that the addition of fermented wheat bran with *T. harzianum* mushroom to the chicken broiler led to a significant decrease in the level of low-density lipoprotein, which was associated with low cholesterol compared with the control group, while not There is a significant effect on the level of protein High-density fatty acids. From the results shown in Table (3), the addition of sorghum to the chicken broiler at levels 1, 3 and 5 g / kg did not show a significant effect on AST and ALT concentrations in serum. The values of AST concentrations for 176.66, 177.00, 181.33 and 185.33, respectively. The values of ALT concentrations were 13.35, 14.51, 15.30 and 17.16, respectively. The absence of a significant change in the AST and ALT concentrations in the serum of birds in this study indicates that the addition of dissolved corn calves up to the level of 5 kg / t to the bush and the length of the breeding period of 42 days did not affect the health and functions of the heart, liver and kidneys of birds (Abdl-Fattah *et al*., 2008).

Table 3: Effect of adding multiple levels of *A. niger* treated corn kernels to meat broiler diets in serum amino acids (AST and ALT) unit/l at age 42 days (mean ± standard error)

Treatments	AST	ALT
T1	176.66±6.48	13.33±1.45
T2	177.00±6.42	14.33±1.88
T3	181.33±6.32	15.12±2.57
T4	185.33±8.33	17.16±1.48
Significant level	NS	NS

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