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Abstract
This study was conducted in the Poultry house of the animal Production Department at the ministry of science. 360 day-old chicks [Ross-308] were randomly weighed and distributed to eighteen cages by six treatments, each treatment took three replicates, each replicate had 20 birds. herbs plants were added to the diets [Table 1] as follows: [T1 control], Turmeric 0.2% [T2], Turmeric 0.4% [T3], cubeb 0.2% [T4], cubeb 0.4% [T5], Turmeric 0.2% + cubeb 0.2% [T6]. Chicks were fed the experimental diet from 7-42 days of age. Data were collected and analyzed by the Completely Randomized Design, the means were compared using the Duncan’s multiple range test[15] by the statistical package for social sciences [16].

1.Introduction
The utilization of anti-biotics as feed additives related with capacity of maintaining residues in the meat and eggs of poultry, which had a harmful effects to man when consumed. Antibiotics have been restricted or banned in numerous nations due to these suspected residual effects [1]. The herbs and restorative plants have stood out because of their wide scope of potential beneficial impacts [2]. These alternatives should be good for animals and people, environment friendly [3]. Phytobiotics, mixes of plant source, are incorporated into poultry feed to support productivity through the improvement of digestibility, nutrient ingestion and end of pathogens in the animal gut [4]. Plants [for example turmeric and cubeb] have phenolics substances which have solid calming and hostile to oxidative properties and apply significant enemy of cancer-causing . Turmeric have bioactive substances such as curcumin, bisdemethoxycurcumin, demethoxycurcumin, which are disengaged from rhizomes of turmeric powder[5]. The substance of turmeric is curcumin [diferuloylmethane], which is insoluble in water and quite stable in the acidic pH of the stomach [6]. Curcumin , is yellowish turmeric colors and possess many pharmacological exercises including antioxidative,anticarcinogenic [7].

[8] demonstrated that the chickens fed supplemented turmeric eats less and had improved humoral immunity as evaluated by serum antibodies to Eimeria and enhanced cellular insusceptibility as estimated by concanavalin An induced spleen cell multiplication. Turmeric supplementation improved the cancer prevention agent limit of birds by increasing SOD levels and diminishing serum MDA concentrations [9]. cubeb is utilized as a flavor or as medicine in conventional medication for the treatment of stomach torment, asthma, looseness of the bowels, diarrhea, gonorrhea, and syphilis [10]; [11]. Studies have indicated that Piper cubeba has a few natural substances, which are generally referred to its lignans [12]; [13]. lignans of Piper cubeba have been recognized, which includes cubebin, hinokinin, and yatein are available in more noteworthy extent [4-5%] [14]. Disregarding the numerous studies on the natural properties of Piper cubeba, there are no reports assessing its effects in poultry nutrition. the current experiment studies the effect of feeding Cubeb [Piper Cubeba] AND Turmeric [Curcuma longa] on some blood traits , immune system and gut microbiota content in broiler chickens

2.Materials and methods
This study was conducted in the Poultry house of the animal Production Department at the ministry of science. 360 day-old chicks [Ross-308] were randomly weighed and distributed to eighteen cages by six treatments, each treatment took three replicates, each replicate had 20 birds. herbs plants were added to the diets [Table 1] as follows: [T1 control], Turmeric 0.2% [T2], Turmeric 0.4% [T3], cubeb 0.2% [T4], cubeb 0.4% [T5], Turmeric 0.2% + cubeb 0.2% [T6]. Chicks were fed the experimental diet from 7-42 days of age. Data were collected and analyzed by the Completely Randomized Design, the means were compared using the Duncan’s multiple range test[15] by the statistical package for social sciences [16].
Table 1. The composition and calculated analysis of experimental diets.

| Ingredient      | Starter | Finisher |
|-----------------|---------|----------|
| Corn            | 52.10   | 54.00    |
| Soybean meal    | 21.30   | 19.30    |
| Vegetable oil   | 1.20    | 1.20     |
| Rice bran       | 16.80   | 17.70    |
| Fish meal       | 5.00    | 4.00     |
| Calcium carbonate | 0.80  | 1.00     |
| Premix          | 0.80    | 1.00     |
| Methionine      | 1.00    | 0.90     |
| Lysine          | 1.00    | 0.90     |
| Total           | 100     | 100      |

Total Nutrient Composition NRC [1994]

|                | ME [kcal/kg] | Crude Protein [%] | Crude Fat [%] | Crude Fiber [%] | Methionine [%] | Lysine [%] | Calcium [%] | Phosphor [%] |
|----------------|--------------|-------------------|---------------|----------------|---------------|------------|-------------|--------------|
| Starter        | 2900.71      | 20.32             | 5.04          | 6.22           | 1.26          | 1.55       | 1.24        | 0.72         |
| Finisher       | 2902.62      | 19.02             | 5.09          | 6.31           | 1.14          | 1.42       | 1.36        | 0.68         |

Premixes contributed the following nutrients per kilogram of complete feed: vitamin A, 2,300 IU; vitamin D3, 400 IU; vitamin E,1.8 mg; vitamin B12, 3.5 mg; riboflavin, 1.4 mg; panthotenic acid, 2 mg; nicotinic acid, 7 mg; pyridoxine, 0.25 mg; folic acid, 0.15 mg; menadione, 0.3 mg; thiamin, 0.15 mg; manganese oxide, 35 mg; ferrous sulfate 35 mg; zinc oxide, 30 mg; copper sulfate, 60 mg; cobalt carbonate, 5 mg; potassium iodine, 0.6 mg; selenium vanadate,0.09 mg. Based on NRC [17].

2.1 Blood sampling

at the age of 42 days, three chicks from each treatment were injected intravenously in brachial vein with 0.2 ml of 10% suspension of sheep red blood cells to determine the activity of antibody. Blood samples were collected in heparin antiagglutination tubes as a substance for further blood physical characteristics study.

2.2 Hematological traits

The total red blood corpuscles [RBC’s] were counted using the double improved Neubauer chamber as described by [18]. Hemoglobin concentration [gm/dl] was determined using cyano- methemoglobin method [19]. haematocrit, packed cell volume, [PCV %] was measured by the metod described by [18]. Calculation of the absolute values or the erythrocyte indices, [MCV], mean corpuscular he- moglobin [MCH] and mean corpuscular hemoglobin concentration [MCHC] were calculated according to [20].Specific antibodies were estimated quantitatively by ELISA according to [21].

3. Result and Discussion

Results from table 1 and table 2 showed no differences between experimental treatments for broiler’s RBC’s, Hemoglobin %, PCV %, MCV , MCH, MCHC and broiler’s Lymphocytes %, H/L Ratio, Monocytes %, Eosinophils %, Basophiles % cells. In table 3 we can notice that the experimental diets had better immune response [table 4] compared to control diet, they recorded higher Cellular Immunity by 0.227, 0.223, 0.227, 0.232 For T3, T4, T5 and T6 respectively. The same trend was noticed for Newcastle immunity For T3, T4, T5 and T6 who recorded 2915.7, 2917.2, 2921.6, 2910.6 respectively. the treatments had higher relative weight of bursa of Fabricius by 0.121, 0.124, 0.125, 0.127 respectively. and Bursa of Fabricius index by 1.554, 1.848, 1.854, 1.860 respectively.
Table 2. Effect of cubeb and turmeric dietary inclusion on broiler's RBC's, Hemoglobin %, PCV%, MCV, MCH, MCHC.

| Traits                  | T1       | T2       | T3       | T4       | T5       | Significance |
|-------------------------|----------|----------|----------|----------|----------|--------------|
| RBC's n x 106/μl liter  | 5.54     | 5.12     | 5.33     | 5.00     | 5.28     | NS           |
| Hemoglobin %            | 10.20    | 10.60    | 11.13    | 10.61    | 10.54    | NS           |
| PCV%                    | 42.00    | 42.66    | 42.50    | 41.66    | 42.33    | NS           |
| MCV*10^-5 [fl]         | 65.67    | 65.22    | 64.69    | 65.89    | 66.88    | NS           |
| MCH*10^-5 [pg]         | 1.94     | 1.90     | 1.96     | 1.91     | 2.00     | NS           |
| MCHC [g/dl]            | 2.34     | 2.35     | 2.35     | 2.40     | 2.32     | NS           |

[T1 control], Turmeric 0.2% [T2], Turmeric 0.4% [T3], cubeb 0.2% [T4], cubeb 0.4% [T5], Turmeric 0.2% + cubeb 0.2% [T6].

These results agree with those of [8], who found that the chicks fed turmeric had enhanced humoral and cellular immune responses. And with the results of [22], who recorded an increase in the antibody titer value against Newcastle disease for broilers fed black pepper, turmeric which might be due to the mutual effect of active substances in black pepper and turmeric.

Table 3. Effect of cubeb and turmeric dietary inclusion on broiler's Lymphocytes %, H/L Ratio, Monocytes %, Eosinophils %, Basophiles % cells.

| traits                  | T1       | T2       | T3       | T4       | T5       | Sig.         |
|-------------------------|----------|----------|----------|----------|----------|--------------|
| Lymphocytes %           | 53.06    | 52.94    | 53.99    | 56.30    | 58.49    | NS           |
| H/L Ratio               | 38.03    | 37.56    | 38.64    | 33.81    | 38.56    | NS           |
| Monocytes %             | 16.00    | 15.91    | 15.80    | 15.82    | 15.84    | NS           |
| Eosinophils %           | 8.81     | 8.88     | 8.84     | 8.90     | 8.77     | NS           |
| Basophiles %            | 9.87     | 9.76     | 9.00     | 9.76     | 9.16     | NS           |

[T1 control], Turmeric 0.2% [T2], Turmeric 0.4% [T3], cubeb 0.2% [T4], cubeb 0.4% [T5], Turmeric 0.2% + cubeb 0.2% [T6].

[23] noticed the elevated antibody titer production which lead to better immune responses as recorded in this study might be due to turmeric supplementation to broiler diets, which might be caused as it has immunomodulatory action that could modulate the activation of B cells [24].

Our study has shown that the addition of cubeb pepper and turmeric has positive immune response results of chickens which is also in agreement with previous findings [25] with the use of cubeb and [26] with the use of black pepper and ginger in broiler chicken nutrition. [22] showed that the addition of black pepper and mixture of black pepper and turmeric powder to broiler chicken diet led to improved immune response of broilers. In support of this, [27] observed that the chickens immunized with an Eimeria profilin protein and fed diets supplemented with carvacrol, cinamaldehyde and capsicum oleoresin or turmeric oleoresin and capsicum oleoresin had increased body weights and antibody levels compared with immunized and infected chickens fed a non-supplemented diet. Additionally, [27] also observed that in vitro exposure of spleen cells to an extract of turmeric increased lymphocyte proliferation compared with the control group.

Table 4. Effect of cubeb and turmeric dietary inclusion on broiler's immune response

| traits                  | T1       | T2       | T3       | T4       | T5       | T6       | Sig.         |
|-------------------------|----------|----------|----------|----------|----------|----------|--------------|
| Cellular Immunity [DTH] | 0.213b   | 0.214 b  | 0.227 a  | 0.223 a  | 0.227 a  | 0.232 a  | **           |
| Newcastle immunity [ELISA] | 2719.6 c | 2846.7 b | 2915.7 a | 2917.2 a | 2921.6 a | 2910.6 a | **           |
| relative weight of bursa of Fabricius | 0.065 c | 0.098 b | 0.121 a | 0.124 a | 0.125a | 0.127 a | **           |
| Bursa of Fabricius index | 1.000d | 1.508 c | 1.554 a | 1.848 a | 1.854a | 1.860 a | **           |

[T1 control], Turmeric 0.2% [T2], Turmeric 0.4% [T3], cubeb 0.2% [T4], cubeb 0.4% [T5], Turmeric 0.2% + cubeb 0.2% [T6].
Conclusion
Broiler's diet supplemented with Cubeb [Piper Cubebaa] and turmeric [Curcuma longa] had no effect on Hemoglobin %, PCV %, MCV ,MCH, MCHC and Lymphocytes %, H/L Ratio, Monocytes %, Eosinophils %, Basophiles % cells, but the immune system response to the dietary supplementation of Cubeb and turmeric was higher than the control. Conflict of Interest: None of the authors have any conflicts of interest to declare. Source of Funding: The research was performed independently, there is no funding, influence over study design, analyses, manuscript preparation, or scientific publication. Ethical Clearance: The project was approved by the local ethical committee [College of Agriculture, Wasit University ].

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