# Effect of Adding Different Levels of (Date-Palm Pollen) to the Diet of Laying Hens in the Quality of the Egg Recipe

F. A. Al-Shamary      A.K.Shanoon
College of Agriculture - University of Diyala.iraq

**Abstract**

(225) eggs have been used in this experiment, (45) eggs for each treatment (15 eggs / repeater). The eggs have been collected from the laying hens fed by date palm pollen for five periods with ratios of (1, 0.8, 0.6, 0.4, 0) percent for the first, second, third, fourth, and fifth treatment sequentially. The egg characteristics have been examined including: egg weight, egg quality, egg-white (weight, height and relative weight), yolk (weight, height and relative weight), and eggshell (thickness, weight, and relative weight) for all the treatment. Results have shown the following:

1- The use of date palm pollen of the ratios (1%, 0.8%, 0.6% ,%0.4) in the third, fourth, and fifth treatment sequentially has led to high significant superiority in the egg weight.

2- There has been a  high significant superiority ($p \leq 0.05$) for the date palm pollen treatment during the third and fourth periods in the fourth treatment as compared to all other treatment in egg-white weight, while the fifth treatment shows significant superiority in egg-white height during the whole five periods of the experiment as compared to the other date palm pollen treatment, and also significant superiority of the fifth treatment in yolk weight during the whole five periods of the experiment on both the addition and the control treatment.

3- The fourth treatment has achieved a significant superiority ($p \leq 0.05$) in the third  period on the second and third experiment treatment in addition to the control treatment, while in the fourth and fifth no significant superiority has been noticed. As related to the eggshell thickness, there is no significant superiority in the fifth period among the whole five treatment.

**Keywords**: laying hens, Date-Palm Pollen, egg quality r

## 1-Introduction

Medicinal plants and aromatic herbs and some of the fruits of the trees are considered one of the options and resources important to improve and support the health status of poultry as it contains useful natural materials and great importance in their influence physiological and therapeutic for humans and animals alike (1), especially flavonidine vehicles and carotenoids (10) as well as it is a good source of protein, amino acids, vitamins and dietary fiber, fatty acids, enzymes, hormones and minerals (6). So it emerged the importance of pollen palm because it contains many of the vehicles, as it proved Khalaf Allah (1988) that pollen palm contain sucrose, as well as to contain the protein material is greater than their presence in the flesh, and contains some different elements such as calcium, phosphorus and iron, as noted contain pollen palm on five vitamins are A, B, C, D, E(7). It also has a pollen palm qualities that enabled him to resist inflammation and increase immunity (13), and includes the installation and basic non-essential amino acids (17), and in the light of this, said AL shagrawi (1998) to contain pollen palm on many of the important compounds , most important one  estrogeinsubstancf like Estron, sterols  and cholesterol as well as it contains flavonoids  such as amirin-β andsitoterol-β and do an act of antioxidants (18), which protects the testis and sperm are linked to the quality of semen (16.9), as mentioned Bahmanpour et al. (2006) to extract pollen palm containing the Alastrugenih material a major role in stimulating sexual organs Gonads and sustain and increase female fertility.

## 2. Materials and Methods

Used in this experiment (225) egg by 45 eggs per transaction (ie 15 eggs / repeater) were eggs from hens that have been fed on grain collection of palm pollen for five periods (28 days / period) was measured quality characteristics of the eggs were distributed transactions are as follows:

Add (0% palm pollen grains), the second treatment, and the third, fourth and fifth: fed diets yield plus 0.4%, 0.6%, 0.8%, 1% of palm pollen grains respectively.

The traits

It was measured qualities of internal and external quality of the eggs: the rate of egg weight (g) and the weight of whiteness (g) and high of whiteness (mm), Weight of yolk  (g), high-yolk (mm), and the weight of the crust (g) and shell thickness (mm), and has been taking readings every ((28 days for five periods, the data using statistical analysis of program SPSS (23) and a complete randomized design Complete Randomized design (CRD) in the data analysis of transactions for each period, while the overall rate data So it was used randomized complete design sectors randomized complete Block design(RCBD), and test for differences between the treatments using a multi-level test Duncan (12), according to the equation:

IISTE

As the: Yijk = μ + Ti + εj + εij + εijk

Yijk = the value of viewing the special k sample taken from sector j of the experimental unit that took treatment i

μ = overall average community

Ti = treatment effect i

εi = j sector effect

εij = experimental error effect, no effect on the treatment sector j i (overlap between the Gaza Strip and treatment)

εijk = sample error effect, any sample k taken for random effect of the experimental unit in sector j which took treatment i

The mathematical model of random design full CRD:-

Yij = μ + Ti + εij

Yij = the value of viewing the status of the studied

μ = overall average

Ti = effect of treatment

εij = random error accompanying per-view, which I suppose it is distributed randomly and naturally, independent.

**Table (1): The components of the bush, and the chemical composition calculated within the feed of laying hens**

| Ingredient and analysis | ( % ) |
|---|---|
| Corn | 64.4 |
| Soybean meal | 22 |
| Concentrated Protein | 5 |
| Dai calcium phosphate | 0.3 |
| Limestone | 8 |
| Salt (NaCl) | 0.3 |
| Total | 100 |
| Chemical composition calculated[3] | |
| %Crude protein | 17 |
| Energy actress kilocalories / kg | 2740 |
| % Methionine | 0.41 |
| % Methionine and Alsstin | 0.7 |
| % Lysine | 0.92 |
| % Calcium | 3.45 |
| % Available phosphorus | 0.36 |

1. ksph Soybeans used an Argentine source, consisting of 44% crude protein and energy represented in 2230 kilocalories / kg

2. Use the premix MAXCARE produced by Trouw company Nutrition containing protein 5.9%, Energy Actress 1074 kilocalories / kg, lysine 2.3%, Mithanonin 5.4%, Mithaaonin and Sistine 5.8%, threonine 0.3%, tryptophan 0.1%, calcium 26.3%, phosphorus available 9.5% of all mineral and micro-nutrients and vitamins required to chicken eggs.

3-chemical composition of the components of the diets NRC), 1994).


Results and discussion

The table (2) shows   superior moral (P<0.05) for transactions pills pollen palm on the control treatment and for all periods, as the existence of superior moral notes between the transactions themselves, noting that the first period showed superior transaction fourth and fifth 66.41, 65.81 grams of the second transaction and the third 65.65, 64.41 g, also outperformed the fourth and fifth

70.76, 69.94 gm .The second treatment, and the third 68.24, 66.68 g, either in the third period, we find that the fourth and fifth transactions going on at the same level for the second transaction and third, while we find in the fourth period that the third treatment, the fourth and fifth showed significant superiority on the second transaction, the fifth period not no significant difference between the coefficients of palm pollen, the overall rate shows that the third transaction, the fourth and fifth 69.51, 69.33, 68.44 g showed significant superiority on the second treatment 64.58gm. This moral improvement of transactions pills palm pollen for several reasons, which contain hormone Alastradol It is similar in effect to the activities of estrogen (15) where it affects the reproductive activities and stimulate the ovaries as Estrogen affects the process the events of ovulation due to the increase of FSH and LH, which in turn leads to increased sacs small ovarian growth, maturation and ovulation process (20) and shows the effect of estrogen in the clear in the rate of egg weight also works on the growth and

differentiation of the epithelium of the oviduct and increase the number of cells pipe responsible for the manufacture and secretion of various whiteness  also urges the hormone itself on manufacturing generators lipoproteins in the liver and then deposited in the oviduct (24) As the steroid hormones increase the basal metabolic rate for being constructivism and hormones, including estrogen, which plays an important role in promoting the growth of the oviduct and increase the synthesis of proteins own configure the egg (22).

Table 2: Effect of different levels of palm pollen grains in the rate of egg weight (g) (mean ± standard error) of laying hens (Lohmann brown) for Mdh66-47 week-old

| Treatment Period | First treatment | Second treatment | Third treatment | Fourth treatment | Fifth treatment | levels |
|---|---|---|---|---|---|---|
| 1-    50-47 | 0.5±61.95 c | 0.36±64.41 b | 0.24±65.65 ab | 0.51±65.81 a | 0.29±66.41 a | ** |
| 2-    54-51 | 0.49±63.16 c | 0.30±66.86 b | 0.29±68.24 b | 0.54±69.94 a | 0.49±70.76 a | ** |
| 3-    58-55 | 0.85±65.06 c | 0.45±67.72 b | 0.48±68.83 ab | 0.42±70.55 a | 0.18±70.73 a | ** |
| 4-   62-59 | 0.49±65.95 c | 0.26±67.86 b | 0.41±69.66 a | 0.44±70.75 a | 0.12±70.62 a | ** |
| 5-   66-63 | 0.71±66.83 b | 0.52±69.36 a | 0.64±69.85 a | 0.74±69.60 a | 0.49±69.42 a | ** |
| General mean | 0.89±64.58 c | 0.81±67.24 b | 0.75±68.44 a | 0.90±69.33 a | 0.81±69.51 a | ** |

- First treatment= (treatment control without adding),  the second transaction, the third, fourth, fifth transactions pills Add palm pollen levels (1, 0.8, 0.6, 0.4)%, respectively.

-each period represent 28 days.

-indicate the different characters within the same grade on the existence of significant differences between the averages at the moral level of 0.05

-** indicate the presence of a highly significant effect (O0.01≥).

-N.S absence of significant differences within the same class.

Table(3) shows the existence of moral superiority (P≤0.05) V 45.34 for the treatment of GM in the rate of whiteness weight control treatment 40.98 g transactions pills came second palm, third and fourth 43.84, 42.71, 42.12 grams during the first period, while in the second period, we find that the fourth and fifth treatment 45.11,44.70 gm grains of pollen palm has excelled morally superior (P≤0.05) in Rate whiteness weight control treatment second transactions and third 43.61,43.01,41.80 g, while the third and fourth periods it has outperformed the fourth treatment for grain came up palm superior significantly (P≤0.01) on each of the control treatment, a second treatment, a third treatment fifth-treatment, and in fifth period noted from the table that All transactions pollen grains palm surpassed the control treatment outweigh the moral (P≤0.05) in the rate of whiteness weight, either in the overall rate, we find that the fourth and fifth treatment 44.71,44.63 gm   may superior morally on the control treatment 41.85 g transactions II added the third 43.90, 43.19 g, as the same table shows that the fifth treatment to add cereal pollen palm has excelled morally superior (P≤0.05) in the rate of high whiteness on the treatment and control of transactions added the second, third and fourth During the five periods as well as the table shows the overall rate superior significantly (P≤0.05) for the fifth treatment of 10 mm on control treatment 7.38 mm and transactions a second addendum, third and fourth 8.95, 8.45, 7.97 mm, a table showing (4) that the control treatment outperformed significantly (P≤0.05) ratio of whiteness rate on transactions added the second, third, fourth and fifth in the first two periods.

And second, while superior moral for the Treatment of control transactions and the second added, third and fourth on the fifth treatment table shows during the third and fourth period, the fifth period had not noticed any significant superiority of all transactions, while the table shows the lack of superior moral of all transactions in the overall rate, that moral improvement of transactions pills came in the palm recipes quality of eggs in the experience of whiteness as weight, high whiteness, The relative whiteness of weight, may be attributable to contain the pills palm pollen on active substances like Flavonoids compounds Saponens, working to stimulate the secretion of female sex hormones (20) Since the estrogen of female hormones that increase secretion glands tubular working on making a protein including Ova-albomin and Kona-albomin and lysozyme   an egg white proteins(2).

Table (3) Effect of different levels of palm pollen grains in the rate of weight and height whiteness (average ± standard error) of laying hens

| Weight of whiteness (gm) | | | | | | |
|---|---|---|---|---|---|---|
| Treatment period | **First treatment** | **Second treatment** | **Third treatment** | **Fourth treatment** | **Fifth treatment** | levels |
| 1 | 0.12±40.98 d | 0.19±42.12 c | 0.17±42.71 c | 0.32±43.84 b | 0.26±45.34 a | ** |
| 2 | 0.41±41.80 c | 0.13±43.01 b | 0.22±43.61 b | 0.38±44.70 a | 0.32±45.11 a | ** |
| 3 | 0.20±41.80 c | 0.31±43.55 b | 0.50±44.29 ab | 0.20±45.19 a | 0.23±43.94 b | ** |
| 4 | 0.23±42.13 d | 0.17±43.26 c | 0.18±44.86 ab | 0.29±45.31 a | 0.34±44.29 b | ** |
| 5 | 0.37±42.55 b | 0.37±44.02 a | 0.26±44.61 a | 0.29±44.51 a | 0.52±44.69 a | ** |
| 5-1 | 0.25±41.85 c | 0.31±43.19 b | 0.48±43.90 ab | 0.25±44.63 a | 0.26±44.71 a | ** |

| Height of whiteness (mm) | | | | | | |
|---|---|---|---|---|---|---|
| treatments period | **First treatment** | **Second treatment** | **Third treatment** | **Fourth treatment** | **Fifth treatment** | levels |
| 1 | 0.35±7.17 c | 0.01±7.46 c | 0.09±7.65 c | 0.12±8.24 c | 0.13±9.4 a | ** |
| 2 | 0.06±7.27 e | 0.06±7.82 d | 0.2±8.29 c | 0.07±8.75 b | 0.14±9.61 a | ** |
| 3 | 0.09±7.17 d | 0.08±7.86 cd | 0.14±8.28 bc | 0.06±8.74 b | 0.49±9.96 a | ** |
| 4 | 0.157.31 d | 0.13±7.86 cd | 0.09±8.44 bc | 0.06±8.99 b | 0.46±9.86 a | ** |
| 5 | 0.41±8.02 d | 0.14±8.82 cd | 0.19±9.6 bc | 0.07±10.07 b | 0.35±11.2 a | ** |
| 5-1 | 0.35±7.17 c | 0.01±7.46 c | 0.09±7.65 c | 0.12±8.24 c | 0.13±9.4 a | ** |

- First treatment=(treatment control without adding), the second transaction, the third, fourth, fifth transactions pills Add palm pollen levels (1, 0.8, 0.6, 0.4)%, respectively.

-each period represent 28 days.

-Indicate the different characters within the same grade on the existence of significant differences between the averages at the moral level of 0.05

-* Indicate the presence of a highly significant effect (P≤0.05).

-** Indicate a significant effect (P≤0.05) .N.S absence of significant differences within the same class.

**Table 4: Effect of different levels of pollen grains in the palm rate ratio of whiteness (average ± standard error) of laying hens (Lohmann brown) for a period of 66-47 weeks of age**

| treatmnets period | First treatment | Second treatment | Third treatment | Fourth treatment | Fifth treatment | levels |
|---|---|---|---|---|---|---|
| 1 | 0.34±66.15 a | 0.09±65.38 b | 0.02±65.06 b | 0.02±65.28 b | 0.14±65.01 b | ** |
| 2 | 0.39±65.16 a | 0.12±64.32 b | 0.07±63.91 b | 0.07±63.91 b | 0.24±63.74 b | ** |
| 3 | 0.52±64.59 a | 0.03±64.31 a | 0.31±64.33 a | 0.16±64.04 a | 0.19±62.44 b | ** |
| 4 | 0.12±63.88 a | 0.01±63.75 a | 0.33±64.39 a | 0.01±64.03 a | 0.60±62.72 b | ** |
| 5 | 0.15±63.67 a | 0.07±63.45 a | 0.48±63.87 a | 0.71±63.95 a | 0.69±64.37 a | N.S |
| 5-1 | 3.65±61.09 a | 0.32±64.24 a | 0.21±64.31 a | 0.26±64.24 a | 0.48±63.65 a | N.S |

- First  treatment-=(treatment control without adding),  the second transaction, the third, fourth, fifth transactions pills Add palm pollen levels (1, 0.8, 0.6, 0.4)%, respectively.
- Each period represent 28 days.
- Indicate the different characters within the same grade on the existence of significant differences between the averages at the moral level of 0.05
- * Indicate the presence of a highly significant effect (O0.01≥).
- ** Indicate a significant effect (P≤0.05).
N.S absence of significant differences within the same class.

Table(5) shows superior moral (P≤0.05) for the fifth transaction for grain came up palm unit is on all experimental treatments and during the five periods, as well, we find that the overall rate for the fifth treatment taking the high level of morale in the overall rate for the unit is for transactions remaining.

**Table (5): Effect of different levels of pollen grains in the palm unit is (average ± standard error) of laying hens (Lohmann brown) for a period of 66-47 weeks of age**

| treatments period | First treatment | Second treatment | Third treatment | Fourth treatment | Fifth treatment | Levels |
|---|---|---|---|---|---|---|
| 1 | 1.04±83.88 c | 0.03±85.10 c | 0.52±85.91 c | 0.59±88.90 b | 0.56±94.34 a | ** |
| 2 | 0.16±83.96 e | 0.30±86.56 d | 1.08±88.89 c | 0.27±91.03 b | 0.81±95.22 a | ** |
| 3 | 0.39±83.20 e | 0.38±86.61 d | 0.68±88.72 c | 0.36±90.81 b | 0.60±96.85 a | ** |
| 4 | 0.88±83.68 e | 0.72±86.51 d | 0.45±89.42 c | 0.41±92.12 b | 0.57±96.35 a | ** |
| 5 | 0.66±87.63 e | 0.62±91.58 d | 1.05±95.34 c | 0.44±97.62 b | 1.40±102.51 a | ** |
| 5-1 | 0.80±84.47 e | 1.11±87.27 d | 1.54±89.65 c | 1.47±92.09 b | 1.43±97.05 a | ** |

-First treatment=(treatment control without adding), the second transaction, the third, fourth, fifth transactions pills Add palm pollen levels (1, 0.8, 0.6, 0.4)%, respectively.
- Each period represent 28 days.
- Indicate the different characters within the same grade on the existence of significant differences between the averages at the moral level of 0.05
- ** Indicate the presence of a highly significant effect (P≤0.01)
- * Indicate a significant effect (P≤0.05).
- N.S absence of significant differences within the same class.

Table (6) shows the existence of superior moral (P≤0.05) for transactions Add beans boarded palm on the control treatment in the rate of weight - yolk , also outperformed the fifth treatment is highly significant (P≤0.05) on the control treatment during previous periods mentioned above, while We find that the fifth-

treatment may outweigh outperformed significantly (P$\leq$0.05) on the second transaction, third and fourth during the fifth period, reaching treatment Fifth 17.60 g while the second, third and fourth 17.46, 17.20, 17.26 grams, respectively, while the fifth-treatment excelled High outweigh the moral level (P$\leq$0.05) on the treatment of 16.41 control g and shows a high level in the fifth-treatment rate of weight-Saffar in the overall rate for all transactions, as we find that 17.70 g fifth-treatment and other treatments have reached the control and the second, third and fourth 17.15 , 16.82 ,16.48 , 15.73 gm   respectively, the same table shows the presence of superior moral (P$\leq$0.05) in the first period between the fourth treatment 18.24 mm and transactions of the second added, third and fifth in addition to the control treatment 16.67, 17.89, 17.95, 16.74 mm in the rate of high-yolk, while showing table periods during the second, third, fourth and fifth to the absence of significant superiority among all transactions, either in the overall rate table having moral superiority shows (P$\leq$0.05) for the treatment of the fourth 18.17 mm to 17.28 mm control treatment And transactions of second, third and fifth added 17.68, 17.67, 17.16 mm, as the table shows (7) the existence of superior moral (P$\leq$0.05) for transactions pills pollen palm in diameter rate of yolk fourth and fifth in the first period on the control treatment second treatment, and the third, amounting to treatment fourth and fifth 41.14, 40.64 mm, respectively, note that the control of the second and third treatment, and reached 38.33, 39.51, 38.33 mm, respectively, as well as note that this superiority continued into the second period, while the notes in the third period and the existence of moral superiority(P$\leq$0.05) for transactions pills came third and fourth in the palm of diameter rate of yolk control treatment the second, fifth and treatment, and to continue this level of excellence to the fourth period, either the period Fifth note that grain transactions came third palm, fourth and fifth have excelled superior significantly (P$\leq$0.05) in diameter rate of yolk control treatment second treatment, while we find in the overall rate of the fourth and fifth treatment 40.74, 41.06 mm may superior significantly (P$\leq$0.05) on each of the treatment and control of 39.05 mm transactions added the second and third 40, 38.77 mm, attributed the cause of pills outweigh transactions palm pollen that estrogen helps precursor proteins yolk manufacturing yolk Protein PrecursorAnd advances the yolk Vitellogenin protein (22), the precursor protein yolk (Vitellogenin) is transmitted through the blood under the influence of estrogen to the ovary (2), and in ovarian activates two types of yolk proteins are  (Lipovitellin) and (Phosphatin) while kleceredatin  triple move into the yolk Authority lipoproteins beta type be fat formation process (Lipogenesis) yolk  own eggs Under the control of estrogen through its effect on RNA metabolism in the liver (2), said Fayad, and Nagy (1989) there is a positive correlation between the size of the egg yolk and  diameter with age increases the size of the egg, leading to increased diameter  of yolk.

**Table (6) the effect of adding different levels of palm pollen grains in the rate of weight and height and diameter yolk (mean ± standard error) of laying hens.**

| Weight of yolk (gm) | | | | | | |
|---|---|---|---|---|---|---|
| Treatments period | **First treatment** | **Second treatment** | **Third treatment** | **Fourth treatmrnt** | **Fifth treatment** | **levels** |
| 1 | 0.28±15.11 d | 0.10±16.09 c | 0.04±16.56 bc | 0.05±16.77 b | 0.19±17.64 A | ** |
| 2 | 0.19±15.32 e | 0.09±16.15 d | 0.06±16.61 c | 0.11±17.01 b | 0.03±17.44 A | ** |
| 3 | 0.07±15.8 e | 0.06±16.31 d | 0.14±16.76 c | 0.05±17.21 b | 0.02±17.69 A | ** |
| 4 | 0.23±16.04 d | 0.06±16.62 c | 0.04±16.99 bc | 0.08±17.30 b | 0.11±18.16 A | ** |
| 5 | 0.29±16.41 b | 0.08±17.26 ab | 0.26±17.20 ab | 0.41±17.46 ab | 0.47±17.60 A | ** |
| 5-1 | 0.23±15.73 d | 0.21±16.48 d | 0.12±16.82 c | 0.11±17.15 b | 0.12±17.70 A | ** |
| Height of yolk (gm) | | | | | | |
| Treatments period | **First treatment** | **Second treatment** | **Third treatment** | **Fourth treatment** | **Fifth treatment** | **levels** |
| 1 | 0.30±16.67 b | 0.21±16.74 b | 0.35±17.95 ab | 0.58±18.24 a | 0.61±17.89 Ab | N.S |
| 2 | 0.22±17.05 a | 0.47±16.96 a | 0.60±17.78 a | 0.60±18.54 a | 0.39±17.67 A | N.S |
| 3 | 0.20±17.10 a | 0.33±17.56 a | 0.37±17.27 a | 0.67±18.24 a | 0.34±17.97 A | N.S |
| 4 | 0.24±17.64 a | 0.02±17.34 a | 0.30±17.79 a | 0.06±17.73 a | 0.54±17.48 A | N.S |
| 5 | 0.06±17.94 a | 0.30±17.20 a | 0.08±17.57 a | 0.63±18.10 a | 0.24±17.43 A | N.S |
| 5-1 | 0.22±17.28 b | 0.14±17.16 b | 0.11±17.67 ab | 0.13±18.17 a | 0.10±17.68ab | N.S |

-First treatment =(-treatment control without adding),  the second

transaction, the third, fourth, fifth transactions pills Add palm pollen levels (1, 0.8, 0.6, 0.4)%, respectively.

-Each period represent 28 days.

-Indicate the different characters within the same grade on the existence of significant differences between the averages at the moral level of 0.05

-** Indicate the presence of a highly significant effect (P≤0.01).

-* Indicate a significant effect (P≤0.05) .N.S absence of significant differences within the same class

**Table (7): Effect of different levels of palm pollen grains in the diameter rate of yolk (mm) (mean ± standard error) of laying hens (Lohmann brown) for the period 66-47one week old.**

| treatments period | First treatment | Second treatment | Third treatment | Fourth tratment | Fifth treatment | levels |
|---|---|---|---|---|---|---|
| 1 | 0.40±38.66 b | 0.68±39.02 b | 0.36±38.33 b | 0.20±40.64 a | 0.10±41.14 a | ** |
| 2 | 0.24±38.63 b | 0.95±39.51 ab | 0.36±38.37 b | 0.08±41.22 a | 0.65±40.84 a | * |
| 3 | 0.49±39.15 bc | 0.52±38.60 c | 0.09±40.98 a | 0.67±41.16 a | 0.48±40.64 ab | * |
| 4 | 0.52±39.39 bc | 0.54±38.69 c | 0.12±41.11 a | 0.68±41.33 a | 0.37±40.53 ab | * |
| 5 | 0.37±39.44 ab | 0.28±38.04 b | 0.87±41.21 a | 0.93±40.99 a | 0.33±40.55 a | * |
| 5-1 | 0.17±39.05 bc | 0.24±38.77 c | 0.67±40 ab | 0.12±41.06 a | 0.11±40.74 a | ** |

-First treatment =(treatment control without adding), the second transaction, the third, fourth, fifth transactions pills Add palm pollen levels (1, 0.8, 0.6, 0.4)%, respectively.

-Each period represent 28 days.

-Indicate the different characters within the same grade on the existence of significant differences between the averages at the moral level of 0.05

-** Indicate the presence of a highly significant effect ($P \leq 0.01$).

-* Indicate a significant effect ($P \leq 0.05$).

-N.S absence of significant differences within the same class.

Table (8)   having significant superiority ($P \leq 0.05$) in the first period for transactions pills pollen palm second, third, fourth and fifth in the weight ratio of yolk 25.28, 24.98, 25.22, 24.98%, while the control treatment amounted to 24.38%, while showing the fifth table treatment of pollen grains palm has excelled moral superiority ($P \leq 0.05$) in the proportion of yolk weight during the second and third period The fourth control treatment and the second transaction, the third and fourth, while we find the absence of any superiority of moral during the fifth period, and in the overall rate table having superior morally shows ($P \leq 0.05$) for the fifth treatment of 25.23% on the treatment of control 24.30% and transactions pills came second palm and the third and fourth 24.65, 24.58, 24.51%.

**Table 8: Effect of different levels of palm pollen grains in the rate of the relative weight of yolk% (mean ± standard error) of laying hens (Lohmann brown) for the period 66-47one week old.**

| treatments period | First treament | Second treatment | Third treatment | Fourth treatment | Fifth treatment | Age in week |
|---|---|---|---|---|---|---|
| 1 | 026±24.38 b | 0.02±24.98 a | 0.02±25.22 a | 0.03±24.98 a | 0.14±25.28 A | ** |
| 2 | 0.07±23.88 c | 0.04±24.15 b | 0.04±24.34 b | 0.05±24.32 b | 0.14±24.65 A | ** |
| 3 | 0.15±24.41 b | 0.07±24.09 b | 0.19±24.35 b | 0.23±24.43 b | 0.08±25.14 A | ** |
| 4 | 0.17±24.32 b | 0.02±24.49 b | 0.09±24.39 b | 0.23±24.45 b | 0.20±25.72 A | ** |
| 5 | 0.19±24,55 a | 0.07±24.88 a | 0.18±24.62 a | 0.34±25.08 a | 0.80±25.36 A | N.S |
| 5-1 | 0.11±24.30 c | 0.18±24.51bc | 0.16±24.58 bc | 0.15±24.65 b | 0.17±25.23 A | ** |

-First treatment=-(treatment control without adding), the second transaction, the third, fourth, fifth transactions pills Add palm pollen levels (1, 0.8, 0.6, 0.4) %, respectively.

-each period represent 28 days.

-indicate the different characters within the same grade on the existence of significant differences between the averages at the moral level of 0.05

-** indicate the presence of a highly significant effect ($P \leq 0.01$).

-* indicate a significant effect ($P \leq 0.05$).

-N.S absence of significant differences within the same row

Table (9) shows the existence of superior moral in shell weight ($P \leq 0.05$) for the treatment of the fourth coefficients added as well as the control treatment for the first time, while the observed superiority significantly ($P \leq 0.05$) for all transactions Add beans boarded palm in the crust weight on treatment control as the control treatment was 6.69 g, while the second transaction, the third, fourth and fifth 8.20 reached, 8:22, 8, 7.0 g respectively, well, we find that the fourth and fifth transactions outperformed significantly ($P \leq 0.05$) in the cortex weight of 8.72, 8.14 gm on respectively on the control treatment Second, third and treatment in the third period, and there was no significant difference between the treatments are observed during the fourth and fifth period, while the table shows that added the fourth and fifth transactions may superior significantly ($P \leq 0.05$) on the second transaction and the third in the overall rate, it appears the same table that control treatment out performed significantly ($P \leq 0.05$) for periods of the first and third coefficients second added, third, fourth and fifth, while the table appears in the second and fourth periods superior significantly ($P \leq 0.05$) for the control treatment and the second treatment on the third transaction, fourth and fifth, while in the fifth period had not noticed any superiority in the rate of shell thickness between transactions either in the overall rate, we find that the control treatment out performed significantly on the transactions of the five added, including that the pills came palm contain active compounds such as flavonoids and Alsabonyat which works to stimulate the secretion of sex hormones such as estrogen which serves to increase the concentration .The effectiveness of the enzyme Adenylate Cyclase-based neighbor hormone responsible for regulating calcium and phosphorus levels in the blood and increase the number of receptors of this hormone and increase the active form manufacture of vitamin D is important in calcium absorption through the gut and increase in blood plasma, which reflects the composition of the egg shells (8), has come back to the role of the hormone estrogen, which acts on the deposition of calcium in the bones that the core of the bone reserves act as a source of calcium during egg production (14), Increasing this hormone works to increase the concentration of calcium in the blood plasma through effective enzyme Adenylate Cyclase, which depends on hormone Barathiod for being responsible for the regulation of calcium and phosphorus in the blood and increase the manufacture of vitamin D is important for calcium absorption and increase in blood plasma and thus will be reflected on the crust manufacturing process (4).

**Table (9) Effect of different levels of palm pollen grains in the rate of weight and thickness of the crust (average ± standard error) of laying hens.**

| Weight of crust (gm) | | | | | |
|---|---|---|---|---|---|
| treatments period | **First treatment** | **Second treatment** | **Third treatment** | **Fourth treatment** | **Fifth treatment** | Levels |
| 1 | 0.09±5.86 c | 0.07±6.19 b | 0.02±6.37 bc | 0.03±6.52 a | 0.06±6.24 b | ** |
| 2 | 0.31±6.69 b | 0.09±7.70 a | 0.01±8 a | 0.05±8.22 a | 0.24±8.20 a | ** |
| 3 | 0.50±7.11 b | 0.08±7.85 ab | 0.24±7.78 ab | 0.29±8.14 a | 0.07±8.72 a | * |
| 4 | 0.03±7.77 a | 0.04±7.97 a | 0.33±7.80 a | 0.21±8.14 a | 0.58±8.16 a | N.S |
| 5 | 0.05±7.86 a | 0.06±8.08 a | 0.26±8.03 a | 0.32±7.62 a | 0.56±7.13 a | N.S |
| 5-1 | 0.36±7.05 b | 0.34±7.55 ab | 0.31±7.59 ab | 0.32±7.72 a | 0.36±7.79 a | N.S |
| Thickness of crust (mm) | | | | | |
| treatments period | **First treatment** | **Second treatment** | **Third treatment** | **Fourth treatment** | **Fifth treatment** | levels |
| 1 | 0.005±0.32 a | 0.006±0.31 ab | 0.003±0.31 ab | 0.006±0.3 ab | 0.008±0.29 b | N.S |
| 2 | 0.003±0.31 a | 0.003±0.31 a | 0.006±0.3 ab | 0.003±0.3 ab | 0.003±0.29 b | * |
| 3 | 0.003±0.31 a | 0.006±0.31 ab | 0.006±0.30 ab | 0.006±0.3 ab | 0.01±0.29 b | N.S |
| 4 | 0.003±0.31 a | 0.003±0.31 a | 0.003±0.3 ab | 0.003±0.3 ab | 0.005±0.3 b | N.S |
| 5 | 0.005±0.32 a | 0.01±0.3 a | 0.003±0.3 a | 0.006±0.3 a | 0.008±0.29 a | N.S |
| 5-1 | 0.002±0.31 a | 0.002±0.30 b | 0.002±0.30 c | 0.00±0.30 c | 0.002±0.29 d | ** |

-First treatment=-(treatment control without adding), the second transaction, the third, fourth, fifth transactions pills Add palm pollen levels (1, 0.8, 0.6, 0.4)%, respectively.

-Each period represent 28 days.

-Indicate the different characters within the same grade on the existence of significant differences between the averages at the moral level of 0.05

-** Indicate the presence of a highly significant effect (P≤0.01).

-* Indicate a significant effect (P≤0.05) .

N.S absence of significant differences within the same class.

Table(10) shows superior moral (P≤0.05) for transactions Add beans boarded palm during the first period in the relative weight of the crust 9.69, 9.71, 9.71, 9.61% on the control treatment 9.45%, while not shown in the table any superior moral during the second period and forth between the control treatment added transactions, either in the fifth period table and there appears superior moral for the second treatment and the treatment of 11.76 control, 11.64% on transactions the third, fourth and fifth added 10.25, 10.94, 11.48%, while the absence of significant superiority among all transactions table shows in addition to the control treatment in the overall rate.

**Table (10): Effect of different levels of palm pollen grains in the rate of the relative weight of the crust% (mean ± standard error) of laying hens (Lohmann brown) for the period 66-47one week old.**

| Treatments period | First treatment | Second treatment | Third treatment | Fourth treatment | Fifth treatment | levels |
|---|---|---|---|---|---|---|
| 1 | 0.07±9.45 b | 0.06±9.61 a | 0.005±9.71 a | 0.006±9.71 a | 0.04±9.69 a | * |
| 2 | 0.47±10.93 a | 0.08±11.51 a | 0.03±11.72 a | 0.01±11.74 a | 0.28±11.58 a | N.S |
| 3 | 0.67±10.97 b | 0.05±11.58 ab | 0.39±11.30 ab | 0.35±11.53 ab | 0.11±12.39 a | N.S |
| 4 | 0.05±11.78 a | 0.02±11.74 a | 0.42±11.19 a | 0.23±11.49 a | 0.80±11.54 a | N.S |
| 5 | 0.04±11.76 a | 0.00±11.64 a | 0.29±11.48 ab | 0.37±10.94 ab | 0.74±10.25 b | N.S |
| 5-1 | 0.42±10.97 a | 0.40±11.21 a | 0.35±11.08 a | 0.36±11.08 a | 0.48±11.09 a | ** |

-First treatment= (-treatment control without adding), the second transaction, the third, fourth, fifth transactions pills Add palm pollen levels (1, 0.8, 0.6, 0.4)%, respectively.

-each period represent 28 days.

-indicate the different characters within the same grade on the existence of significant differences between the averages at the moral level of 0.05

-** indicate the presence of a highly significant effect ($P \leq 0.01$).

-* indicate a significant effect ($P \leq 0.05$).

-N.S absence of significant differences within the same row .

**References**

1-    League of Arab States, 1988,The Arab Organization for Agricultural Development , Dar Egypt for printing, Khartoum, Sudan.

2-    Hassani, Zia ul Hassan.   2000. physiology of poultry. The Ministry of Higher Education and Scientific Research - University of Baghdad - National Library for printing and publishing - Baghdad.

3- Khalaf Allah, Abdul Aziz Mohammed. (1988), medicinal and aromatic .allenbataat in the Arab world

4- Darraji, Hazim Jabbar. 1998. Effect of ascorbic acid to the diet in the physiological and productivity traits to herds of mothers of broiler chickens reared Vaobro during the summer months. Ph.D . faculty of Agriculture. Baghdad University.

5- Fayad, Hamdi Abdul Aziz and Naji Saad Abdul Hussain. (1989). Technology poultry products. The first edition - the Directorate of Higher Education Press. Baghdad, Iraq.

6-Alferez, M.J.M. and Campos, M.S.( 2000). Beneficial effect of pollen and/or propolis on the metabolism of iron, calcium, phosphorus and magnesium in rats with nutritional ferropenic anemia. J. Agric. Food. Chem., 48: 5715-5722.

7-Ahmed M. B., Hasona N. A. S. and Selemain H.. 2008.Protective effects of extract from dates *(Phoenix dactylifera L*.) and. ascorbic acide on thio actamide -induced hepatotoxicity in rats; Iranian J. Pharma. Resar, 7(3): 193- 201.

8-El-Aroussi, M. A.; Forte, L. R.; Eber, S. L. & Biellier, H. V. 1993. Adaptation of the Kidney during reproduction Role of estrogen in the regulation of responsiveness to parathyroid hormone. Poult. Sci., 72: 1548-1546.

9-Aydilek N, Aksakal M, Karakilcik AZ. 2004.Effects of testosterone and  vitamin E on the antioxidant system in rabbit testis. ndrologia; 36:277-81.

10-Broadhurts, C.L. (1999). Bee products: medicine from the live. Nutr. Sci. News, 4: 366-368.

11-Bahmanpour S., Talaei T., Vojdani Z., Panj ehshalin M. R.,Poosipasand A., Zareei S. and Ghaeminia M.2006. Effect of Phoenix dactylifem pollen on sperm parameters and reproductive system of adult male rats.Iran J.Med.

12-Duncan , D.B., (1955) .  Multiple range and multiple F Biometrics ,  11: 1-42 test