COMPARATIVE STUDY FOR EFFECT OF DIFFERENT ADDITIVES FROM OLIVE LEAVE POWDER AND PALM POLLEN POWDER FOR POULTRY RATIO ON SOME BLOOD PARAMETERS AND BIOCHEMICAL PARAMETERS FOR BROILER

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Abstract

Background and objective : This study was performed to determine the effect of olive leave and palm pollen on some of the blood parameters and biochemical parameter for broiler type (Ross 308) . **Materials and Methods** in this study we use (160) chicks in age one day old and divided in to4 groups (40)chicks in each group.Group one (T1) control group.Group2 (T_2)added 1000mg/kg from olive leave powder . Group 3 (T_3)added 1000 mg/kg palm pollen powder . Group 4(T_4) added (500,500) mixture of olive leave and palm pollen powder it gave from one day age to seven week age . In end of study we collected blood samples to measurement the level of cholesterol ,low density lipoprotein(LDL),high density lipoprotein(HDL),very low density lipoprotein (VLDL), glucose, albumin, total protein ,Globulins ,white o blood cell , hemoglobin ,packed cell volume (PCV), the **result** improved significantly in groups that added mixture of olive leave and palm pollen powder there is lower in cholesterol ,low density lipoprotein(LDL) and increase in high density lipoprotein (HDL) compared with group one (T_1), group 2(T_2), group 3 (T_3), . group 4(T_4). And there is significant lower in blood glucose . And there is increase in significant for Globulins, albumin, and total protein and the result

Showed there is increase in significant for hemoglobin ,packed cell volume (PCV) white blood cell. The result showed significant lower in group 4 .The result showed that the group 4 was best from other groups for these study . **Conclusion** it was concluded that supplementation the combination for both palm pollen powder and olive leaf powder to the diets of broiler improved healthy by lower in cholesterol ,low density lipoprotein(LDL) and increase in high density lipoprotein(HDL) and blood glucose. increase in Globulins, albumin, total protein and blood parameter .

Keywords: *Pal Pollen Powder, Olive Leaf Powder, Broiler, Biochemical, Blood Parameters.*

Introduction

Using herbal as supporting additive to the poultry diet to improve the health and production of broiler so that we used important tow herbal plant like palm pollen and olive leaf powder.plm pollen contains distinct nutrients chemical composition it contains essential and non-essential amino acids , fatty acid and, protein ,carbohydrates, vitamins and minerals and antioxidant like phoenix ,p-coumaric ,flavonad , (Hazem,2011). Palm pollen important effect in stimulating immunity system .(Shihab,2018).and it has reinforcement effect in ovary function and egg production in laying hens (Irhayym,2014) and effect in fertility of male mice (AL-arrak,2010).The olive leaves it has different pharmacological effects where it is considered an antibacterial ,anti-inflammatory ,antioxidant,anti cholesterol and glucose (Lee, 2010) . Olive leaves contain compound called oleuropein which are considered natural compounds of linoleic acid linked with the glucose molecule there is no linoleic acid free in nature and concentrated in the leaves of the olive tree more than the dates by 3000 free and contains phenols it is also used in the treatment of lowering blood pressure because it has a diuretic and has a role in reducing blood sugar (Jemai and sayadi,2009) .

Materials and Methods

Experimental design : Use 160 (Ross 308) chicks in 1- 45 day old divided into4 treatment groups with four replicate each replicate contain10 chicks:

1-Group (1) control .

:- T_1

2-Group (2) T_2 :- treatment added 1000 mg /kg of olive leave .

powder

3- Group (3)T_3 :- treatment added 1000 mg /kg of palm pollen .

powder

4- Group (4) T_4 :- treatment added (500 /500)mg /kg mixture of olive leave and palm pollen powder .

This study was conducted at the poultry field of the animal production department

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at the end of the study (45th day) 10 bird from each group were slaughtered by cervical Jugular vein and take blood samples this samples were used chemical analyses serum total cholesterol .HDL and LDL and glucose concentration were measured using biochemical analyzer .

Palm pollen powder used in the study was provided from markets of Babylon governorate and olive leave was collected from different olive tree in Babylon governorate from Iraq different areas and then dried by natural drying methods then we grind the leaves to get the powder .

Collect Blood Samples

Blood samples were collected for the purpose of examination ,cholesterol , low density lipoprotein(LDL),high density lipoprotein(HDL),very low density lipoprotein (VLDL), glucose, albumin, total protein ,Globulins ,white blood cell , hemoglobin ,packed cell volume (PCV), the result improved significantly in groups that added mixture of olive leave and palm pollen powder there is lower in cholesterol ,low density lipoprotein(LDL) and increase in high density lipoprotein(HDL) .

The statistic analyses : The SPSS 15.0 soft ware (2000)one way Anova test was used for the comparision of the groups.

Table (1) Diet composition and calculated analysis

	Ingredient and analysis	(%) 1-21 day	(%) 22- 42 day
1	Corn	56	61.9
2	Soybean meal	29.5	21.7
3	Concentrated portion	10	10
4	Vegetable oil	2.5	4.5
5	Ground limestone	0.7	0.8
6	salt	0.3	0.4
7	Dicalcium phosphate	1.0	0.7
Chemical analysis			
1	energy	3000 Kcl	3104 Kcl

2	protein	22.6	20
3	Methionine %	0.60	0.56
4	Lysine %	1.56	1.36
5	calcium	1.12	1.12
6	phosphorus	0.42	0.42

NRC 1994

Results

As seen in Table (2) the administration of chicken diet with use a combination for both palm pollen powder and olive leaf powder induce significant differences ($p \leq 0.05$) in T4 compared to T1 and T2 ,T3 .there was reduce in titer of cholesterol ,LDL,VLDL, and TG . And the result showed significant of T2 in lowering the level of cholesterol ,LDL ,VLDL and TG. Compared with T3 and T1 .

Table (2) The level of serum cholesterol ,LDL,VLDL,HDL .and T.G .

Group	Cholesterol mg/dl	LDL	VLDL	HDL	T.G mg /100 ml
T_1	201 ±3.81 A	52.3±4.16 A	3.52±0.17 A	91±4.16 C	101±1.8 A
T_2	166±3.02 C	41.2±4.08 C	2.050±0.11 B	95.9±3.07 B	60.3±1.14 C
T_3	170±2.34 B	44.3±4.11 B	2.44±0.09 B	95.01±312 B	64.08±2.3 B
T_4	138±2.6 D	41.5±3.2 C	2.01±0.12 B	98.31±3.1 A	55.4±1.18 D

In table (3)The result showed the lowest mean of Glucose in T4 compared to (T1) and T2,T3the serum Total protein, Albumin and Globulin significant differences ($p \leq 0.05$) in T4 compared with T1 .

Table (3)Level of serum Glucose, Total protein, Albumin and Globulin .

Group	Glucose mg/dl	Total protein g/dl	Albumin g/dl	Globulin g/dl
T_1	197±4.9 A	2.2±0.11 B	1.5±O.11 B	0.7±0.12 C
T_2	170±5.6 B	2.98±0.21 B	1.4±0.8 C	1.43±0.7 B
T_3	173±4.92 B	3.1±1.01 A	1.9±0.86 A	1.5±0.7 B
T_4	160±3.9 C	3.75±1.21 A	1.9±0.85 A	2.1±0.3 A

In Table (4) the result showed that significant differences ($p \leq 0.05$) in T4 compared with T1 and T2,T3 in W.B.C, Hb and PCV .

Table (4) Level of W.B.C, Hb and PCV

Group	W.B.C $\times 10^{3/ml}$	Hb g/dl	PCV (%)
T_1	22±1.23 D	11±0.91 B	33±1.73 B
T_2	25±165 C	10.9±0.66 C	32.71±2.31 B
T_3	27±1.74 B	11.2±0.68 B	33.6±2.31 B
T_4	28±1.75 A	12.33±1.75 A	37.91±1.73 A

Discussion

This study indicated that use a combination for both olive leaf powder and palm pollen powder significantly decreased the level of parameter to TG, Cholesterol , LDL

. There is significant difference between treatment ($p \leq 0.05$) in table (2). The result showed significant ($p \leq 0.05$)T4 thanT3, T2 and T1 because of the dual effect to olive leaf and palm pollen. Olive leaf has poly phenols like oleuropein act on cholesterol excretion they promote the exces cholesterol via bile ducts duodenum and final faces (Coni,etal.2000) . And the result record significantlye for the T3than T1 this was agreement with (Amira.etal.2019) . Because the poly phenols phytosterols act on cholesterol and TG. Lower serum cholesterol by inhibiting intestinal uptake of the sterol and inhibit cholesterol absorption in the small intestine (Al-Salihi etal. 2013) . Olive leaves depressed the activities of lipogenic and cholesterogenic enzyme . Fatty acid syntheses ,glucose 6 phosphate , dehydrogenase and 3-hydroxy-3-methyl-glutryl COAreductase (Fki ,et al.2005) . Effect of palm pollen may be due to its contain of phytosterols which lowers the serum cholesterol by inhibiting intestinal uptake of the sterol, their ability to displace cholesterol from micelles in the small intestine underlies the mechanism that inhibits cholesterol absorption, leading to a 10% reduction in total serum cholesterol . Numerous well designed studies have documented the beneficial actions of these phytosterols on serum cholesterol(Al-Salihi and Hameed , 2013).

Table (3) showed the significant decrease ($p \leq 0.05$) for glucose in T4 compared with T1 and there is significant decrease of T3 compared with T2 and T1 . Low level of glucose as a result of the effect of oleuropein on the absorption of glucose thus reduce blood glucose by stimulate insulin realizing and intake of blood glucose and stimulate hepatic glycogen synthesis (Komaki etal .2003) ,(Wainstein etal .2012) .

Total blood protein ,albumin and glubioline are significant ($p \leq 0.05$) in T4 because that combination effect of palm pollen and olive leaf powder are lead to high rate of carbohydrates and protein and fatty acid this compounds effect on synthesis of lipoproteins and glycoprotein (AL-shaqrawi , 1998),(AL-shahib and Marshall,2003) .

In table (4) there is significant effect for T4 because the combination effect for palm pollen and olive leaf powder are lead to high rate of chemical compound like zinc (Zn) cadmium (cd) calcium (Ca) there is found in palm pollen and the olive leaf lead to increased mineral absorption and olive leaf contain API7G and LUT7G they are effect in differentiation cell to red blood cell (Samet, et al .2015).palm pollen was consolidated the humoral immunity and hematology .(Shihab,2018) .

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