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EFFECT OF ADDING SOME MEDICINAL PLANTS ON SOME CARCASS CHARACTERISTIC OF JAPANESE QUAIL

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Abstract

This study was conducted in the field quail of the Agriculture College, University of Basrah for the period from 24/11/2018 to 04/01/2019 to study the effect of adding different levels of dietary Marjoram (*Origanum vulgarae*) and (*Rosmarinus officinalis* L.) on some productive of Japanese Quail in the study (450) chick. Unsexed one day old chicks were used at an initial weight 8.5 g. The chicks were randomly distributed into Ten treatments each treatment contained 45 chicks with three replicates each one has 15 chicks, the treatments as the following T1, T2, T3, T4, T5, T6, T7, T8, T9, T10 (Control, Adding 5 g powder of marjoram leaves from one day to 21 days, Add 5 g of marjoram powder from the age of 22 to 42 days, Adding 5 g of rosemary leaves powder from 1 day to 21 days, Adding 5 g of rosemary leaves from 22 to 42 days, Adding 2.5 g powdered leaves of marjoram and 2.5 g of rosemary leaves from 1 day to 21 days, Adding 2.5 g powdered leaves of marjoram and 2.5 g of rosemary leaves from 22 to 42 days, Adding 5 g of powder of marjoram leaves from one day to the end of the experiment, Adding 5 g of rosemary leaves powder from one day to the end of the experiment, Adding 2.5 g powder of marjoram leaves and 2.5 g of rosemary leaves from one day to the end of the experiment where significant differences were observed in some dressing percentage to the weight of the carcass, carcass cuts (breast, thigh) as well as in relation to the relative weight of the liver. No significant differences were observed in the relative weight of the heart and gizzard.

Keywords: *Origanum majorana*, *Rosmarinus officinalis*, carcass characteristic, Japanese quail.

Introduction

Recent studies and research have increased interest in raising Japanese quail in recent years due to the advantages that this bird favors over the rest of the birds in the research field through high growth speed, early sexual maturity, high resistance, and the advantage of meat with good taste and delicious flavor desirable to consumers as well as abundance of egg production up to 85% That is why quail plays a significant role in meat and egg production (Vali, 2008).

The use of medicinal plants as food additives has demonstrated a high ability to improve the productive, physiological, immunological and reproductive traits of poultry and its work is related to improving the environment of the gut and enhancing the body's immunity by inhibiting or hindering the growth of pathogenic bacteria (Husmanni *et al.*, 2011) as well as improving the productive performance of poultry. (Sang-Oh *et al.*, 2013) by increasing the secretion of some digestive enzymes and improving the absorption of nutrients (Vukic-Vranjes *et al.*, 2013) marjoram is one of the oldest medicinal herbal plants that has an important role as an antioxidant and an anti-many harmful bacteria because it contains active compounds such as rosmarinic acid, resinous substances and flavonoids And a camphorous substance (ALwahsh, 2008), since (Osman *et al.*, 2010) stated that adding 0.5% of marjoram to productive feed of broiler chickens led to an increase in the weight of the carcass and the weights of cuts.

Rosemary is considered a medicinal plant that works as an anti-microbial and anti-inflammatory because it contains cathisol (peter, 2004) and between (Al-Hamid *et al.*, 2015) when adding rosemary leaf powder at a level of 1.5 g / kg feed at the age of one day and up to 35 days led to significant moral superiority in Thoracic segment No significant differences were observed in both the weight of the cleaned carcass and the clearance ratio

Materials and Methods

The present study was conducted at quail's farm of Agriculture College/University of Basra for the period from 24/11/2018 to 04/01/2019 to evaluate the effect of adding different levels of productive feed Marjoram (*Origanum vulgarae* and *Rosmarinus officinalis*) on some productive of Japanese Quail birds .The study includes (450) chicks aged one day old of brown colored quail with a mean body weight 8.5g/birds. They were randomly distributed in to ten treatments each treatment contained 45 chicks with three replicates each one has 15 chick

Chick Management

The chicks were placed in locally manufactured three floors iron batteries, each of which had a cage size (75 x 70 x 45 cm) (length x width x height), with a 4 liter plastic container. The feed was placed in a cylindrical container, Air fans were used for ventilation, water and feed were available free of charge and there were no casualties during the trial period.

Nutrition

In the first three weeks, birds were fed 22.94% crude protein and 2948 kcal / kg of energy represented and a growth rate of 22- 42 days containing 21.61% crude protein and 2916 kcal / kg energy, and the feed was supplied by the Faculty of Agriculture's feed plant at Basrah University. The birds were fed from the age of 42 till the end of the experiment on the production process, which contained 20.03% crude Protein and 2904 kcal/kg representative energy (Table1).

Table 1 : Energy level and protein for Quail diets

Experiment diet composition	Metabolizable energy (ME) (kcal/kg)	Crude protein (CP) %
Starter 1-7pre	2003	**23**
Starter 8-21	**2948**	22.49
Grower 22-42	**2916**	21.61

Experiment parameters

10 empirical transactions were used in which experimental treatments were distributed as follows: 1 (control), 2. Adding 5 g of powder of marjoram leaves from 1 day to 21 days, 3. Adding 5 g of marjoram leaves powder from 22 to 42 days, 4. Adding the addition of 5 g of powdered rosemary leaves of rosemary from the age of one day to the age of 21 days, 5. Adding 5 g of powdered rosemary leaves from 22 to 42 days, 6. Adding 2.5 g of marjoram leaves powder and 2.5 g of rosemary leaves powder from the age of one day to 21 days, 7. Adding 2.5 g of rosemary leaves power and 2.5 g of Marjoram leaves powder from the age of 22 to 42 days, 8. Adding 5 g of marjoram leaves powder from one day to the end of the experiment, 9. Adding 5 g of rosemary leaves powder at the age of one day till the end of the experiment, 10. Adding of 2.5 g of Marjoram leaves powder and 2.5 g of Rosemary leaves powder from the age of one day till the end of the experiment.

Marjoram and Rosemary

Using Marjoram and Rosemary leaves powder after they were obtained from the local markets in Wasit province after they were completely dried and grinded.

Attributes studied

Dressing percentage : (3 males, 3 females) of each treatment were randomly slaughtered at the age of 42 days after they were individually weighed. The internal edible guts (both uneaten & eaten were removed, The Dressing percentage was calculated according to the following formula:

$$\text{Dressing percentage} = \frac{\text{Weight of the cleaned carcass (g) without edible viscera}}{\text{Live body weight (gm)}} \times 100$$

(Al-Fayyadh *et al.*, 2011)

The ratio of the weight of the portions of carcasses to the overall weight of the carcass: The cleaned carcasses were weighed and cut into the main cuts, which are: breast and thigh, and after weighing the relative weights were calculated according to the following formula:

The relative weight of the portions of the carcass =

$$\frac{\text{Wight of portion}}{\text{Carcass weight}} \times 100$$

(Al-Fayyadh &^ Naji, 1989)

The relative weights of eatable internal organs : The relative weights of the internal organs (liver, heart, and gizzard) were calculated according to the following formula:

$$\text{Member relative weight \%} = \frac{\text{Average member weight (gm)}}{\text{Average live body weight (gm)}} \times 100$$

(Al-Fayyad and Naji, 1989)

Relative weights of uneaten internal organs

Some of the uneaten segments (the spleen, the fabricia gland) were separated and then weighed with a sensitive scale, and their relative weight was calculated according to the following formula:

$$\text{Relative weight of uneaten inner guts} = \frac{\text{Segment weight (gm)}}{\text{Live body weight (gm)}} \times 100$$

(North, 1984)

Results and Discussion

Carcass weight

Table (2) indicates the effect of adding the two leaves of marjoram and rosemary to the productive feed on the characteristics of the carcasses of male and female Japanese quail at the age of 42 days, and from the above mentioned table, it is shown a significant effect ($p \leq 0.05$) of adding the powder of marjoram leaves in relation to the weight of the cleaned carcass, where all coefficients of addition which were significantly higher in the average weight of the carcass for both sexes compared to the control treatment have been recorded. The reason may be that marjoram powder is rich in active ingredients that in turn contribute to the absorption of nutrients entering into the components of the feed by stimulating the secretion of a group of digestive enzymes such as lipase, amylase and protease, which have a role in the analysis of fatty, protein and carbohydrate food components, (Al-Ameen, 2006).

The reason attributed to the superiority of the addition factors was due to the direct relationship between body weight and carcass weight for both sexes (Al-Fayyad and Naji, 2011), and these results were consistent with (Osman *et al.*, 2010; Al-Mashhadani, 2015).

Table No. (2) is indicatives of a significant effect of adding rosemary paper powder to the productive feed on the weight of the cleaned carcass at the age of 42 days. Average carcass weight compared to the fifth treatment (146.08 and 165.12) gm, respectively, and control treatment (142.19, 156.76). The reason behind this superiority is attributed to the fact that rosemary contains many substances that possess antibacterial and anti-oxidant properties and therefore positively reflected on the health of the gut and the preservation of the beneficial microbial community. This in turn improves the absorption and representation of nutrients and thus positively improves the general health of birds which leads to weight gain and the weight acquisition process (Cowan, 1999; Trianaphyhou *et al.*, 2001). These findings are consistent with (Lahmoud's, 2013).

Table No. (2) shows the presence of a significant effect (p) 0.05) of the mixture of adding the marjoram and rosemary leaves in the diets on the weight of the carcass, where the carcass of all mixture treatments recorded the highest rate of male and female quail compared to the control treatment, and no significant differences ($p \leq 0.05$) appeared in all mixture parameters.

Table 2 : Effect of adding powder marjoram leaf and mountain rosemary powder and their mixture in productive feed on the carcass weight and the percentage of clearance in Japanese quail females and males at the age of 42 days

Treatments	Male Carcass Weight	Female Carcass Weight	Male Dressing percentage	Female Dressing percentage
T1	142.19 ± 1.48 e	156.76 ± 5.01 c	70.24 ± 0.56 d	68.19 ± 0.55 c
T2	161.16 ± 2.50 ab	173.75 ± 3.85 ab	73.53 ± 0.01 a	71.34 ± 0.57 a
T3	151.27 ± 2.64 cd	169.46 ± 5.46 ab	72.14 ± 0.12 b	70.51 ± 0.87 ab
T4	155.26 ± 1.48 bc	172.11 ± 0.94 ab	72.17 ± 0.14 b	70.80 ± 0.73 ab
T5	146.08 ± 2.39 de	165.12 ± 1.85 bc	71.23 ± 0.06 c	69.22 ± 0.57 bc
T6	164.04 ± 1.99 a	176.97 ± 2.14 a	73.88 ± 0.01 a	71.87 ± 0.57 a
T7	160.11 ± 1.95 ab	173.34 ± 3.87 ab	73.74 ± 0.01 a	70.89 ± 0.58 ab
T8	162.81 ± 2.55 a	175.86 ± 1.08 ab	73.95 ± 0.03 a	71.43 ± 0.57 a
T9	157.17 ± 2.47 abc	174.91 ± 2.78 ab	72.35 ± 0.02 b	71.53 ± 0.39 a
T10	165.60 ± 2.60 a	180.21 ± 2.42 a	74.11 ± 0.01 a	71.96 ± 0.58 a
Level of Significance	*	*	*	*

Experimental Treatments: {T1 control treatment.} T2 Adding marjoram leaf powder of 5 g / kg fodder for the period from one day to 21 days, {T3} adding marjoram leaf powder of 5 g / kg fodder for the period from 22 days to 42 days, {T4} Adding rosemary leaf powder by 5 g / kg fodder for the period from one day to 21 days,} T5 Adding rosemary leaf powder by 5 g / kg fodder for the period from 22 days to 42 days,} T6 Adding the marjoram leaves powder by 2.5 g / Kg fodder powder and rosemary leaves by 2.5 g / kg fodder for the period from one day to 21 days {T7} Marjoram leaves powder by 2.5 g / kg fodder and rosemary powder by 2.5 g / kg fodder for the period from 22 days to 42 days}. T8 Adding the marjoram leaves powder by 5 g / kg fodder for the period from one day until the end of the experiment T9 {Adding rosemary paper powder by 5 g / kg fodder for the period from one day until the end of the experiment,} T10 {Adding the powder of rosemary leaves by 2.5 g / kg fodder and powder the rosemary leaves by 2.5 g / kg fodder for the period from one day to the end Experience}.

* Means that there were significant differences between the treatments on the level of significance (<0.05)

Values in each treatment represent (mean = standard error).

Different letters within one column indicate a significant difference

Dressing percentage

Table (2) shows the effect of adding marjoram and rosemary powder to the productive feed on the Dressing percentage to the male and female quail carcasses at the age of 42 days. This that table shows a significant effect ($p \leq 0.05$) to add powder of marjoram leaves, where all the addition factors exceeded the control treatment

Table (2) indicates a significant effect ($p \leq 0.05$) for adding rosemary leaf powder to the productive feed on Dressing percentage for the male and female quail carcasses, where the highest rate was in the fourth treatment (72.17, 70.80) g, respectively, and the ninth treatment (73.95, 71.43) %. consecutively, while the carcass of control treatment recorded the lowest rate and reached (70.24, 68.19) % respectively, due to the increase in the percentage of refinement due to the consideration of these active substances found in rosemary having a positive effect on metabolism and the weight increase of all body parts, which in turn leads To increase the percentage of the net, and these results are consistent with (Lahoud, 2013; Kadhim, 2018).

Table (2) also indicates the presence of a significant effect ($p \leq 0.05$) of the mixture of adding the marjoram and rosemary leaves in the productive feed on Dressing percentage, where the carcass of all mixture treatments recorded the highest rate of male and female quail compared to the control treatment and no significant differences appeared in all mixture treatments .

Breast Segment

Table (3) indicates the effect of adding the two leaves of marjoram and rosemary to the productive feed on the breast segment of the male and female quail sacrifices at the age of 42 days, and from a table showing the presence of ($p \leq 0.05$) significant effect of adding the marjoram leaves powder where the highest rate of treatment Eighth (83.99, 40.24)%, respectively, while the control treatment recorded the lowest rate (38.53, 39.62)%, that the segment ratios are affected by feeding as well as by the weight of the carcass

There is a direct correlation between the weight of the carcass and the weight of the main segments. As long as the nutrition was good and balanced, the weights were high for the cut and a positive correlation appeared between the carcass weight and the weight of the breast (Naji and others, 2012). These results were consistent with (Al-Mashhadani and Zinka, 2018).

Table No. (3) shows that there is a significant effect ($p \leq 0.05$) to add rosemary leaves powder to the productive feed on the breast segment of the male and female quail carcasses, where the highest rate for males was in the ninth treatment (38.98 %) compared to the control treatment that recorded the lowest rate. As for the segmental breast of quail females, the fourth and ninth treatment outperformed (40.04 and 40.07)%, respectively, over the fifth treatment and control, and it reached (39.87 and 39.62)%, respectively. These results are consistent with (Lahmoudr Jews, 2013; Jameel, 2014, Al-Hameed *et al.*, 2015)

Table No. (7) indicates the presence of a significant effect ($p \leq 0.05$) of the mixture of adding the marjoram and rosemary leaves in the productive feed on the breast segment, where the carcass of all mixture treatments recorded the highest rate of male and female quail compared to the control treatment and no significant differences appeared in all mixture treatments.

Thigh Segment

Table (3) indicates the effect of adding the two leaves of marjoram and rosemary powder to the diets on the thigh segment of the male and female quail sacrifices at the age of 42 days, and from the table showing the absence of a significant effect ($p \leq 0.05$) between the treatments of adding the marjoram leaves and the control factor in relation to For quail males As for the femoral segment of quail females, all

addition coefficients (2, 3, 8) outperformed (24.08, 23.74, 24.06) % respectively over control treatment (23.07)%. The increase in the weights of the fractional masses of the oranges of the marjoram adding to its effect may be due to its effect on increasing the growth hormone and thyroid hormone, which affects the metabolism of proteins by increasing the excretion of amino acids into muscle cells and thus increasing their concentration within the cells, which in turn increases the process of building proteins (Khodary *et al.*, 1996) The results were consistent with (Al-Mashhadani and Zinka, 2018).

Table 3 : Effect of adding marjoram leaves and powder of rosemary leaf and their mixture in diets on the relative weights of the two pieces (breast and thigh) in male and female quail at the age of 42 days

Treatments	Weight of Chest Male %	Weight of Chest Female %	Weight of Thigh Male %	Weight of Thigh Female %
T1	38.53 ± 0.13 b	39.62 ± 0.09 c	22.23 ± 0.32 b	23.07 ± 0.16 c
T2	38.94 ± 0.12 ab	40.13 ± 0.10 ab	23.23 ± 0.28 ab	24.08 ± 0.11 a
T3	38.74 ± 0.13 ab	40.02 ± 0.03 ab	22.53 ± 0.28 ab	23.74 ± 0.20 ab
T4	38.87 ± 0.13 ab	40.04 ± 0.18 ab	23.26 ± 0.59 ab	23.82 ± 0.10 a
T5	38.72 ± 0.13 ab	39.87 ± 0.03 bc	22.42 ± 0.28 ab	23.30 ± 0.17 bc
T6	39.09 ± 0.13 a	40.27 ± 0.09 a	23.32 ± 0.28 ab	24.11 ± 0.17 a
T7	39.02 ± 0.13 a	40.17 ± 0.14 ab	23.13 ± 0.28 ab	23.80 ± 0.17 a
T8	38.99 ± 0.13 a	40.24 ± 0.08 a	23.29 ± 0.29 ab	24.06 ± 0.16 a
T9	38.98 ± 0.13 a	40.07 ± 0.09 ab	22.83 ± 0.28 ab	24.01 ± 0.09 a
T10	39.12 ± 0.13 a	40.33 ± 0.09 a	23.40 ± 0.29 a	24.26 ± 0.16 a
Level of Significance	*	*	*	*

Experimental Treatments}: T1 control treatment. {,} T2 Adding marjoram leaf powder of 5 g / kg fodder for the period from one day to 21 days {, T3} adding marjoram leaf powder of 5 g / kg fodder for the period from 22 days to 42 days {, T4} Adding rosemary leaf powder by 5 g / kg fodder for the period from one day to 21 days,} T5 Adding rosemary leaf powder by 5 g / kg fodder for the period from 22 days to 42 days,} T6 Adding the marjoram leaves powder by 2.5 g / Kg fodder powder and rosemary leaves by 2.5 g / kg fodder for the period from one day to 21 days {T7} Marjoram leaves powder by 2.5 g / kg fodder and rosemary powder by 2.5 g / kg fodder for the period from 22 days to 42 days}. T8 Adding the marjoram leaves powder by 5 g / kg fodder for the period from one day until the end of the experiment T9 {Adding rosemary paper powder by 5 g / kg fodder for the period from one day until the end of the experiment,} T10 {Adding the powder of rosemary leaves by 2.5 g / kg fodder and powder the rosemary leaves by 2.5 g / kg fodder for the period from one day to the end Experience}.

* Means that there were significant differences between the treatments on the level of significance (<0.05)

Values in each treatment represent (mean = standard error).

Different letters within one column indicate a significant difference

Table (3) shows that there was no significant effect ($p \leq 0.05$) for the parameters of adding rosemary leaf powder to the productive feed on the thigh segment of the quail male sacrifices as compared to the control treatment. As for the thigh segment of quail females, all addition parameters (4, 5, 9) It reached (23.82, 23.30 and 24.01) % respectively in the control treatment (23.07)%, due to the significant increase in some ratios of of birds (thigh) carcasses added to their marjoram flocks due to the high body weight and the carcass weight, which is mainly reflected in the weights of the segments (Al-Fayadh *et al.*, 2011) The results are consistent with (Lahoud, 2013; Al-Issawi, 2013).

Table No. (3) shows the presence of a significant effect ($p \leq 0.05$) of the mixture of adding the marjoram and rosemary leaves in the productive feed on the thigh segment, where the tenth treatment for male quail recorded the highest rate and reached (23.40)% compared to the control treatment that recorded the lowest rate and reached (22.23)%, the rest of the addition treatments did not differ significantly with the control treatment. As for the femoral segmentation of female birds, a significant superiority was observed for all addition coefficients over the control treatment.

The relative weight of the liver

Table (4) indicates the effect of adding the leaves of marjoram and rosemary and their mixture to the productive feed on the relative weight of the liver of males and female Japanese quail at the age of 42 days, and from a table showing the presence of a significant effect ($p \leq 0.05$) to add the powder of marjoram leaves where all the addition factors for male and female quail on the treatment of control, due to the rise in body weight and the weight of the carcass, which is mainly reflected in the weights of segments (Al-Fayyad *et al.*, 2011)

It is clear from Table No. (2) that there is a significant effect ($p \leq 0.05$) to add the powder of rosemary leaves to the productive feed on the relative weight of the liver of male and female quail birds through the table. It was observed that all the factors of adding rosemary to the productive feed were superior to the control treatment, the significant improvement in The rate of weight gain of quail chickens fed on diets containing rosemary has a biological effect of these additives, which improve the immune system as well as their effect in increasing the weight of organs such as the liver (Benchaar *et al.*, 2008; Solorzano and Miranda, 2012). These results were consistent with (Lahmoud, 2013; Jameel, 2014)

Table No. (4) shows the presence of a significant effect ($p \leq 0.05$) of the mixture of adding the two leaves of marjoram and rosemary leaves in the diets on the relative weight of the liver, where all mixture treatments for male and female quail birds were superior to the control treatment and no significant differences appeared in all mixture treatments.

The relative weight of the heart and ziggards

Table (4) indicates the effect of adding marjoram and rosemary powder to the productive feed in the relative weight of the heart and ziggards of the Japanese male and female quail carcasses at the age of 42 days. It appears from the

table that there are no significant differences ($p \leq 0.05$) when adding the marjoram and rosemary powder And their mixture in the relative weight of the heart and ziggards, and these results were consistent with (Badiri and saber, 2016) with regard to the addition of marjoram (Jameel, 2014; Lahmoud, 2013) in relation to the Rosemary.

Table 4 : Effect of adding marjoram leaf powder and rosemary leaf powder and their mixture in productive feed on the relative weights (liver, heart, and ziggards) rates in male and female blood serum in Japanese quail at the age of 42 days

Treatments	Liver (male) %	Liver (Female) %	Ziggard (Male) %	Ziggard (Female) %	Heart (Female) %	Heart (Male) %
T1	3.04 ± 0.01 b	3.33 ± 0.02 c	2.82 ± 0.05	2.83 ± 0.06	0.91 ± 0.016	.90 ± 0.02**0**
T2	3.69 ± 0.07 a	3.91 ± 0.02 a	2.86 ± 0.06	2.84 ± 0.03	0.94 ± 0.005	0.92 ± 0.01
T3	3.59 ± 0.14 a	3.71 ± 0.09 b	2.85 ± 0.06	2.83 ± 0.03	0.93 ± 0.008	0.91 ± 0.02
T4	3.63 ± 0.07 a	3.85 ± 0.01 a	2.82 ± 0.03	2.84 ± 0.03	0.93 ± 0.008	0.92 ± 0.03
T5	3.53 ± 0.15 a	3.80 ± 0.01 ab	2.85 ± 0.06	2.83 ± 0.04	0.93 ± 0.008	0.92 ± 0.03
T6	3.81 ± 0.06 a	3.91 ± 0.01 a	2.85 ± 0.06	2.84 ± 0.03	0.94 ± 0.005	0.91 ± 0.01
T7	3.71 ± 0.06 a	3.83 ± 0.01 a	2.85 ± 0.06	2.84 ± 0.04	0.93 ± 0.014	0.91 ± 0.01
T8	3.73 ± 0.05 a	3.90 ± 0.01 a	2.85 ± 0.06	2.84 ± 0.07	0.94 ± 0.003	0.92 ± 0.01
T9	3.66 ± 0.05 a	3.87 ± 0.01 a	2.85 ± 0.06	2.84 ± 0.03	0.93 ± 0.008	0.91 ± 0.01
T10	3.80 ± 0.01 a	3.91 ± 0.01 a	2.86 ± 0.06	2.85 ± 0.05	0.94 ± 0.003	0.91 ± 0.02
Level of Significance	*	*	NS	NS	NS	NS

Experimental Treatments}: T1 control treatment. {,} T2 Adding marjoram leaf powder of 5 g / kg fodder for the period from one day to 21 days {, T3} adding marjoram leaf powder of 5 g / kg fodder for the period from 22 days to 42 days {, T4} Adding rosemary leaf powder by 5 g / kg fodder for the period from one day to 21 days,} T5 Adding rosemary leaf powder by 5 g / kg fodder for the period from 22 days to 42 days,} T6 Adding the marjoram leaves powder by 2.5 g / Kg fodder powder and rosemary leaves by 2.5 g / kg fodder for the period from one day to 21 days {T7} Marjoram leaves powder by 2.5 g / kg fodder and rosemary powder by 2.5 g / kg fodder for the period from 22 days to 42 days}. T8 Adding the marjoram leaves powder by 5 g / kg fodder for the period from one day until the end of the experiment T9 {Adding rosemary paper powder by 5 g / kg fodder for the period from one day until the end of the experiment,} T10 {Adding the powder of rosemary leaves by 2.5 g/kg fodder and powder the rosemary leaves by 2.5 g / kg fodder for the period from one day to the end Experience}.
* Means that there were significant differences between the treatments on the level of significance (<0.05)
Values in each treatment represent (mean = standard error).
Different letters within one column indicate a significant difference

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