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### Effect of Adding Different Levels of the Nutrient Powder to the Ration in Some Physiological Characteristics of the Blood of Broiler Chickens Ross 308

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#### KEYWORDS

Nutrient powder, physiological characteristics of the blood, broiler chickens.

#### A B S T R A C T

This study was conducted at Poultry Farm of Animal production Dept., College of Agriculture, University of AL-Qasim Green to investigate the effect of adding different levels of the Nutrient powder to the ration in some physiological characteristics of the blood of broiler chickens Ross 308. Use the 180b roiler chicks Ross 308 day-old were randomly assigned to four treatments (by 3 replicates per treatment 15 chicks per replicate), and treatments were as follows: first treatment (control) without adding Nutrient powder to the ration, add Nutrient powder by 5 g / kg feed (second treatment), add Nutrient powder by 7.5 g / kg feed (Third treatment) and add Nutrient powder by 10 g / kg feed (four treatment). Blood traits included in this study were : Red blood cells counts, hematocrit, hemoglobin concentration, Mean Corpuscular Volume (MCV), Mean Corpuscular Hemoglobin (MCH) and Mean Corpuscular Hemoglobin Concentration (MCHC). The results indicated no significant differences between the experience of all treatments in the qualities that have been studied except recipe Mean Corpuscular Volume (MCV) and Mean Corpuscular Hemoglobin (MCH), where outperformed Third-treatment when the fifth week was significantly ( $P < 0.05$ ) compared to other treatments.

#### Introduction

It emerged in recent years among scientists toward gradually increasing to refer to methods of folk medicine that was prevalent in ancient times any use of herbs and plants, including wild and cultivated for medicine. There is no doubt that the Iraqi environment containing rich flora vehicles that are

important medical and can be inferred from the prevalence of use in folk medicine, powder of Nutrient is to raise the effectiveness of some of the essential oils of plants and spices to improve the palatability of feed and is aperitif natural suppressant. It allows its use as a product of the

supplementary feed with a distinctive taste and aroma and flavor spices, and is characterized by private poultry Nutrient as yellowed fine powder diameter (300 microns). Density  $0.60-0.70 \pm 0.05$  kg / l. Nutrient added to the diets of various poultry, is compounded in the hanger broiler chickens by 100 g / t. And to birds, turkeys by 150 g / t for diets initiator, growth and final.

Nutrient powder blend of extracts of six medicinal plants, three of which essential oils for each of the plants marjoram, thyme, cinnamon and three other powdered form of spice each of ginger, turmeric, pepper plants composed. And then achieve the expected benefit, which contain these ingredients of effective materials both in essential oils or spices powder by improving the nutritional value of feed. The oils are available in lotion and containing active substances that have the ability to improve digestion and resistance to potential pathogens in the gut of poultry.

Powdered Nutrient contain active ingredients working to increase the metabolic rate of the supply needs of the body of oxygen and nutrients also contains phenolic compounds such as Thymol, Carvacrol are considered antioxidants are highly effective and thus protect red blood cells from damage that may be incurred as a result of oxidative stress as it improved antioxidant activity through the transfer of oxygen necessary for the formation of blood hemoglobin (Burton and Guion, 1968; Dorman and Deans, 2000; Bozin *et al.*, 2006). It contains the Nutrient on phenolic compounds such as terpenoids, flavonoids within the essential oils and spices are anti-inflammatory and work factors help maintain the level of white blood cells (Craig, 2001; Choi *et al.*, 2002; Blomhorff, 2004) and contain powder of Nutrient active

substances such as Cinnamaldehyde have a significant role in enhancing the function of the immune system in the body of the bird and be anti-bacteria and microbes (Ammar and others, 1992; Haraguchi *et al.*, 1996; Mastura *et al.*, 1999). it also has a very important active substances called Carvacrol material thymol and those materials in addition to being antimicrobial and fungal has proven it stimulates cells to secrete like substance interferon, which prevents attack the virus to cells as it increases the production of special antibodies IgG as it can increase the phagocytic ability of cells and direct impact on the composition particular cytokines and that cytokines when excreted increase combat capability of cells and increase T.cells cell activity and responsible for cellular immunity cellular immunity They also have a role a direct some of the virus through their ability to inhibit an enzyme of the RNA Transcriptase responsible for viral replication inside cells (Abou-ElKhair *et al.*, 2014). From the foregoing it was the aim of this study was to determine the effect of adding different levels of the Nutrient powder to the ration in some physiological characteristics of the blood of broiler chickens Ross 308.

## **Materials and Methods**

This study was conducted at Poultry Farm of Animal production Dept., College of Agriculture, University of AL-Qasim Green Use the 180 broiler chicks Ross 308 day-old were randomly assigned to four treatments (by 3 replicates per treatment 15 chicks per replicate), Been raising chicks in cages ground dimensions (2 × 2) m,It has been providing feed for the birds freely and fed the birds on a ration (Table 1).And treatments were as follows: first treatment (control) without adding Nutrient powder to the ration, add Nutrient powder by 5 g / kg feed (second treatment), add Nutrient

powder by 7.5 g / kg feed ( Third treatment) and add Nutrient powder by 10 g / kg feed (four treatment). Blood traits included in this study were: Red blood cells counts, hematocrit, hemoglobin concentration, Mean Corpuscular Volume (MCV), Mean Corpuscular Hemoglobin (MCH) and Mean Corpuscular Hemoglobin Concentration (MCHC).

The blood collection in weeks 3 and 5 of 6 birds of each transaction (2 birds from each repeater) wildly as the collection of blood from a vein brachial where the use of pipeline container blocker Potassium EDTA anticoagulant to prevent blood clotting PCV been calculated using the lattice tubes at a private container mind clotting by the way in which he referred Archer (1965). Hemoglobin concentration was estimated by turning in to a complex compound Cyanomethemoglobin using reagent Drabkins reagent and by the way in which it pointed (Varley et al. 1980) and as the red blood cells count according to the method referred to by Natt and Herrick (1952).Data were subjected to an ANOVA using the General Linear Models (GLM) procedures of SAS (2010). Significant treatment means were separated by using the multiple range test of Duncan (Duncan, 1955).

## **Results and Discussion**

Notes from the table (2) Effect of adding different levels of the Nutrient powder in some physiological characteristics of the blood of broiler chickens Ross 308 after (three weeks on treatment).

Non apparent significant effects ( $p < 0.05$ ) of supplementing Nutrient powder with respect red blood cells counts, hematocrit, hemoglobin concentration.

The Mean Corpuscular Volume (MCV) and Mean Corpuscular Hemoglobin (MCH) and

Mean Corpuscular Hemoglobin Concentration (MCHC) it has been noticed a non-significant ( $p < 0.05$ ) deterrent were found between treatments under study.

Table (3) effect of adding different levels of the Nutrient powder in some physiological characteristics of the blood of broiler chickens Ross 308 (after five weeks on treatment).

Non apparent significant effects ( $p < 0.05$ ) of supplementing Nutrient powder with respect red blood cells counts, hematocrit, hemoglobin concentration.

What is the Mean Corpuscular Volume (MCV) and Mean Corpuscular Hemoglobin (MCH) observed, up significantly ( $P < 0.05$ ) in the Third treatment (Add 7.5 of powder the Nutrient g / kg feed) where he recorded the following values (111.08 femtoliters and 51.12 pg / cell), respectively, and may be due to the low numbers of red blood cells in the third treatment, which require it to increase volumes of cells to resist the shortfall in the number of red blood cells, or may be caused by the increase in volumes of red blood cells is the reason Hemoglobin increase in the weight of each cell. This result is consistent with Al-Kassie *et al.*, (2012), which noted a negative correlation coefficient between each of the total number of red blood cells and the rate of cell size and cell concentration Hemoglobin. While the first treatment shown (control) and treatment fourth significant decrease ( $P < 0.05$ ) for the previous recipes male (MCH) (MCV) where he recorded the following values (69.58 femtoliters and 28.41 pg / cell), respectively, and the treatment fourth (66.45 femtoliters and 27.17 pg / cell), respectively and Mean Corpuscular Hemoglobin Concentration (MCHC) it has been noticed a non-significant ( $p < 0.05$ ) deterrent were found between treatments under study.

**Table.1** Composition of experimental ration

Ingredients (%)	1 – 21 days of age	22 – 35 days of age
Yellow corn	30	30
Wheat	27.7	35.5
Soybean meal	28	20
Protein concentraverage <sup>(1)</sup>	10	10
Sunflower oil	3	3
Limestone	1	1.2
Salt	0.3	0.3
Total	100	100
Calculated chemical structure		
<sup>(2)</sup> (%)		
Crude protein	22.74	20.16
ME, Kcal / Kg feed	3078	3125.2
Lysine	1.02	0.95
Methionine + cystine (%)	0.83	0.75
Calcium	0.97	1.0
Available phosphorus	0.41	0.48

1 Life Company / Jordanian origin contain 44% protein 0.2800 kilo price 0.12% fat, 25% ash, 5% calcium, 2.9% phosphorus, 2.55% Mithaaonin + Sistine, 2.8% lysine.

2Chemical structure was calculated according to the analysis of diet material found in NRC (1994).

**Table.2** Effect of adding different levels of the Nutrient powder in some physiological characteristics of the blood of broiler chickens Ross 308 (Three weeks old)

MCHC g / 100 ml	MCH Pg / cell	MCV femtoliters	HB g / 100 ml	PCV%	RBC / 10 <sup>6</sup> ×1ml 3	Details Treatments
33.18±1.27	18.58±1.37	56.01±3.06	8.96±0.71	27.00±2.08	4.82±0.12	T1
33.15±2.72	18.91±1.34	57.05±5.20	9.06±0.78	27.33±2.33	4.79±0.33	T2
33.17±2.02	21.47±1.27	64.74±2.57	9.73±0.97	29.33±2.96	4.53±0.08	T3
33.21±1.34	23.84±1.35	71.79±2.15	9.30±0.17	28.00±0.57	3.90±0.09	T4
N.S	N.S	N.S	N.S	N.S	N.S	Level of significanc e

**Table.3** Effect of adding different levels of the Nutrient powder in some physiological characteristics of the blood of broiler chickens Ross 308 (five weeks old)

MCHC g / 100 ml	MCH Pg / cell	MCVfemto liters	HB g / 100 ml	PCV%	RBC / 10 <sup>6</sup> ×1ml 3	Details Treatments
40.82±2.47	28.41±2.57 B	69.58±3.14 B	9.66±1.52	23.66±2.40	3.40±0.14	T1
41.71±5.03	39.44±6.57 Ab	94.56±4.53 Ab	11.40±0.70	27.33±0.66	2.89±0.42	T2
46.02±3.68	51.12±4.25 A	111.08±2.71 A	12.73±0.69	27.66±2.02	2.49±0.11	T3
40.88±6.19	27.17±2.75 b	66.45±3.33 B	9.13±1.86	22.33±2.40	3.36±0.25	T4
N.S	*	*	N.S	N.S	N.S	Level of significance

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