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RESEARCH ARTICLE

EFFECT OF ADDING *CINNAMOMUM ZEYLANICUM* POWDER TO THE RATION OF BROILER ROSS 308 ON PRODUCTIVE TRAITS

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ABSTRACT

This study was conducted at Poultry Farm of Animal Resources Dept., College of Agriculture, University of AL-Qasim Green to investigate the effect of adding *Cinnamomum zeylanicum* powder to the ration of broiler Ross 308 on productive traits. The Breeding 90 broiler chicks Ross 308 day-old were randomly assigned to three treatments (by 3 replicates per treatment 10 chicks per replicate) and treatments were as follows: control group without adding *Cinnamomum zeylanicum* powder to the diet, add *Cinnamomum zeylanicum* powder by 2000 mg / kg feed (first treatment) and add *Cinnamomum zeylanicum* powder by 2500 mg / kg feed (second treatment). The experiment included a study of the following characteristics: body weight, weight gain, feed consumption, feed conversion efficiency and mortality. The results indicated that the addition of *Cinnamomum zeylanicum* powder in 2000and 2500mg / kg feed to broiler dietled to a significant improvement in all the qualities of productivity compared to the control group. Concluded from this experience, that in addition to *C innamomum zeylanicum* powder to the diet can lead to improved performance of thebroilerproduction.

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INTRODUCTION

Characterized by commercial hybrids for broiler chickens weights high body at marketing as a result of genetic improvement and development of poultry housing equipment (Jackie, 2003), which reflected negatively in the lower body's immunity and resistance to avian diseases and various stress where it was noted there is a negative correlation between body weight and immune response in broiler chickens (Qureshi and Havenstein, 1994) that Alone producers of chicken meat to use medical drugs through education period to reduce the incidence of pathological injuries and reduce the proportion of mortality, which made the researchers are looking for ways to raise the body's immunity and reduce the chances of bacterial infections disease in broiler chickens, It is this means the use of medicinal herbs as additives in feed rations of broiler chickens. Students are the bark of a tropical evergreen plant permanent dense tree can reach a height of ten to forty meters. Native to Sri Lanka, but also grown in Southeast Asia, South America and western India. A platoon of Alsamarobiat, upright leg above the 3-5 meters, successive vehicle leaves, yellow flowers and a small, small fruit resembling cloves.

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Peel studying the volatile oils containing terms of up to 4%, and the scientific name for learners is Cinnamomum zeylanicum and there are other labels such as Aldarchina or cinnamon and colloquially students and powder scholars considered a medicinal herb, which is marked by many of the active compounds, containing scholars oil on a compound known as (cinnamaldehyde) which is attributable to more pharmacological effects as well as the compound (eugenol), which is the second compound in the oil, which accounts for tranquilizing effect (Kim *et al*., 2006), each containing 100 grams of students, according to the Ministry of Agriculture American food on the following information: Calories: 247%, fat: 1.24%, saturated fat: 0.34%, carbohydrates: 80.59%, Fiber: 53.1%, proteins: 3.99%, cholesterol: 0%. As Cinnamon scholars contain phenolic and Filafinuh compounds that have an effect counter to the growth of the bacteria causing the corruption of food Friedman *et al*. (2000) and appeared through chemical diagnosis of powder scholars fit on 14 types of volatile oils-effective antimicrobial, especially turbines, ketones and hydrocarbons and other vehicles (Takizawa, 2001) as the scholars contain contain a substance, Polyphenol and characterized by so doing, similar to the reaction of insulin and the therapeutic referred to as an anti-bacterial and fungi and effectiveness of antioxidant (Anderson, 2004) and indicates a number of studies to its role as an antioxidant and sink to the

image of fat in the blood of poultry, including Chicken meat in order to usability to curb free radicals (Ciftci *et al*., 2010) and contain the students on what is known as (Insulin potentiating Factors) which plays an important role in reducing the level of glucose in the blood (Khan *et al*., 1990) as the learners role in influencing the number of blood cells White (Koh *et al*., 1998). Due to the lack of studies on the impact of student powder on the performance of poultry in Iraq, so it was the goal of this study was to determine the effect of adding students Cinnamomu zeylanicum powder to a ration Ross 308 broiler chickens throughout the period of education on productive performance.

MATERIALS AND METHODS

This study was carried out at the poultry farm of Animal Resource college of Agriculture, University of AL-Qasim Green from 14/3/2015 to 18/4/2015. Use the 90 chick broiler chickens Ross and an average weight of 43 g. Been raising chicks in cages ground dimensions (2 × 2) m, and chicks were distributed randomly on three treatments (by 3 replicates per treatment 10 chicks per replicate), It has been providing feed for the birds freely and fed the birds on a ration (Table 1). *Cinnamomum zeylanicum* powder was added to the ration from the age of one day, as follows: control group without adding *Cinnamomum zeylanicum*powder to the ration, as well as *Cinnamomum zeylanicum*powder by 2000 mg / kg feed for the first treatment and *Cinnamomum zeylanicum* powder by adding 2500 mg / kg feed the second treatment.

The following characteristics were estimated weekly: body weight, weight gain, average daily feed intake, feed conversion efficiency and the proportion of mortality. Where it was estimated rates of these attributes for each week of the experiment weeks amounting to five weeks. Used a randomized complete design Completely Randomized Design to study the effect of various transactions in the traits, and compared the moral differences between the averages using polynomial test Duncan (Duncan, 1955) and use statistical software ready SAS (SAS, 2010) to analyze the data.

RESULTS AND DISCUSSION

Results of the experiment showed no significant effect of the transactions *Cinnamomum zeylanicum* powder on the rate vivo weight per week the first and second age chicks Table (2), either when the third week of life chicks outperformed the first treatment and the second morally (P<0.05) on the control group with the highest live weight of the body was (670.53 and 661.31 g / bird) respectively, while the control group recorded a live body weight was (615.21 g / bird) and showed the results of the fourth and fifth week to the superiority and the second first treatment was significantly (P<0.05) in the rate of body weight live on the control group where the first transaction recorded body live weight was (1100.31 and 1562.61 g), respectively, and the second treatment (1090.24 and 1512.48 g), respectively, while the control group the lowest recorded live weight of the body and was (1020.53 g), respectively, and (1410.34 g) Straight.

Table 1. Composition of experimental ration

Ingredients (%)	Starter	Grower
	1 – 21 days of age	22 – 35 days of age
Yellow corn	59	35
Wheat	-	32.5
Soybean meal	30	20
Protein concentaverage(1)	10	10
Sunflower oil	-	1.5
Limestone	0.7	0.7
Salt	0.3	0.3
Total	100	100
Calculated chemical structure (2) (%)		
Crude protein	23.12	20.42
ME, Kcal / Kg feed	2936	3068
Lysine	1.30	1.07
Methionine	0.53	0.48
Calcium	0.92	0.91
Available phosphorus	0.55	0.46

(1) Protein concentaverage used was Golden which imported from Jordan. However, this concentaverage provided per Kg: 49% crude protein; 2900 ME K cal / Kg; 15% crude fat; 20% Ash; 5.6% calcium; 3.1% available phosphorus; 3.4% lysine; 2.4% methionine; and 3.2% methioinine + cystine.
(2) Chemical structure was calculated according to the analysis of diet material found in NRC (1994).

Table 2. Effect of *Cinnamomum zeylanicum* in addition to the ration on mean body weight (g) Age (week)

5	4	3	2	1	Treatments
7.65±1410.34b	5.96±1020.53b	5.44±615.21b	8.00±362.67a	8.40±141.66a	control group
7.51±1562.61a	5.12±1100.31a	9.31±670.53a	7.10±374.12a	6.35±143.21a	first treatment
6.13±1512.48a	4.41±1090.24a	8.10±661.31a	4.03±370.32a	8.52±145.16a	second treatment
*	*	*	N.S	N.S	Level of significance

NS : No significant.* : P<0.05

Table 3. Effect of *Cinnamomum zeylanicum* in addition to the ration on weekly weight gain (g) Age (week)

5	4	3	2	1	Treatments
3.08±389.81b	405.326.32±b	13.05±252.54b	6.24±221.01a	4.12±98.56a	control group
5.17±462.30a	429.787.14±a	6.13±296.41a	7.21±230.91a	100.16 6.11±a	first treatment
1.10±422.24a	3.11±428.93a	6.35±290.99a	6.51±225.20a	102.01 3.42±a	second treatment
*	*	*	N.S	N.S	Level of significance

NS: No significant.*: P<0.05

Table 4. Effect of *Cinnamomum zeylanicum* in addition to the ration on weekly feed intake (g) Age (week)

5	4	3	2	1	Treatments
7.77±892.71a	756.496.55±a	5.10±710.43a	8.44±397.50a	5.31±193.75a	control group
6.54±788.13b	652.616.50± b	3.41±704.41a	4.11±388.05a	3.32±190.31a	first treatment
4.15±810.52ab	6.44± 671.66b	5.21±696.73a	5.42±381.62a	2.51±189.11a	second treatment
*	*	N.S	N.S	N.S	Level of significance

NS : No significant.* : P<0.05

Table 5. Effect of *Cinnamomum zeylanicum* in addition to the ration on the feed conversion ratio (g feed/ g gain) Age (week)

5	4	3	2	1	Treatments
2.29±0.12a	1.860.11±a	0.11±2.81a	0.07±1.79a	1.96±0.08a	control group
1.700.05±c	1.510.07±b	0.13±2.37b	0.05±1.68a	1.90±0.05a	first treatment
1.91±0.04b	1.56±0.03b	0.10±2.39b	0.03±1.69a	0.06±1.85a	second treatment
*	*	*	N.S	N.S	Level of significance

NS : No significant.* : P<0.05

Table 6. Effect of adding *Cinnamomum zeylanicum* to the ration on mortality rate

1-5 weeks		Treatments
a	**0.03**±1.66	control group
a	**0.03**±1.66	first treatment
b	**0.0**±00.00	second treatment
*		Level of significance

*:P<0.05

The results of Table (3) lack of statistically significant differences in the rate of weight gain during the first week and the second week of the experiment and all transactions. While his outweigh the moral (P<0.05) when the third week of life chicks, where the first transaction recorded a second treatment the highest rate of increase the weight as compared to control was (296.41 and 290.99 g / bird) respectively, while the control group recorded a rate increase by weight was (252.54 g / bird). And continued to exceed the first treatmentsand second morally (P<0.05) to the control group in the fourth and fifth week where the following values (429.78 and 428.93 g), respectively, and (462.30 and 422.24 g), respectively, while the control group recorded the lowest rate of increase in the weight and was (405.32 g) and (389.81 g), respectively.

Notes from the Table (4) the lack of significant differences in feed consumption for all experimental treatments rate in the first two weeks and the second and third of the age of chicks, either when the fourth week of life chicks recorded a control group and a difference of moral (P<0.05) higher feed consumption rate stood at (756.49 g / bird) while treatment the first and second recorded feed consumption rate (652.61 and 671.66 g / bird), respectively, either when the fifth week of life chicks and she continued to control range of the registration of the highest feed consumption rate stood at (892.71 g), followed by a second treatment, without difference moral and recorded (810.52 grams), while the lowest rate recorded for the first treatment for feed consumption reached (788.13 g).

Significant differences did not appear in the efficiency of feed conversion weekly broiler chickens of all experimental treatments per week (1 and 2) Table (5), either when the third week the control group the highest recorded rate of feed conversion efficiency and are significantly (P<0.05) on each of the first treatment, second and recorded (2.81 gm Weight / g feed) while the first treatment recorded and the second the following values (2.37 and 2.39 g weight / g feed) respectively, and continued control group during the fourth and fifth week of the age of the experiment week highest rate of feed conversion efficiency compared treatment first and second terms of recorded (1.86 and weight 2.29 g / g feed) respectively, while the first and second treatment recorded the following values (1.51 and 1.56 g weight / g feed) respectively (1.70 and 1.91 g weight / g feed) respectively.

Table (6) shows the effect of adding *Cinnamomum zeylanicum* powder to the ration in the proportion of college mortality rate for broiler chickens during the duration of the experiment, amounting to 35 days where recorded group (control) is the first treatment (2000 mg / kg feed) ratio mortality rate was (1.66 and 1.66%) during the probationary period while there were not any mortality rate in the second treatment (2500 mg / kg feed).

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