



THE EFFECT OF OLIVE LEAFS AND SEED WATER EXTRACT FOR DIFFERENT LEVELS ON BODY PERFORMANCE OF JAPANESE QUAILS

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Abstract

The aim of this study was to measure the effect of olive leaf and olive seeds water extract on productive performance of Japanese quails. A total of 250 Japanese quails of 1 day old were used in this experiment, these birds were divided into 4 groups and fed on standard quails diets. Group were considered as control, group 1 were given 100ml of olive seed water extraction in drinking water, group 2 were given 100 olive leaves water extract in drinking water, group 3 were given 200ml of mixed olive leaves water extract 100 and 100 ml olive seed water extract in drinking water for 6 week. Olive leaves and seed water extract and mixed water extract had effected on body weight for all group which give in drinking water in week 2, 4 and 6 age to Japanese quails ($p \leq 0.05$), also body weight gain show ($p \leq 0.05$) in all group as compared with control group. While there was no significant differences at ($p \geq 0.05$) in food intake for all group that give olive leave and seeds or mix water extract in drinking water as compared with control. In week 4 and 6 all group 1, 2 and 3 showed ($p \leq 0.05$) in feed conversion ratio as compare with control group. In conclusion, olive leaves water extract and olive seed water extract can be used in drinking water of Japanese quails to enhance production performance.

Key words: Quails, olive leaves water extract, enhance performance, drinking, olive seed water extract.

Introduction

Over the past few decades, there has been a considerable increase in the number of studies conducted with natural plant in order to enhance animal performance egg yield (Zhao 2013). Egg yolk is one of the most important egg qualities for the consumers buying retail egg (Kanda Lokewmnee, 2009). There are many studies enhance to use natural plants in order to enhance animal performance, egg yield and egg quality of poultry (Mahmoud *et al.*, 2010). Olive tree Mediterranean oil plant. That interest in recent years rich in phenolic compound which have the important in biological properties (Botsoglou, 2012) Phenolic compounds like (hydroxyl tyrosol and oleuropein the research finding that olive oil phenolic are powerful antioxidants, anti-inflammatory and many biological activities with induce

healthful effects to the diet. (Sudjana *et al.*, 2009 and Aziz *et al.*, 1998). Olive leaves contain oleuropein about 1.0-14.0% while olive oil has 0.005 % to 2.0% (Beauchamp, 2005). Many studies on carried out japause quails dietary supplemented with leave of different plant sources (thyme, ginkgo, lacquer etc.) in order to know their effects on Japanese quails performance and egg cholesterol level (Cayan and erener.2015). This study carried out to evaluated the influential affect adding of olive leave and seed water extract and mixed in drinking water on body performance of Japanese quail performance.

Materials and Method

A total of 250 Japanese quails of 1 day old were divided in to 4 experimental group (control and 3 groups) each contain 60 Japanese quails, contribute randomly kept individually in cages in department of agricultural research

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at the ministry of science and technology, the Japanese quails were offered feed and water ad libitum for 6 weeks. The basal diet was formulated as (NRC 1994) (Table 1).

Martial %	Starter diet 2-3week	Growth diet 4-5 week	Finish diet 5-6 week
Corn	31.8	48	56
Wheat	25	9	3
Soybean meal	32	34	29
Crud protein	9	5	4
Oil	0.7	2	2
Calcium carbonate	1.25	1.7	5.7
Salt	0.25	0.3	0.3
Mean	100%	100%	100%
Chemical analysis			
Crud protein	24.66	21.7	20
Calories	2999.2	2945	2900
Calcium%	0.81	1.1	2.4
Phosphorus%	0.43	0.4	0.4
Lysine %	1.30	1.2	1.12
Methionine %	0.5	0.5	0.4
Meth+ Cystine%	0.68	0.85	0.75

Protein concentration (holde mix) each 1kgmcontain 40% pure protein, 3.5% fat,1% crud fiber, 6% calcium, 2100 kal, 3% phosphore, 2.20% salt, 3.25% lysine, 3.50% methionine, 3.90% meth + cysteine, vit D340000UN, vit B1 15 ml, vit B6 300 mg, vit E50 mg, vit B1 15mg, Vit B12 300mg, vit K3 30 mg, Fe 1000 mg, vit A200000UN, Cu 100 mg, Co 6 mg, Mg 1200 mg, Zn800mg, Se 2 mg, biotin 100 mg, chloride15 mg, folic acid 10 mg, niacin 200mg.

The olive leaf and seed collected after drying by sun than leaf analysis in laboratory held in the research laboratory in scientific and technological reach council of Iraqi). The water extract of olive leaf and seed: - after drying and grind them take 100 mg of powder leave or seed but it in one liter worm water 50^oc for 24 h, than filer than added in drinking water of bird (Riose *et al.*, 1987). Dry meter 937 crud protein 79, crud fat 21, crud fiber 191, and ash 49. Performed according to guide lines of AOAC (2005) is presented in Table 2.

Table 2 : chemical analysis of olive leaf.

Olive leaves	g /k.g
Dry matter	937%
Crud protein	79%
Crud fat	21%
Crud fiber	191%
Ash	49%

Body weight, Weight gain, Feed intake and feed

conversion ratio was record in end week 2, week 4 and week 6 (dressel haus and SA cker, 1977).

Statistical analysis

The statistical analysis was performed using the SPSS 16.0 (SPSS Inc., Chicago, IL, USA) the one-way analysis of variance (Anova) for 4 groups of experiment, Duncans.multiple Rang test used to identify the significant differences between the treatment means ($P \leq 0.05$) level (Duncan, 1995).

Results and Discussion

The results of current study presented in table 3 involved average of body weight for week 2, 4 and 6 for age old Japanese quails which gave olive leave extract water and olive seeds extract water and mix olive leaf with seed water extract in drinking water. Showed ($P \leq 0.05$) in body weight for 2 week (97.13, 98.6,100.4) when compared to control group 92.61. Also all group which give olive leave and seed extract water show $P \geq 0.05$ in week 4 and 6 as compared with control group.

Table 3 : Effect of olive leave and seed water extract and mix of olive leave and seed water extract in drink water on body weight of Japanese quails (mean \pm s.d).

Groups	2 week	4 week	6 week
Control	92.11 \pm 0.60 d	145.06 \pm 4.56 c	169.4 \pm 2.28 c
Group1	97.13 \pm 0.20 c	153.6 \pm 1.00 bc	175.1 \pm 4.63 bc
Group2	98.6 \pm 0.40 b	161.93 \pm 1.48 ab	185.8 \pm 4.18 ab
Group3	100.4 \pm 0.14 a	165.8 \pm 3.39 a	192.4 \pm 4.08 a

Control group =water with out addition, group2 =100 ml olive seed water extract in drinking water ,group 3= 100 ml olive leave water extract in drinking water, group 3=200 ml (100 ml olive leave water extract +100ml olive seed water extract in drinking water .in the same column with a superscript in common differ significantly at $P \geq 0.05$.

Table 4 showed the average of body weight gain for 2, 4 and 6 weeks which show the rustle of $P \leq 0.05$ in body weight gain for group 2 and 3 which record 92.26, 91.53 g while group 1 recorded higher than control 89.6, 85.9. Also showed $P \leq 0.05$ in week 4 of age to group 2 and 3 on group 1and control .while in week 6 of age recorded group 1, 2 and 3 ($P \leq 0.05$) in body weight gain as compare with control group. Numerous scientific studies in group 1, 2 and 3 which gave olive leave extract water and olive seeds extract water and mix olive leaf with seed water extract in drinking water, have been investigate the beneficial properties of olive leaf powder, olive leaf extracts and oleuropein and its effect on poultry performance. The improvement on hen performance observed in this study may be due to the beneficial effect of olive leaf extracts for improving the nutrients

digestibility and intestinal absorption (Erener *et al.*, 2009). Moreover, Wenk (2002) reported that the increase in then performance associated with the supplementation of poultry diets with plantorigin materials are containing polyphenol. Which Polyphenolic compounds increase the activity of digestive enzymes by decreasing of pathogenic microorganisms that spread in these animals’ digestive organs, also preventing the formation of toxins within the feed. (Aziz *et al.*, 1998 and Sudjana *et al.*, 2009).

Table 4 : Effect of olive leave and seed water extract and mix of olive leave and seed water extract in drink water on body weight gain of Japanese quails (mean±s.d).

Groups	2 week	4week	6 week
Control	85.9±0.78 c	52.56±4.8 b	21.13±1.38 b
Group 1	89.6±0.43 b	55.93±1.33ab	24.3±2.29 ab
Group 2	91.53±0.85 a	63.86±1.62 a	26.76±0.08 a
Group3	92.26±0.08 a	65.9±3.50 a	28.96± 0.38 a

Control group = water with out addition, group2 =100 ml olive seed water extract in drinking water, group 3=100 ml olive leave water extract in drinking water, group 3=200 ml (100 ml olive leave water extract +100ml olive seed water extract in drinking water .in the same column with a superscript in common differ significantly at P≤0.05.

The results in table 5 showed the effect of olive leave and seed water extract and mix of olive leave and seed water extract in drink water on feed intake of Japanese quail in week 2 recorded the control group higher than other group 198.63,186.73,186.46, 189.3. While in week 4 and 6 show no significant in all group.

Table 5 : Effect of olive leave and seed water extract and mix of olive leave and seed water extract in drink water on feed intake of Japanese quails (mean±s.d).

Groups	2 week	4 week	6 week
Control	198.63 ± 0.31 a	156.16 ± 3.4 a	107.9 ± 6.60 a
Group1	186.73 ± 0.20 c	150.03 ± 2.47 a	89.1 ± 10.19 a
Group 2	186.46 ± 0.58 c	163.26 ± 1.47 a	94.39 ± 7.61 a
Group 3	189.3 ± 0.73 b	158.00 ± 0.73 a	111.73 ± 1.81 a

Control group =water with out addition, group2= 100 ml olive seed water extract in drinking water, group 3= 100 ml olive leave water extract in drinking water, group 3=200 ml (100 ml olive leave water extract +100 ml olive seed water extract in drinking water. In the same column with a superscript in common differ significantly at P≤0.05.

Also feed conversion ratio show no statistical difference when compare with control group in week 2, while group 1, 2 and 3 record in week 4 age (p≤0.05) as compere with control group.in week 6 all group show (P≤0.05) than control group, group3 record higher value

than group 1 and 2. The Table 6 showing the rustle of feed conversion ratio.

Table 6 : Effect of olive leave and seed water extract and mix of olive leave and seed water extract in drink water on feed conversion ratio of Japanese quail (mean±s.d).

Groups	2 week	4 week	6 week
Control	2.31 ± 0.04 a	3.01 ± 0.08 b	4.34 ± 0.39 c
Group1	2.06 ± 0.05 a	2.68 ± 0.05 a	3.66 ± 0.24 b
Group2	2.03 ± 0.04 a	2.55 ± 0.05 a	3.52 ± 0.22 b
Gruop3	2.05 ± 0.04 a	2.39 ± 0.04 a	3.85 ± 0.18 a

Control group = water with out addition, group2 = 100 ml olive seed water extract in drinking water, group 3 = 100 ml olive leave water extract in drinking water, group 3 = 200 ml (100 ml olive leave water extract +100 ml olive seed water extract in drinking water. In the same column with a superscript in common differ significantly at P≤0.05.

Possibly a majority of the benefits of olive leaves and olive oil in laying bird diets are in fact due to the presence of a variety of phenolic compounds and particularly oleuropein which is the main active ingredient (Malik and Bradford, 2008) Dietary α-tocopheryl acetate at 300 mg kg-1 feed had no adverse influence on feed intake, mortality and egg production compared to the control group where the á-tocopheryl acetate was at 30 mg kg-1 feed. This result are similar to the finding by El-Damarawy *et al.*, (2013) was showen that olive leave powder significantly increased broiler body weight and feed conversion.

Bahsi *et al.*, (2016) indicated that oleuropein, when added to mixed feed of Japanese quails with a dose of 400 ppm improves feed conversion ratio. Inversely, Cayan and Erener (2015) indicated that feed intake and the feed conversion ratio not affected by dietary olive leaf powder. Also, they observed no differences between control group and the olive leaf powder consuming group with respect to egg yield and egg weight.

Conclusion

Olive leafs water extract and olive seed water extract can be used in drinking of Japanese quails to enhance body performance (weight gain, body weight, feed intake and feed conversion ratio).

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