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Studying the Effect of Adding Oil and Powder Onion Seeds to Diets of Iraqi Local Geese on the Qualitative Traits of Eggs.

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Abstract

The 75 females geese at the beginning of the production period were divided randomly into five treatments with three replicates for each treatment, where one replicate included 5 females / 15 females for each treatment, the study was conducted in the scientific research field of the Animal Production Technologies Department at the Technical Institute / Shatrah and the study period lasted 105 days during which the egg traits were measured every 21 days, which included the average egg weight. Shellthickness, shell weight, yolkweight, yolk diameter, yolk height, yolk index, albumen diameter, albumen height, albumen index with 6 periods, and the study treatments were as follows:

The control treatment T1 without any addition, the first treatment T2, adding onion seed powder to the diet at a level of 1.5 g / kg of feed, the second treatment with T3, adding the onion seed powder to the diet at a level of 3 g / kg of feed. The third treatment, T4, adding onion seed oil at a level of 0.10 ml / kg of feed, and the fourth treatment, T5, adding onion seed oil at a level of 0.20 ml / kg of feed. The results of the current study indicate a significant improvement in the average weight of the eggs produced, in addition to the significant improvement in the quality traits of the eggs understudy, which included shell traits, albumen and yolk traits. It is concluded from this study that the addition of onion oil and seeds improved the productive performance of the bird.

Introduction

One of the most important problems facing the poultry sector, which needs quick and unconventional solutions to confront it, is the provision of animal protein in quantities that are compatible with the population increase, so many studies have resorted to introducing new birds for scientific research other than broiler meat in order to fill the nutritional deficiency, including geese. This bird enjoys many advantages, such as the production of soft and normal feathers, as well as its production of fattened livers, its high resistance to the two most dangerous diseases affecting Newcastle chickens and white diarrhea, and its tolerance to live at high temperatures and high humidity levels (Al-Sabeel and Al-Badri, 2009), The goose is also distinguished from the laying hens by the fact that the egg production in the hens is very high during the first productive season and decreases with age, while the goose production does not differ in the seasons from the second year to the sixth year, but after the sixth year it begins with a gradual decline ,It is also characterized by rapid growth when fed on fattening diets with an average weight of 4-6 kg up to 8 weeks, in addition to the high percentage of protein in eggs, reaching 14%, while not excelled 13% in the content of chicken eggs, while meat weight reaches it is characterized by a high protein content as It reached 22.3% while it was 20.6%, 16.8% and 14% in chickens, cows, and sheep, respectively. (Bogenfurst, 1998), Many recent studies have proven that the qualitative traits of eggs are one of the most important economic traits, there their

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importance is due to being considered a true indicator of the internal traits of eggs (elements of greatest importance), which are usually divided into internal and external qualities, most of which are easy to measure and used for evaluation. Scientifically broadly (Garces and Casey, 2003; Shanaway, 1987),Therefore, most of the problems that eggs are exposed to are related to two factors: the environmental factor of moisture and heat in addition to the nutritional factor of the egg-producing herd, which is the most important factor that can be controlled (Narushin, 2002), Therefore, many recent scientific studies have resorted to adding medicinal herbs with the aim of improving the nutritional value of eggs such as anise oil and seeds (Al-Daraji and others, 2008) and lycopene (Al-Janabi, 2015). Plants are a source rich in many substances that have vital activity against many pathogens such as Flavonoids, alkaloids, and terpenes (Hassanpour et al., 2011),Therefore, onions are one of the oldest medicinal plants that are consumed by humans in a very large way (Nakayama et al., 2013).It is a perennial herbaceous plant reaching a height of 40-80 cm, the flowers are white, and the fruit is a capsule that opens by three valves (Davis and EL-Shafie, 1967), Numerous studies have proven that onions have many benefits as it is a very effective antioxidant (Bakhshai et al., 2011). It is very rich in many biologically active substances against cancer, especially kristin (Elfadl et al., 1998), which is the most powerful antioxidant for gastrointestinal cancer (Rougier et al., 2005),It is also commonly used to treat indigestion and diabetes, in addition to its anti-inflammatory and anti-allergic properties, and its antiseptic and anti-bleeding activity makes it useful for colds (Kook et al. 2009; Saik 2006; Hannan et al. 2010).Therefore, this study aimed to evaluate the effect of adding oil and onion seeds to the diets of domestic female geese on some of the eggs' specific characteristics and the level of sex hormones and antioxidants.

Materials and methods

This study was conducted in the scientific research field of the Animal Production Department belonging to Technical Institute / Shatrah for the period from 3/1/2018 to 3/5/2018 to know the effect of adding oil and onion seeds to the diets of local geese on the specific traits of eggs.The 75 females of local geese were used at the beginning of the production phase, obtained from the local markets of the Shatra district in DhiQar province.The females were divided randomly into five treatments, and each treatment included 15 females, which were divided into three replicates, The 5 females for each replicate and the experiment treatments were as follows:

The first treatment (T1 control treatment) in which a basal diet was used without any addition,The second treatment (T2) add 1.5 g of onion seed powder for each kg of feed for the basal diet, the third treatment (T3) add 3 g of onion seed powder for each kg of feed for the basal diet, Fourth treatment (T4) add 0.10 ml of onion seed oil to it for every kg of feed for the basal diet, and the fifth treatment (T5) add 0.20 ml of onion seed oil to each kg of feed for the basal diet.During the study, the average egg weight, shell thickness, shell weight, yolk specifications, and albumen specifications per week, and then taking an average every 21 days to display the results on the basis of the study duration and the length of each three-week period, starting from 3/1/2018 to 5/3/2018.

The qualitative traits of eggs

Eggs samples were taken from each replicate once every two weeks within each treatment. The eggs' specific traits, including the specific traits of the shell, yolk and albumen, were measured according to the methods indicated by Al-Fayyad and Naji (1989).

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Shell thickness (mm)

The shell thickness with its inner membranes from the tapered and convex sides of each egg after leaving it to dry for 24 hours using digital Vernia and taking the average of the two readings according to the following equation:

$$\text{The shell thickness}=\frac{\boldsymbol{Convex\ shell\ thickness + Tapered\ shell\ thickness}}{\mathbf{2}}$$

Relative weight of the shell (%)

The relative weight of the crust was measured according to the following equation:

$$\text{Relative weight of the shell (\%)} =\frac{\boldsymbol{Shell\ weight}}{\boldsymbol{Egg\ weight}}\times 100$$

Relative albumen weight (%)

Measure the relative weight of albumen in relation to the total weight of the egg according to the following equation:

$$\text{Relative albumen weight (\%)} =\frac{\boldsymbol{The\ albumen\ weight}}{\boldsymbol{The\ total\ weight\ of\ the\ egg}}\times 100$$

albumen height of egg (mm)

This trait was measured by a special tri-base micrometer device from two points facing the thick albumen, and the average was taken as the two readings of the albumen of each egg.

Albumen diameter (mm)

A digital Vernia measuring machine was used to measure the white diameter of egg samples.

Albumen index

According to the albumen index according to the following equation:

$$\text{Albumen Index}=\frac{\boldsymbol{albumen\ height\ (mm)}}{\boldsymbol{albumen\ diameter\ (mm)}}$$

Relative weight of yolk (%)

The relative weight of the yolk was measured in relation to the total weight of the egg according to the following equation:

$$\text{Relative weight of yolk\%}=\frac{\boldsymbol{yolk\ weight}}{\boldsymbol{Egg\ weight}}\times \mathbf{100}$$

Yolk height (mm)

A tri-base micrometer was used to measure the yolk height of each egg.

Yolk diameter (mm)

A digital Vernia machine was used to measure the yolk diameter of egg samples.

Yolk index

According to Yolk index according to the following equation:

$$\text{Yolk Index}=\frac{\boldsymbol{Yolk\ height\ (mm)}}{\boldsymbol{Yolk\ diameter\ (mm)}}$$

Results and discussion:

Through Table (1), it is noticed during the first period that there was no significant difference between treatment T5 and treatment T4 on the one hand and between treatment T4, treatment T3 and treatment T2 on the other hand .While treatment T5 recorded a significantly

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excelled on treatment T3, T2 and T1, during the second period there was no significant difference between treatment T5, T4, T3 and T2, while the two treatments T5 and T4 recorded a significantly excelled on treatment T1. During period 3, treatment T5 recorded significantly excelled on treatments T3, T2, and T1, while there was no significant difference between treatments T4 and T3 on the one hand and between T2 and T1 on the other hand, and in period 4 of the study periods, treatment T5 recorded .significant excelled for T3, T2 and T1 treatments. While there was no significant difference between the treatments T5 and T4 on the one hand, and between T4 and T3 on the other hand, During period 5, the two treatments T5 and T4 recorded a significant excelled on the rest of the trial treatments. In the general average, treatment T5 recorded a significantly excelled on the treatments T3, T2 and T1.

Table (1).The effect of adding different levels of onion seed oil and powder to diets of local geese on the average weight of eggs produced (mean ± standard error).

General Average	Study periods					Treatments
	5	4	3	2	1	
4.56±138.11 D	1.90±132.60 D	4.04±137.00 D	4.53±139.96 C	4.27±140.40 B	4.16± 140.60 C	**T1**
3.78±143.34 C	2.51±138.53 C	2.28±144.07 C	3.06±142.33 BC	1.94±144.57 AB	3.71±147.23 B	**T2**
3.42±147.52 B	1.81±143.27 B	1.66±150.53 B	3.74±147.97 B	3.16±148.20 AB	3.17±147.67 B	**T3**
2.86±151.96 AB	3.21±151.87 A	3.57±153.90 AB	2.31±151.47 AB	2.46±152.57 A	3.25±150.00 AB	**T4**
3.31±154.11 A	5.52±152.60 A	1.25±158.10 A	0.40±154.77 A	1.91±151.83 A	2.10±153.27 A	**T5**

***The different letters within one column indicate significant differences at the P≤0.05 level between the different experiment treatments. * Each period represents 21 days (three weeks), T1: control treatment, T2: onion seed powder was added to 1.5 g / kg of feed, T3: to it was added onion seed powder 3 g / kg feed, T4:To it was added onion seed oil 0.10 ml/kg of feed, T5: to it was added onion seed oil 0.20 ml/kg of feed, the similar letters within the single column indicate that there were no significant differences between the experiment treatments within the same period.**

Through Table 2, it is noticed that during the first period, no significant difference was observed between the trial treatments, with the exception of the excelled of treatment T5 over the control treatment T1, and during the second period, the treatments T5, T4, T3, and T2 recorded a significantly excelled on the control treatment T1.During the third and fourth period, the two treatments T5 and T4 recorded a significantly excelled on the control treatment, while in the fifth period, the treatment T5 recorded a significantly excelled on all the experiment treatments, and in the general average, the treatments T5, T4 and T3 recorded a significantly excelled on the two treatments T2 and T1.

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Table (2): The effect of adding different levels of onion seed oil and powder to diets of local goose on the average shell thickness of the eggs produced (mean ± standard error).

General Average	Study periods					Treatments
	5	4	3	2	1	
0.94±0.56 B	0.30±0.58 C	0.02±0.65 B	0.01±0.67 B	0.02±0.45 C	0.01±0.47 B	**T1**
0.08±0.59 B	0.55±0.59 C	0.01±0.67 AB	0.25±0.71 A	0.00±0.50 B	0.01±0.51 A	**T2**
0.08±0.60 A	0.02±0.64 B	0.05±0.68 AB	0.01±0.67 B	0.02±0.49 B	0.03±0.51 A	**T3**
0.09±0.62 A	0.01±0.67 B	0.01±0.72 A	0.03±0.70 A	0.03±0.55 A	0.02±0.50 AB	**T4**
0.1±0.64 A	0.05±0.72 A	0.04±0.71 A	0.02±0.70 A	0.02±0.57 A	0.005±0.48 B	**T5**

***The different letters within one column indicate significant differences at the P≤0.05 level between the different experiment treatments. * Each period represents 21 days (three weeks), T1: control treatment, T2: onion seed powder was added to 1.5 g / kg of feed, T3: to it was added onion seed powder 3 g / kg feed, T4:To it was added onion seed oil 0.10 ml/kg of feed, T5: to it was added onion seed oil 0.20 ml/kg of feed, the similar letters within the single column indicate that there were no significant differences between the experiment treatments within the same period.**

It is noted from Table 3 that during the first period, the treatments T4, T3, and T2 recorded a significantly excelled on the two control treatments T1 and the fifth treatment T5, while in the second period the fifth treatment T5 recorded a significantly excelled on the two treatments T2 and the control treatment only. During the third and fourth period, the two treatments T5 and T4 recorded a significant superiority over the rest of the experiment treatments, while in the fifth period the control treatment T1 and the second treatment T2 recorded a significantly excelled on the rest of the experiment treatments while no significant difference was observed between the trial treatments in the general average.

Table (3). The effect of adding different levels of onion seed oil and powder to diets of local geese on the average relative weight of the shell (mean ± standard error).

General Average	Study periods					Treatments
	5	4	3	2	1	
12.57±0.27 A	12.18±0.19 A	12.61±0.24 C	12.68±0.14 B	12.48±0.06 C	12.90±0.04 B	**T1**
12.53±0.57 A	12.12±0.90 A	12.51±0.55 D	12.25±0.58 C	12.75±0.21 B	13.01±0.55 A	**T2**
12.54±0.73 A	11.38±0.17 B	12.78±0.54 B	12.71±0.92 B	12.90±0.10 AB	12.92±0.04 A	**T3**
12.63±0.80 A	11.14±0.04 B	13.16±0.12 A	13.04±0.04 A	12.85±0.26 AB	12.98±0.40 A	**T4**
12.56±0.81 A	11.12±0.08 B	12.95±0.79 A	13.08±0.07 A	12.98±0.69 A	12.68±0.20 C	**T5**

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It is noted from Table (4) which shows the average of yolk weight during the different periods of the experiment, Where the fifth treatment recorded a significantly excelled on the rest of the experiment treatments for the first and second periods, while the control and second treatment recorded the same indicator of excelled on the rest of the experiment treatments during the third period. During the fourth period, the third treatment recorded a significantly excelled on the rest of the experimental treatments, while the third and fifth treatments recorded the same excelled during the fifth period, while the general average did not record any significantly excelled among the experimental treatments.

Table(4)The effect of adding different levels of onion seed oil and powder to diets of local geese on the average yolk weight (mean ± standard error).

General Average	Study periods					Treatments
	5	4	3	2	1	
37.38±0.59 A	37.13±0.01 B	36.40±0.26 B	37.93±0.04 A	37.84±0.03 AB	37.61±0.05 BC	**T1**
37.86±0.70 A	37.79±0.73 B	37.03±0.81 B	38.96±0.04 A	37.75±0.19 B	37.80±0.18 AB	**T2**
37.87±0.63 A	38.53±0.57 A	37.63±0.64 A	38.12±0.64 B	37.62±0.23 C	37.46±0.66 C	**T3**
37.65±0.37 A	37.63±0.35 B	37.07±0.23 B	37.87±0.03 B	37.99±0.07 AB	37.71±0.20 B	**T4**
37.79±0.48 A	38.06±0.55 A	37.08±0.19 B	37.64±0.11 C	38.19±0.27 A	37.99±0.08 A	**T5**

***The different letters within one column indicate significant differences at the P≤0.05 level between the different experiment treatments. * Each period represents 21 days (three weeks), T1: control treatment, T2: onion seed powder was added to 1.5 g / kg of feed, T3: to it was added onion seed powder 3 g / kg feed, T4:To it was added onion seed oil 0.10 ml/kg of feed, T5: to it was added onion seed oil 0.20 ml/kg of feed, the similar letters within the single column indicate that there were no significant differences between the experiment treatments within the same period**.

Table (5) shows the yolk diameter rates for the different experimental treatments, where it becomes clear during the first period that the addition treatment (the fifth, fourth and third) have a significant excelled on the first and second factors. While the fifth and fourth treatments recorded a significantly excelled on the rest of the experiment treatments during the second period, Table (5) shows the yolk diameter rates for the different experimental treatments, where it becomes clear during the first period that the addition treatment (the fifth, fourth and third) have a significant excelled on the first and second factors. While the fifth and fourth treatments

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recorded a significantly excelled on the rest of the experiment treatments during the second period, While the third, fourth and fifth periods of the study periods did not record any significant advantage, while the general average recorded a significantly excelled in favor of the addition treatments on the control treatment.

Table (5): The effect of adding different levels of onion seed oil and powder to the diets of local geese on the average yolk diameter (mean ± standard error).

General Average	Study periods					Treatments
	5	4	3	2	1	
61.26±1.15 B	62.40±0.11 B	60.23±0.02 B	62.30±0.05 AB	60.16±0.13 C	61.25±1.52 B	**T1**
61.83±1.15 B	63.56±0.43 AB	60.94±0.70 B	62.18±0.27 AB	60.61±0.55 C	61.85±0.54 B	**T2**
63.07±1.22 A	64.36±0.65 A	62.01±0.67 AB	63.50±0.07 A	62.00±1.46 B	63.50±1.04 A	**T3**
64.06±1.27 A	65.41±0.69 A	63.26±0.79 A	63.91±0.58 A	63.02±1.68 A	64.71±1.21 A	**T4**
64.18±1.48 A	64.84±1.29 A	63.58±0.23 A	64.34±0.40 A	63.90±0.33 A	64.24±3.46 A	**T5**

***The different letters within one column indicate significant differences at the P≤0.05 level between the different experiment treatments. * Each period represents 21 days (three weeks), T1: control treatment, T2: onion seed powder was added to 1.5 g / kg of feed, T3: to it was added onion seed powder 3 g / kg feed, T4:To it was added onion seed oil 0.10 ml/kg of feed, T5: to it was added onion seed oil 0.20 ml/kg of feed, the similar letters within the single column indicate that there were no significant differences between the experiment treatments within the same period.**

Table (6) shows the average of yolk height, where it is clear from the table that the fifth and fourth treatments recorded a significantly excelled on the rest of the experiment treatments and for the first and second periods of the study periods, While the experiment treatments did not recorded any significantly excelled between them for the rest of the study periods.

Table (6): The effect of adding different levels of onion seed oil and powder to the diets of local geese on the rate of yolk height (mean ± standard error).

General Average	Study periods					Treatments
	5	4	3	2	1	
21.37±0.70 A	22.25±0.88 A	21.56±0.16 A	21.58±0.23 A	20.18±0.06 C	21.27±0.07 B	**T1**
21.71±0.67 A	22.45±0.03 A	21.98±0.20 A	21.98±0.06 A	20.53±0.12 C	21.60±0.14 B	**T2**
22.06±0.62 A	22.61±0.08 A	22.58±0.24 A	22.17±0.12 A	21.01±0.30 B	21.96±0.15 B	**T3**
22.49±0.40 A	22.91±0.11 A	22.84±0.05 A	22.52±0.04 A	21.84±0.06 A	22.32±0.18 A	**T4**
22.47±0.49	22.16±0.92	22.56±0.35	22.75±0.11	22.08±0.14	22.80±0.19	**T5**

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A	A	A	A	A	A

***The different letters within one column indicate significant differences at the P≤0.05 level between the different experiment treatments. * Each period represents 21 days (three weeks), T1: control treatment, T2: onion seed powder was added to 1.5 g / kg of feed, T3: to it was added onion seed powder 3 g / kg feed, T4:To it was added onion seed oil 0.10 ml/kg of feed, T5: to it was added onion seed oil 0.20 ml/kg of feed, the similar letters within the single column indicate that there were no significant differences between the experiment treatments within the same period.**

Table (7) shows the average of albumen weight for the different experiment treatments .As it is clear from the table that there is no significant difference between all the treatments,although there are mathematical differences in favor of addition treatments compared to control treatment.

Table (7): The effect of adding different levels of onion seed oil and powder to diets of local geese on the average albumen weight (mean ± standard error).

General Average	Study periods					Treatments
	5	4	3	2	1	
49.03±0.44 A	49.27±0.23 A	49.43±0.27 A	48.29±0.22 A	48.99±0.10 A	49.16±0.13 A	**T1**
48.92±0.76 A	49.87±0.10 A	49.33±0.66 A	48.14±0.65 A	48.79±0.39 A	48.48±0.47 AB	**T2**
48.99±0.35 A	49.39±0.13 A	49.07±0.07 A	48.71±0.21 A	48.67±0.03 A	49.14±0.49 A	**T3**
49.48±0.77 A	50.88±0.12 A	49.44±0.08 A	48.85±0.21 A	48.94±0.15 A	49.30±0.22 A	**T4**
49.45±0.59 A	50.46±0.38 A	49.46±0.09 A	49.19±0.07 A	48.82±0.20 A	49.32±0.12 A	**T5**

***The different letters within one column indicate significant differences at the P≤0.05 level between the different experiment treatments. * Each period represents 21 days (three weeks), T1: control treatment, T2: onion seed powder was added to 1.5 g / kg of feed, T3: to it was added onion seed powder 3 g / kg feed, T4:To it was added onion seed oil 0.10 ml/kg of feed, T5: to it was added onion seed oil 0.20 ml/kg of feed, the similar letters within the single column indicate that there were no significant differences between the experiment treatments within the same period.**

Table (8) shows the average of albumen weight for the different experimental treatments and for all periods. While the fourth and second treatments recorded a significantly excelled on the rest of the study treatments during the second period, while there was no significant difference between the experimental treatments during the third period.

Table (8): The effect of adding different levels of onion seed oil and powder to diets of local goose on the average albumen diameter (mean ± standard error).

General Average	Study periods					Treatments
	5	4	3	2	1	
107.22±2.11	107.34±0.05	107.55±0.56	108.61±0.23	107.48±0.08	105.14±0.01	**T1**

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B	B	C	A	B	C	
107.42±2.22 B	107.55±0.10 B	107.67±0.86 C	108.33±1.15 A	108.58±0.23 A	105.00±1.00 C	**T2**
107.59±0.80 B	107.84±0.17 B	108.51±0.19 B	107.78±0.70 B	107.38±0.65 B	106.43±0.11 B	**T3**
108.38±0.83 A	108.71±0.61 A	109.12±0.20 A	108.45±0.26 A	108.70±0.48 A	106.95±0.07 B	**T4**
108.88±0.86 A	109.78±0.36 A	109.62±0.30 A	108.69±0.32 A	107.98±0.97 B	108.32±0.43 A	**T5**

***The different letters within one column indicate significant differences at the P≤0.05 level between the different experiment treatments. * Each period represents 21 days (three weeks), T1: control treatment, T2: onion seed powder was added to 1.5 g / kg of feed, T3: to it was added onion seed powder 3 g / kg feed, T4:To it was added onion seed oil 0.10 ml/kg of feed, T5: to it was added onion seed oil 0.20 ml/kg of feed, the similar letters within the single column indicate that there were no significant differences between the experiment treatments within the same period**.

In the table (9) shows the average of albumen height for the different experimental treatments, where it is clear from the table that the addition treatments recorded a significantly excelled on the control treatment during the first period of the study periods, while the second treatment recorded a significantly excelled on all experiment treatments during the second period. During the third period, the second and fourth treatment recorded a significantly excelled on the rest of the experiment treatments, While during the fifth period the treatments did not recorded any significantly excelled , while the fourth and fifth treatments recorded the same significantly excelled during the fourth period and the general average.

Table (9): The effect of adding different levels of onion seed oil and powder to diets of local geese on the average of albumen height (mean ± standard error).

General Average	Study periods					Treatments
	5	4	3	2	1	
9.41±0.62 B	10.23±0.20 A	9.34±0.02 B	9.75±0.11 B	9.33±0.33 B	8.44±0.18 B	**T1**
9.89±0.62 B	10.28±0.01 A	9.40±0.02 B	10.30±0.37 A	10.46±0.26 A	9.03±0.26 A	**T2**
9.95±0.91 B	10.35±0.11 A	9.47±0.02 B	9.96±0.81 B	9.96±0.81 B	9.33±0.30 A	**T3**
10.04±0.55 A	10.55±0.10 A	10.02±0.25 A	10.62±0.13 A	9.80±0.22 B	9.24±0.21 A	**T4**
10.74±0.86 A	10.57±0.21 A	10.37±0.06 A	9.68±0.65 B	9.63±0.23 B	9.87±0.12 A	**T5**

***The different letters within one column indicate significant differences at the P≤0.05 level between the different experiment treatments. * Each period represents 21 days (three weeks), T1: control treatment, T2: onion seed powder was added to 1.5 g / kg of feed, T3: to it was added onion seed powder 3 g / kg feed, T4:To it was added onion seed oil 0.10 ml/kg of feed, T5: to it was added onion seed oil 0.20 ml/kg of feed, the similar letters**

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within the single column indicate that there were no significant differences between the experiment treatments within the same period.

The study of the quality of the egg is one of the economically important traits that give a real indication of the internal traits of the egg of the greatest importance (which is an important indicator of the hatching rate and the embryonic development of the resulting chick),These traits include egg weight, shell traits , shell weight, shell thickness, the relative weight of the shell, yolk trait, yolk diameter, yolk height, yolk index, albumen traits, albumen weight, albumen diameter, albumen height, albumen index, Which has a highly significant correlation with egg weight, which is reflected positively on the average of egg hatching and the health of the bird in the future. Therefore, the positive results in this study may be due to the addition of onion oil and seeds, which contain many active antioxidants, which are a group of biologically active compounds that resist cell oxidation and protect them from free radicals such as Quercetin Which is the main compound found in onions, It has antioxidant and anti-inflammatory properties and has a clear activity that protects the cell and DNA from free radicals. In addition, onion oil and seeds contain fatty acids such as linoleic, oleic and vitamin E (tocopherols) in very high levels, which is positively reflected on the general health of the bird (Aiboudi et al., 2016: Ghalehkandi et al., 2013). The improvement in the health of the bird is reflected in the final result of its productive performance. Therefore, the reason for the improvement of the studied traits mentioned above may be due to the role of oil and onion seeds in improving the health of the bird by fighting or inhibiting the activity of pathological microorganisms and fungi. Onions contain Allicin, flavonoids, Quercetin, and high levels of selenium, which have an important role as antioxidants and disease prevention (Vahdani and Khaki, 2014). In addition, flavonoids and polyphenols possess a broad spectrum of anti-bacterial activity and these substances help prevent indigestion and rapid food absorption (Shokoohi et al., 2018). Shon et al. (2004) indicated that the most important active substances in onion oil and seeds are Flavonoids such as The kampeferol and kristin, which are characterized by their anti-growth properties of pathological microorganisms, which is reflected in the improvement of the small intestine environment of the bird, which is reflected in the final result on the production, as well as oil and onion seeds have many medicinal properties that make it useful for public health as anti-allergic, inflammatory, vasodilator and antioxidant. It is distinguished from others by its high effectiveness more than its aqueous extract, Yalcin and Kavuncuogln (2014) indicated that protein and fat ratios, which are 24.8 and 20.4, respectively, and the high percentage of amino acid cysteine in addition to fatty acids such as palmitic, oleic and linoleic have an important role in controlling blood sugar levels and fighting indigestion, which causes a decrease in the percentage of fat cell death and preservation from oxidative damage, These active compounds can also act as estrogen, and thus may have an effect or an effective role in stimulating all body glands that have a direct or indirect relationship with female reproductive efficiency,Sturki (2000) stated that estrogen has the ability to promote the growth of the oviduct and increase secretion of the oviducts of the tubular glands as well as help in the manufacture of proteins of the oviduct such as ovalbumin, conallbumiin, lysozyme and yolk protein precursor, What was previously mentioned, it is clear that onion oil and seeds have an effective role in improving the health and productivity of the bird by activating the effectiveness of the female reproductive glands, which is evidenced by the increase in production and the tangible improvement in the quality traits of eggs. This makes onion oil and seeds one of the safe and effective means in the diets of birds.

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