Effect of adding different levels of Lycopene powder to the ration on some productive and egg quality parameters of the Laying hens ISA-Brown*

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Abstract: This research was conducted to study the effect of adding different levels of Lycopene powder to the ration on some productive and egg quality parameters of laying hens ISA-Brown. Used in this experiment 345 layer hens ISA Brown and were 23 week old were randomly allotted in 5 groups, 3 replicates (23 hens per replicate) For the period from 7/1/2013 to 23/6/2013. Experiment included five treatments and by the following: First treatment: a negative control group without of any addition, treatment second group control positive was added 200 mg / kg feed (vitamin E) to the ration, and treatments, third, fourth and fifth represents add lycopene powder into the ration at rates 100 150 and 200 mg / kg feed respectively. Included experiment estimate some productive and egg quality parameters: (egg production, the cumulative number of eggs, egg weight, egg mass, haugh unit, the relative weight of the shell and shell thickness). The results of the experiment to get significant improvement ($P < 0.05$) for treatments lycopene powder and vitamin E treatment in the egg production parameter, the cumulative number of eggs, egg weight, egg mass, haugh unit, the relative weight of the shell and shell thickness production during the periods as compared to the first treatment (control). However, recorded fifth-treatment (in addition to 200 mg lycopene / kg feed) the best results.

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Introduction

Lycopene is a natural dye manufactured by plants and microorganisms during the process of photosynthesis to protect them from the activity light and increase light sensitivity (Rao, 2000; Rao and Rao, 2003; Rao, 2004) is found in vegetables and some types of fruit with red dye (such as pineapple, orange, tomatoes, grapefruit, strawberries and sweet peppers) and is tomato main source of his in the human diet, and quantity of existing depend on the type and maturity of tomato (Sies and Stahl, 1995; Stahl and Sies, 1996; Gerster, 1997; Rao and Agarwal, 1999; Markovic and et al. 2006) which is a powerful antioxidant that provides protection against damage to the cells of the body due to free radicals, and dietary antioxidants such as carotenoids role in health and disease, which has increased the interest in them is largely to make sure the benefits of these compounds in the diet as is of great importance in the fight against the free radicals generated as a result of oxidative stress and protect cells from damage (Nierenberg et al, 1997; Leal and et al, 1999). there are more than 700 kinds of carotenoids have been identified, but only six forms of which are present in food and in the blood and tissues of the body and this carotenoids are α-and β-lycopene and β-cryptoxanthin, lutein, zeaxanthin, carotene (Borel and et al, 2007). and lycopene effectiveness is very high in the fight against diseases, a preventive measure against heart disease, cardiovascular and cancer of the prostate gland and the gastrointestinal tract, skin, pancreas, uterus, and there are many studies indicate the importance of lycopene to humans in health and disease (Ševčíková and et al, 2008). also, a diet rich in tamato increases the levels of high-density lipoproteins high Density Lipoprotein and reduces the level of lipoproteins and low-lying density Low Density Lipoprotein (Napolitano and et al, 2007). either vitamin E is one of the most powerful antioxidants and has played a major role in many vital functions within the body and use extensively as additives to animal feed to improve the performance and enhance the immune status and improve the quality of meat, eggs and increase vitamin E in animal products increases the content within the human body during eating these products (Sunder and et al, 1997; Flachowsky, 2000). has pointed (Chan and Decker, 1994) the inability of poultry to manufacture vitamin E, therefore, should be affixed to the feed as one of the basic requirements fodder has been observed that added to the diets of birds improves growth and productive performance and improves the quality of the meat against oxidative

deterioration as well as the role of the powerful antioxidant scavenging ability on free radicals (Skrivan and et al., 2010; Guo and et al. 2001).

Given the importance of antioxidants as additives fodder and for its role in improving the qualities of productivity as the researcher found (Ševčíková et al, 2008) that lycopene is important in the fight against free radicals and this importance be useful for poultry as consisting of free radicals in the body of the chicken at higher temperatures and in cases of stress, when the rapid growth in cases of higher production and metabolism. Therefore, this study aimed to determine the Effect of adding different levels of Lycopene powder to the ration on some productive and egg quality parameters of the Laying hens ISA-Brown.

Materials and methods

This study was carried out at the poultry farm of Animal Resource college of Agriculture, University of Tikrit from 7/1/2013 to 23/6/2013. and used the 345 layer chickens type ISA-Brown age 23 a week. The birds were distributed randomly on five treatments at the rate of 69 hens per treatments, and each treatments was made up of three replicates and by 23 per hen to duplicate. Been breeding birds in the hall with dimensions of 45 m in length 22:00 casually rise 3 divided by barriers of metal wire in the form of indwelling (Pens) area of each Pen (2 × 2) m. The experimental treatments as follows: first treatment: control group negative free of any addition, second treatment: control group positive addition of vitamin E to the diet concentration of 200 mg / kg feed, third treatment: Add powdered lycopene to feed concentration of 100 mg / kg feed, fourth treatment: Add powder to the bush lycopene concentration of 150 mg / kg feed and fifth treatment: Add powder to the bush lycopene concentration of 200 mg / kg feed. Lycopene powder was presented to the birds two weeks before the beginning of the experiment until the end of the probation period as a period amounting to 6 months before the start of a preliminary experiment did not collect the data. Were imported material lycopene used in the experiment of Turkey, and fed the birds on a ration hens

(Table 1) and offered the bird to (16) hour Lighting for the duration of the experiment using lamps strongly (60 watts) to ensure that the intensity of illumination to all the cages as required. The recorded temperature in the hall of laying hens length of the experiment day (eight o'clock in the morning and evening) using a thermometer (2) placed at both ends of the hall.

Was estimated by some qualities productivity and quality of eggs: (egg production, the cumulative number of eggs, egg weight, egg mass, and haugh unit, the relative weight of the shell and the thickness of the shell).

Design and use of indiscriminate full Completely Randomized Design (CRD) to evaluate the effect of different treatments on the traits and each period of the experiment. And compared the differences between the averages of the moral test transactions using polynomial Duncan (Duncan, 1955). And use the statistical program ready SAS (SAS, 2010) to analyze the data.

Table (1) ration of production used during the experiment and its chemical composition

Ingredients	**(%)**
Yellow corn	55.56
Soybean meal(44%) Protein	29.1
Premix *	2.5
Vegetable oil Limestone	2.7 8.36
Salt	0.3
Dicalcium phosphate Lysine methionine	1.4 0.04 0.04
	100
****Chemical analyses**	
ME (kcal/kg2)	2753
Crude protein3 (%)	17.52
Phosphorus3 (%)	0.60
Calcium3 (%)	4.02
Lysine (%) Methionine(%) methionine +Cisten	1.0 0.47 0.76

* Each kg of Albraimax consists of: 4% crude protein 0.550 Kalusarh energy represented 0.16% calcium, 10.6% phosphorus, 4.0% sodium 0.2750 mg manganese 0.1670 mg iron 0.2670 mg zinc 0.335 mg Cu, 8.35 mg Cobalt 0.50 mg like, 6.7 mg Selenium 0.27 mg Mithaaonin, 27.6 Mithaaonin with Sistine, 1.350 mg niacin 400,000 IU of vitamin A, 85000 mg vitamin D3, 1400 mg of vitamin E, 100 mg vitamin K3, 85 mg of vitamin B1, 200 mg vitamin B2, 400 mg vitamin B6 and 680. 0 mg vitamin B12.

** Was calculated according to the chemical composition analysis silo contained in the NRC (1994).

Results and Discussion

Productive parameters:

Shown in Table (2) The effect of different concentrations of powdered lycopene to a ration in the rate of egg production, calculated on the basis of (HD%) of the laying hens, it shows a lack of significant differences between treatments all at term productivity first (24-27) a week as the percentage of egg production (81.08, 82.16, 81.41, 82.83, 83.24 %) of the five coefficients, respectively. But when the term productivity (28-31) a week we note the presence outweigh the significant ($P < 0.05$) for treatments powder lycopene and concentrations 100, 150, 200 mg / kg feed (treatment the third, fourth and fifth,

respectively), where the recorded values (84.91, 84.58 and 85.91 %, respectively) were followed by treatment of the second addition of 200 mg vitamin E / kg feed and recorded (84.41 %) to record the treatments first (control) is the lowest rate for this trait and was (83.32 %), and at periods of productivity (32 - 35.36 to 39 and 40 -43 week) note outweigh the treatment fourth and fifth significant (P <0.05) to record (90.24, 90.99 % and 92.91, 93.49 % and 91.32 and 92.64 %), respectively, to record the treatment first (control) is the lowest rate for this trait and amounted to (88.91, 91 0.61 and 87.64 %), respectively, when periods of productivity, and at the time the production of (44-47 weeks) outperformed the treatment fifth treatment Add 200 mg lycopene / kg feed was significantly (P <0.05) to record the proportion of the production of eggs was (89.41 %), followed by treatment fourth added 150 mg lycopene / kg feed and the rate of production amounted to (87.08 %) and then came second treatment add 200 mg vitamin E / kg feed and recorded (86.28 %) and third treatment add 100 mg lycopene / kg feed and recorded (85.32 %) to record The first treatment (control) is the lowest rate for the production of eggs and was (24.85 %). As in the overall rate was recorded treatment fourth and fifth highest production of eggs amounted to (88.16 and 89.28 %), respectively, compared to the rest of the treatments and recorded as follows (86.30, 87.23, 86.98 %) of the treatments first, second and third, respectively.

The notes of the same table, and significant differences (p <0.05) in the number of eggs cumulative (eggs / hen) for the duration of (24-47 weeks) outperforming the treatment fourth and fifth morally on the rest of treatment (148.10 and 149.99 eggs / bird), respectively followed by the second and third treatments (146.54 and 146.12 eggs / bird), respectively, as compared to the first (control), which recorded the lowest cumulative number of eggs during the period of a week and amounted to 24-47 (144.98 eggs / bird).

Table (2) Effect of lycopene powder into the ration to produce eggs (HD%) of laying hens type ISA Brown (average ± standard error)

Timers productivity (Week)	The first treatment (Control group)	The second treatment (200 mg vitamin E / kg feed)	The third treatment (100 mg lycopene / kg feed)	The fourth treatment (150 mg lycopene / kg feed)	The fifth treatment (200 mg lycopene / Kg feed)
27- 24	81.08±1.58 a	82.16±1.45 a	81.41±1.20 a	82.83±2.40 a	83.24±2.72 a
31- 28	83.32±1.78 b	84.41±1.81 a	84.91±1.85 a	84.58±0.88 a	85.91±0.88 a
35- 32	88.91±1.45 b	89.99±1.33 ab	89.93±1.52 ab	90.24±1.15 a	90.99±1.66 a
39- 36	91.61±1.52 b	91.83±1.15 b	91.74±1.20 b	92.91±2.28 a	93.49±1.66 a
43 - 40	87.64±0.57 b	88.73±0.33 b	88.57±0.88 b	91.32±1.52 a	92.64±1.20 a
47- 44	85.24±0.88 b	86.28±1.52 ab	85.32±1.20 b	87.08±1.15 ab	89.41 ±0.57 a
47- 24 Average General	86. 30 ±1.63 b	87.23±1.47 ab	86.98±1.35 b	88.16 ±1.56 a	89.28±1.53 a
The cumulative number of eggs (egg / bird)					
47- 24	144.98±2.47 c	146.54±2.51 b	146.12±2.31 b	148.10±1.30 a	149.99±1.33 a

Various characters within each class indicate the presence of significant differences at the level of probability (p <0.05).

It is clear from the data table (3) The effect of different concentrations of powdered lycopene to a ration in egg weight (g) of the laying hens compared to the addition of vitamin E and the control treatment, they did not note the existence of any significant differences in the duration of the (24-27 weeks) between the experimental treatments all the rates of egg weight during this period (56.74, 57.08, 56.74, 57.33 and 57.99 g) of the coefficients of T5 - T1, respectively, while the recorded transactions fifth, fourth and second best rate for the weight of the egg product as recorded treatment Add 200 mg lycopene / kg feed higher rates as it was (60.41 g), followed by the two treatments (fourth, 59.41) and (second, 59.24) g at term productivity (28-31 weeks) as compared to the third add 100 mg lycopene / kg feed and the control treatment, which the lowest rate for the weight of the eggs during this the total duration (57.83 and

57.33 g), respectively, rates continued to rise egg weight product when the duration of the (32-35 weeks) as recorded transaction fifth Add 200 mg lycopene / kg feed and reached the highest values (62.88 g), followed by the fourth treatment Add 150 mg lycopene / kg feed (62.74 g) and then came second treatment Add 200 mg vitamin E / kg feed (61.99 g) and after the third treatment (60.91 g) to record the transaction first (control) is the lowest rate for egg weight was (59.57 g). It is the same table we note that the highest value for the weight of the egg product has been registered at the productive periods (36-39 0.40 to 43 and 44-47 weeks) was in favor of the transaction and the fifth significant difference (P <0.05), where the weight of eggs was recorded (65.95, 68.71 and 68.54 g), respectively, followed by the fourth treatment (64.91 and 66.37 and 65.16 g), respectively, and then the second treatment (63.84 and 65.91 and 64.42 g), respectively, and then came the third treatment and recorded (62.68 and 64.83 and 63.79 g), respectively, to record the first treatment (control) the lowest values when these periods in terms of (62.23, 63.57 and 61.17 g), respectively. and the overall rate of egg weight and presence outweigh the moral for the treatment add powdered lycopene fifth and fourth terms (64.08, 62.65 g), respectively, were followed by treatment of the second addition of 200 mg vitamin E / kg feed (62.08 g) and then came third treatment (61.13 g) and without significant difference from the first treatment (control) recorded the lowest rate in the egg weight (60.10 g).

Table (3) Effect of lycopene powder into the ration on egg weight (g) of the laying hens type ISA Brown (average ± standard error)

Timers productivity (Week)	The first treatment (Control group)	The second treatment (200 mg vitamin E / kg feed)	The third treatment (100 mg lycopene / kg feed)	The fourth treatment (150 mg lycopene / kg feed)	The fifth treatment (200 mg lycopene / Kg feed)
27- 24	56.74±1.28 a	57.08±1.24 a	56.74±1.46 a	57.33±1.33 a	57.99±1.42 a
31- 28	57.33±1.63 b	59.24±1.52 a	57.83±1.74 b	59.41±1.62 a	60.41±1.78 a
35- 32	59.57±1.06 c	61.99±1.34 a	60.91±1.02 b	62.74±1.41 a	62.88±1.52 a
39- 36	62.23±1.13 b	63.84±1.19 b	62.68±1.14 b	64.91±1.29 ab	65.95±1.41 a
43 - 40	63.57±1.72 c	65.91±1.68 b	64.83±1.53 c	66.37±1.74 b	68.71±1.82 a
47- 44	61.19±1.64 d	64.42±2.08 b	63.79±1.84 c	65.16±1.98 b	68.54±2.04 a
47- 24 Average General	60.10±1.91 b	62.08±1.76 ab	61.13±1.42 b	62.65±2.03 ab	64.08±2.05 a

Various characters within each class indicate the presence of significant differences at the level of probability (p <0.05).

One result of the effect of addition of different concentrations of powdered lycopene or add vitamin E compared with control in the recipe egg mass product (g) for laying hens and are described in Table (4) shows that the highest rate of egg mass at the product term productivity (24-27 weeks) has recorded the fifth treatment (48.27 g) and fourth treatment (47.48 g) and a difference of moral (P <0.05) from the rest of the treatment and then came the treatment of the first, second, third and recorded (46.00, 46.89 and 46.19 g), respectively, and when the term productivity (28 - 31 a week) continued to outweigh the fifth and fourth treatment highest rate of egg mass (g) and total (51.89, 50.24 g), respectively, were followed by second treatment (50.00 g) and then came third treatment (49.10 g) to record the transaction first lowest rate for egg mass and total (47.76 g) when the term productivity (32-35 and 36-39 weeks) note the continued superiority of treatment fifth treatment fourth significantly (P <0.05) on the remaining transactions with an average egg mass (57.21, 56.61 and 61.65, 60.30 g), respectively, to record treatment of the first (control) is the lowest rate for the egg mass and total (52.96 and 57.00 g), respectively, while the recorded transaction fifth add 200 mg lycopene / kg feed significant superiority (P <0.05) on the rest of the experimental treatments to record (63.65 and 61.28 g) respectively when (40-43 and 44-47 weeks), while the lowest recorded rate of the first treatment for egg mass and total (55.71 and 52.17 g), respectively, and the same table shows the overall rate of egg mass that has overtaken the fifth treatment significantly (P <0.05) as

recorded (57.32 g), followed by the fourth treatment which recorded (55.32 g) as compared to the first (control), which recorded the lowest rate of reaching the egg mass (51.95 g).

The addition of different levels of powder lycopene to improve the qualities of productivity of laying hens in general and the results of the study are compatible with the results of the researcher Sahin and et al. (b 2006), as found significant effect ($p < 0.05$) to add lycopene in the diets of Quail concentration of 100 mg / kg feed and vitamin E concentration of 250 mg / kg in the recipe egg production transactions lycopene compared to the first (control) and vitamin E, as are consistent with what he referred to Safamehr et al. (2011) there are significant differences ($p < 0.05$) when using the Bethel tomatoes in the diets of laying hens by 4.8 and 12 % compared to a set of control as it outperformed all transactions in addition Bethel tomato in each of the egg production, egg weight, egg mass product, so that the lycopene and vitamin E from lines of defense the first antioxidant especially lipid oxidation (McDowell, 1989; Roa and Agarwal b, 1998) thereby reducing the level of MDA compound in the blood serum of the occurrence of a moving body fat oxidation (Leal and others, 1999).

Vitamin E is one of the most natural antioxidants effectively used in the feeding of poultry (Chen et al, 1998), and plays a vitamin E role in preventing oxidative stress in combination with selenium and protect body cells from damage caused by the process of oxidative stress, as well as works of vitamin E on the hunt hydroxyl free thus they provide the first line of protection against (Duell 1996,). And that the improvement in the qualities of productivity of laying hens fed a diet containing vitamin E is consistent with what he referred to Canan and etal., (2007) from the addition of vitamin E in the diet of laying hens concentration of 45 IU / kg feed and in the circumstances of natural heat there was a significant increase in the proportion of egg production in spite of the lack of significant differences in egg weight.

Table (4) Effect of lycopene powder into the ration on the egg mass (g) of the laying hens type ISA Brown (average ± standard error)

Timers productivity (Week)	The first treatment (Control group)	The second treatment (200 mg vitamin E / kg feed)	The third treatment (100 mg lycopene / kg feed)	The fourth treatment (150 mg lycopene / kg feed)	The fifth treatment (200 mg lycopene / Kg feed)
27- 24	46.00±0.78 b	46.89±0.72 b	46.19±0.69 b	47.48±0.82 a	48.27±0.85 a
31- 28	47.76±0.88 b	50.00±1.21 a	49.10±1.45 ab	50.24±0.85 a	51.89±1.69 a
35- 32	52.96±1.31 c	55.78±1.43 ab	54.77±0.96 b	56.61±1.23 a	57.21±1.09 a
39- 36	57.00±1.45 b	58.62±0.29 b	57.50±1.45 b	60.30±1.46 a	61.65±0.99 a
43 - 40	55.71±0.62 d	58.48±0.77 c	57.41±0.90 c	60.60±1.55 b	63.65±1.63 a
47- 44	52.15±0.61 c	55.58±1.67 b	54.42±0.53 b	56.74±0.69 b	61.28±0.80 a
47- 24 Average General	51.93±1.25 c	54.22±1.43 b	53.23±1.84 b	55.32±1.09 b	57.32±0.14 a

Various characters within each class indicate the presence of significant differences at the level of probability ($p < 0.05$).

Egg quality parameters:

Table shows (5) The effect of different concentrations of lycopene powder or add vitamin E compared to the control treatment in the unit is a recipe for laying hens, noting the absence of any significant differences between the experimental treatments when (24-27 and 28-31 weeks), either at the time of production (32-35 weeks) has recorded the fifth treatment add lycopene powder 200 mg / kg feed significant superiority ($P < 0.05$), followed by the fourth treatment add lycopene powder 150 mg / kg feed treatment and the second addition of vitamin E 200 mg / kg the feed (88.98, 88.52, 88.05), respectively, were followed by the third treatment Add lycopene powder 100 mg / kg feed and recorded (87.05) as compared to the first (control), which

recorded the lowest value was (85.14). Continued moral superiority for the treatment of the second, fourth and fifth, which recorded the highest values when (36-39 weeks) and (40-43 weeks) reaching (88.12, 89.48 and 89.45), respectively, and (87.60, 87.13 and 88.67), respectively, were followed by the two treatments the first and the third, which lowest rate for this value reaching (86.66, 86.61), respectively, and (84.82, 83.40), respectively. But when the term productivity (44-47 weeks) has outperformed the transaction fifth (Add powdered lycopene 200 mg / kg feed) was significantly (P <0.05) on the rest of the transaction to record (88.47), while the recorded transaction first minimum value and amounted to (83.12) for the recipe unit it is. It also appeared outweigh the moral for the treatment of the fifth, fourth and second treatments third (Add powdered lycopene 100 mg / kg feed) and treatment first (control) in the overall rate for the unit is through the duration of the experiment full of (24-47 weeks), which amounted to (88.96, 88.20 and 88. 07) were followed by treatment of the third (86.52) to record the control treatment and reached the lowest values (85.62).

Seen from the table (6) The effect of different concentrations of powdered lycopene in the bush in the relative weight of the crust (%) for laying hens or add vitamin E compared with control, as observed presence outweigh the significant (P <0.05) when the term productivity (24-27 weeks) for the treatment of the fifth, second and fourth in the relative weight of the egg shell (%)(9.72, 9.48 and 9.41 %), respectively, to record the transaction the third and the first minimum values of (8.92 and 8.52 %), respectively, and when the term productivity (28-31 weeks) outperformed the fifth treatment was significantly (P <0.05) on all transactions to record (10.03 %), while they recorded the first treatment (control) is the lowest rate for this trait, and was (9.50 %) and note the periods when productivity (week 32-35) (36-39 weeks) and (40-43 weeks) outweigh the treatment of the fifth and fourth significantly (P <0.05) on the rest of the treatment to the highest value to the relative weight of the crust (%) and total (10.17 and 10.04 %), respectively, and (10.13 and 10.11 %), respectively, and (9.83 and 9.15 %), respectively, to record the first treatment (control) is the lowest rate for this trait, and was (9.63 and 8.65 and 8.51 %), respectively, and when the term productivity (44-47 weeks) outperformed the fifth treatment, fourth and second (9.91, 9.46 and 9. 01 %), respectively morally P <0.05)) to record the treatment the third and the first lowest rate to the relative weight of the crust (%) and total (8.62 and 8.22 %), respectively, and shows the same table that the overall rate of prescription weight relative to egg shell (%) refers to outweigh the fifth treatment, fourth and second morally (P <0.05) to record the highest value in terms of (9.96, 9.68 and 9.48 %), respectively, were followed by treatment of the third and recorded (9.08 %) to record the first treatment minimum value for the recipe relative weight of the egg shell and was (8.83 %).

Table (5) Effect of lycopene powder into the ration on the rate of the haugh unit of laying hens ISA Brown (average ± standard error)

Timers productivity (Week)	The first treatment (Control group)	The second treatment (200 mg vitamin E / kg feed)	The third treatment (100 mg lycopene / kg feed)	The fourth treatment (150 mg lycopene / kg feed)	The fifth treatment (200 mg lycopene / Kg feed)
27- 24	87.29±0.35 a	88.20±0.19 a	87.66±0.52 a	88.22±0.28 a	88.82±0.08 a
31- 28	88.21±0.64 a	89.34±0.53 a	88.58±0.29 a	89.13±0.31 a	89.40±0.32 a
35- 32	85.14±0.26 b	88.05±0.55 a	87.05±0.13 ab	88.52±0.11 a	88.98±0.08 a
39- 36	86.61±1.27 b	88.12±1.09 a	86.66±1.19 b	89.48±0.21 a	89.45±0.20 a
43 - 40	83.40±0.21 b	87.60±0.19 a	84.82±0.23 b	87.13±0.13 a	88.67±0.31 a
47- 44	83.12±0.87 c	87.13±1.61 ab	84.36±1.44 c	86.73±1.70 b	88.47±1.84 a
47- 24 Average General	±1.0885.62 b	±1.1488.07 a	86.52±1.04 b	88.20±1.02 a	88.96±0.83 a

Various characters within each class indicate the presence of significant differences at the level of probability (p <0.05).

Table (6) Effect of lycopene powder into the ration on the relative weight of the shell (%) for laying hens type ISA Brown (average ± standard error)

Timers productivity (Week)	The first treatment (Control group)	The second treatment (200 mg vitamin E / kg feed)	The third treatment (100 mg lycopene / kg feed)	The fourth treatment (150 mg lycopene / kg feed)	The fifth treatment (200 mg lycopene / Kg feed)
27- 24	8.52±0.25 b	9.48±0.10 a	8.92±0.21 b	9.41±0.12 a	9.72±0.08 a
31- 28	9.50±0.13 b	9.82±0.18 b	9.73±0.17 b	9.92±0.14 b	10.03±0.06 a
35- 32	±0.229.63 b	±0.119.90 b	±0.149.88 b	±0.0610.04 a	10.17±0.08 a
39- 36	±0.058.65 c	9.80±0.12 b	8.80±0.03 c	±0.3110.11 a	±0.2213.10 a
43 - 40	8.51±0.05 b	8.91±0.08 b	8.57±0.06 b	9.15±0.13 a	9.83±0.11 a
47- 44	8.22±0.23 b	9.01±0.26 a	8.62±0.25 b	9.46±0.28 a	9.91±0.27 a
47- 24 Average General	8.83±0.41 b	9.48±0.39 a	9.08±0.25 ab	9.68±0.19 a	9.96±0.10 a

Various characters within each class indicate the presence of significant differences at the level of probability ($p < 0.05$).

Table shows (7) The effect of different concentrations of powdered lycopene in the ration in the thickness of the shell (%) of laying hens to outweigh the significant ($P < 0.05$) for the treatment of the fifth addition powder lycopene 200 mg / kg feed and treatment fourth Add powdered lycopene 150 mg / kg feed and treatment The second addition of vitamin 200 E mg / kg feed where highest value for the thickness of the crust and was (0.35%) when the term productivity (24-27 weeks), while they recorded the transaction first and third lowest rate of shell thickness (%) and amounted to (0.34%), and at the time productivity (28-31 weeks) note outweigh all transactions of lycopene powder and added a second treatment, vitamin E morally where recorded (0.35%) on the first treatment (control) and recorded (0.34%) and productivity at the time (32-35 weeks) outperformed significantly ($P < 0.05$) treatment fifth Add powdered lycopene 200 mg / kg feed to record the highest value for the thickness of the crust and was (0.37%), while the recorded transaction first minimum value of this trait and was (0.33%) and at periods of productivity (36-39 and 40-43 weeks) outperformed the transaction fifth and the fourth was significantly ($P < 0.05$) to record the highest rate of the thickness of the crust and was (0.37 and 0.36 %), respectively, while they recorded the transaction first lowest rate for the thickness of the crust and was (0.34 and 0.34%), and when the term productivity (44-47 weeks) outperformed the transaction fifth morally $P < 0.05$)) on all transactions to record the highest rate of the thickness of the crust (0.36%), while the recorded transaction first (control) is the lowest rate for the recipe thickness of the crust and was (0.33%) and through the general rates for this trait note outweigh the transaction fifth was significantly ($P < 0.05$) on all transactions to record the highest rate of the thickness of the crust (0.36%), followed by treatment of the fourth and was (0.35%) and then treated the second and third Sjlta (0.34%), while the recorded transaction first lowest rate for the recipe thickness of the crust and was (0.33%).

Demonstrated many of the studies that the lycopene important role and preventive to preserve the health and strength of the bones of the body (Cortizo and et al., 2000; Kim and others, 2003; Rao and others, b2003; Rao and others, 2007) and the increase in the proliferation of bone cells by lycopene may be the result of his anti- oxidants and curb the damage caused by oxidative stress resulting from the types of oxygen effective (ROS), which inhibit the function of cells Albanian bones and reduces lycopene activity of thyroid hormone neighbor thyroid catalyst for the process of re- absorption of calcium and generally the carotenoids, all including lycopene urges shifts bone positive and increased deposition of calcium in the body neighborhood (Liu and et al., 1999; Rao and et al., 2007) and this explains the significant increase of the transactions lycopene, as can be seen clearly the role of lycopene in increased deposition of metallic elements such as calcium in the egg shell and the associated improvements moral qualities of the egg shells product with the increase in the concentration of powder lycopene user compared with my treatment control and the addition of vitamin E, and at the same time proven treatment add vitamin E superiority over the control treatment in improved quality characteristics of eggs under study and this goes back to the role of vitamin E in reducing the stress experienced by birds, especially thermal stress which

may be associated with our study during the summer months warm (Kirunda and et al., 2001; Canan and et al., 2007) and prevents vitamin E effects of hydrogen protons and free radicals as it works on the saturation and thereby preventing cases of oxidative stress self-Auto Oxidation and thus improve the health status and the body's immune (McDowell,1989; Bast and et al., 1991).

Table (7) the effect of adding lycopene powder to the ration on the thickness of the shell (%) for laying hens type ISA Brown (average ± standard error)

Timers productivity (Week)	The first treatment (Control group)	The second treatment (200 mg vitamin E / kg feed)	The third treatment (100 mg lycopene / kg feed)	The fourth treatment (150 mg lycopene / kg feed)	The fifth treatment (200 mg lycopene / Kg feed)
27- 24	±0.010.34 b	±0.020.35 a	0.34±0.01 b	±0.030.35 a	±0.020.35 a
31- 28	±0.020.34 b	±0.040.35 a	±0.020.35 a	±0.010.35 a	±0.030.35 a
35- 32	±0.010.33 d	±0.030.34 c	±0.030.34 c	±0.060.36 b	±0.070.37 a
39- 36	±0.030.34 c	±0.040.35 b	±0.020.34 c	0.37±0.04 a	±0.030.37 a
43 - 40	0.34±0.02 c	0.35±0.02 b	0.35±0.01 b	0.36±0.02 a	0.36±0.04 a
47- 44	0.33±0.01 d	0.35±0.04 b	0.34±0.03 c	0.35±0.05 b	0.36±0.06 a
47- 24 Average General	0.33±0.03 d	0.34±0.02 c	0.34±0.05 c	0.35±0.04 b	0.36±0.05 a

Various characters within each class indicate the presence of significant differences at the level of probability ($p < 0.05$).

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