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IMPACT OF DIETARY LAVENDER OIL ON PRODUCTIVE PERFORMANCE AND PHYSIOLOGICAL PARAMETERS IN QUAILS

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ABSTRACT

This study was designed to investigate the effects of dietary lavender oil supplementation on productive performance and health, including growth, mortality, and blood biochemical parameters of quails. A total of 90 one-day-old, unsexed quail chicks were obtained from the local market of Mosul, Iraq, weighed, and randomly distributed into three experimental groups, each with 30 chicks in three replicates (15 chicks per each). Groups comprised a control group (0 % lavender oil) and two experimental groups fed diets supplemented with 0. 2 and 0.4 % lavender oil, respectively. The results showed a notable increase ($P<0.05$) in body weight, body weight gain, and feed intake of birds fed a diet containing lavender oil. The best feed conversion ratios were recorded in lavender oil supplemented groups (0.2 and 0.4%). A notable elevation ($P\leq0.05$) in triglyceride and cholesterol levels was seen in quail administered lavender oil diets (0.2% LO and 0.4% LO) relative to the control group. The number of deaths was significantly lower ($P\leq0.05$) in the groups that received lavender oil (0.2% LO and 0.4% LO) compared to the control group during the entire study. In conclusion, adding lavender oil improved the production characteristics and some physiological characteristics of quails, so we recommend adding lavender oil to quail or broiler feed.

Keywords: *Lavender oil, Productive parameters, Physiological parameters*.

INTRODUCTION

Poultry meat is nutritious due to its elevated fat content and presence of unsaturated fatty acids. (Botsoglou 2002; Rasheed *et al.,* 2022). Fat oxidation reduced the shelf life of poultry meat (Botsoglou *et al.,* 2003). Essential oils are phytobiotics that combat pathogenic micro-organisms (Zeng *et al.,* 2015). Lavender oil possesses biological activity and a pleasant aroma. The molecular structure comprises a multicomponent amalgamation of terpenoid compounds (Carrasco *et al.,* 2015). Lavender oil is utilized in therapeutic, human aromatherapy, pharmaceutical, cosmetic, and culinary industries. (Prusinowska and Smigielski, 2014; Kirimer *et al.,* 2017). Genotype, climate, breeding strategy, and plant morphology influence the quality and quantity of lavender essential oil, which is around 3% (Prusinowska and Smigielski,

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2014). The distinctive aroma of lavender oil is both volatile and physiologically active (Carrasco *et al.,* 2015; Saadi, 2024). The composition of lavender oil includes various organic compounds, such as myrcene, alpha-pinene, and caryophyllene (hydrocarbons); linalool, alpha-terpineol, and borneol (alcohols); camphor, carvone, and eucarvone (ketones); linalyl acetate, lavandula, and geranyl (esters), neral (aldehydes); caryophyllene oxides); and eucalyptol (Lis-Balchin, 2002).

Coumarins and organic acids are present in the oil (Prusinowska and Śmigielski, 2014). Lavender oil might help animals be more productive and healthier, improve the quality of their products, and boost the activity of lymphocytes, which includes making antibodies against avian influenza and Newcastle disease virus (Mustafa and Ihsan, 2022; Ibrahim *et al.,* 2024).

Many studies have shown that adding vegetable or plant oils, especially those high in essential amino acids, to chicken feed can effectively replace antibiotics and boost production performance (Carrasco *et al.,* 2015; Giovannini *et al.,* 2016; Saleh *et al.,* 2014, 2018, and 2019; Alhayaly *et al.,* 2024b). Furthermore, research with lavender oil in both human and animal models has demonstrated its properties as an immunomodulator, anxiolytic, analgesic, and antioxidant, and it may even enhance mood (Ghelardini *et al.,* 1999; Sasannejad *et al.,* 2012; Louis; 2023).

Phenolic compounds in lavender oil exhibit antioxidants and antibacterial properties that enhance poultry growth, carcass characteristics, and meat quality (Bozkurt *et al.,* 2012; Prusinowska and Smigielski, 2014). This study assessed the impact of incorporating two doses of lavender oil in quail diets on production performance and blood biochemistry.

MATERIALS AND METHODS

This study was conducted in the poultry hall of the Animal Production Techniques Department at the Technical Agricultural College of Northern Technical University from March 6, 2024, to April 16, 2024.

Animals and maintenance

A total of 90 mixed-sex local quails, one day old (obtained from the local market of Mosul, Iraq), were divided randomly into 3 groups for 6 weeks. Each group was divided into 3 replicates, with 10 quails in each replication, according to a completely randomized design (CRD). The lavender oil was obtained from the local market of Mosul-Iraq and mixed with the food by atomizing it with the help of a spray bottle. Table (1) shows the composition of lavender oil.

Table 1: Chemical constituents of lavender oil (%) (Özbilgin *et al*., 2023)

Compounds	%
1,8-cineole	1.2
(z)-β-ocimene	0.50
3-Octanone	1.10
Hexyl acetate	0.50
Octenyl acetate	1.10
Trans-Linalool oxide (Furanoid)	1.50
Cis-Linalool oxide (Furan)	0.90
Camphor	0.60
Linalool	31.60
Linalyl acetate	32.50
α-cantanel	0.60
β-caryophyllene	5.30
Terpinen-4-ol	3.90
(z)-β-farnesene	5.10
Lavandulol	1.80
α-Terpineol	0.50
Borneol	1.00
Caryophyllene oxide	1.60
Total	91.30

The composition of the basal diet utilized in the study is shown in Table 2. The research is compartmentalized into three distinct groups. The experimental diets included various concentrations of lavender oil, at 0% (control), 0.2% and 0.4% by weight of the basal diet. The study birds were fed pellets purchased from the Al-Amjad Feed Factory in Mosul-Iraq. The feed was provided during the first three weeks using round plastic trays, after

which the chicks were weighed and distributed inside the cages, and the plastic trays were replaced with the feeders specific to the cages. The birds were raised from 1-day old until 3-weeks old on the ground in a semi-open hall, where suitable environmental conditions for growing the birds were provided. After that, the birds were randomly distributed into breed cages measuring 65×55 cm. Electric heaters were used to incubate the chicks during the early ages, and the hall was equipped with mercury thermometers to measure the temperature. The lighting was continuous for 24 hours.

Table 2: Composition of the basal diet.

Feed Ingredients	Starter (1-20 days)	Finisher (21-42 days)
Yellow Corn	38	45
Soybean Meal (46%)	38	29
wheat	14.3	16
wheat flour	7.5	6.8
Palm Oil	0.8	1.6
Lime Powder	0.8	0.8
Salt	0.3	0.3
Premix	0.3	0.5
Total	**100 %**	**100 %**
Calculated Chemical Analysis of Diets %		
Metabolizable Energy (kcal/kg)	2913	3051
Protein	23.03	19.62
Dry matter	87.63	86.74
Fiber percentage	2.68	2.51
Ash	3.30	2.81
Carbohydrates	53.82	56.68
Ether extract	2.45	3.29

Determining performance parameters

Before the trial, the quails were weighed and acclimatized to the environment and diet for three weeks. Each week, a sensitive balance with a precision of 1 g measured the weekly live weight of the birds for each replicate. Following the study, each of the replications was then weighed and divided by the number of quails, followed by the calculation of the average to ascertain the group's mean live weight. The feed provided, subtracted by the feed remaining at the week's end, determined each replication's weekly feed consumption. The feed conversion ratio can be determined by measuring the difference between the final and initial weight gain.

Serum glucose, triglycerides, and cholesterol determination

Serum glucose, triglycerides, and cholesterol levels were measured in mg/dl using a ready-made kit for serum glucose analysis manufactured by the French company Biolabo. This is an enzymatic process in which glucose undergoes oxidation. Samples were analyzed with a Japanese-manufactured spectrophotometer at a wavelength of 500 nanometers.

Serum of total protein, albumin, and globulin estimation

Total blood protein and albumin levels were assessed with a Biolabo serum protein analysis kit. This kit quantified blood plasma protein via the Biuret method (Varley *et al.,* 1980). A spectrophotometer was employed to analyze the samples at 546 nm, as the carbonyl group directly interacts with an alkaline copper solution to produce a violet-hued complex.

Serum globulin calculation

The globulin concentration was calculated from the difference between total protein and albumin levels. Globulin is quantified in grams per deciliter (g/dl).

Creatinine Determination

The measurement of blood creatinine is performed using the Jaffe method. When in a basic medium, the compound creatinine reacts with picric acid to yield a vibrant orange-red pigment. The color intensity correlates with creatinine levels and can be assessed spectrophoto-metrically.

Calcium Determination

Serum levels of glucose, triglycerides, and cholesterol were determined in mg/dL using commercially available assay kits designed for serum calcium analysis, produced by the French company Biolabo. The measurements were based on an enzymatic method involving calcium oxidation. Absorbance readings were obtained using a spectrophotometer manufactured in Japan, at a wavelength of 570 nanometers**.**

Statistical Analysis

One-way Analysis of Variance was used to analyze data from a completely randomized design (C.R.D.). Comparisons of the means were made using Duncan's test at a significance level of ($P \leq 0.05$) as per Duncan (1955). Using SAS (2000), according to the mathematical model used in the analysis:

$$Yij = u + ti + Eij$$

Were:
Yij = the observation of ij.
μ = the overall mean.
Ti = the effect of i (groups).
Eij = the experimental random error.

Impact of adding lavender oil into diets on growth performance parameters

Table 3 shows that there were no significant differences in live body weight in the third week, while weight increased in the second treatment (0.2% LO) and third treatment (0.4% LO) compared to the control treatment in the fourth, fifth, and sixth weeks, with the second treatment reaching its highest weight in the sixth week (200.66) g, The delegation attributes this to the role of lavender oil in providing energy. Table 3 shows the weekly body weight gain of quails, which was higher in the second treatment (0.2% LO) and the third treatment (0.4% LO) compared to the control treatment. The highest weight gain was between the fourth and fifth weeks, reaching (34.00, 39.00, and 36.66) g for the comparison, second, and third treatments, respectively. As for the feed conversion ratio for quail, Table 3 shows that we did not observe any significant differences during the study period. Finally, Table 3 shows that there were no significant differences in the amount of feed consumed by quails during the study period.

RESULTS

Table 3: Impact of adding lavender oil into diets on growth performance parameters

Groups	Control	0.2% LO	0.4% LO
Live body weight (g)			
Initial (Week 3)	99.00 ± 0.77 a	100.00 ± 0.57 a	100.00 ± 0.57 a
Week 4	128.66 ± 0.33 c	135.00 ± 0.57 a	132.66 ± 0.33 b
Week 5	162.66 ± 0.33 c	174.00 ± 0.57 a	169.33 ± 0.33 b
Week 6	185.00 ± 0.57 c	200.66 ± 1.20 a	194.66 ± 0.88 b
Live body weight gain (g)			
3-4 Week	29.66 ± 0.66 b	35.00 ± 1.00 a	32.66 ± 0.33 a
4-5 Week	34.00 ± 0.57 c	39.00 ± 0.57 a	36.66 ± 0.33 b
5-6 Week	22.33 ± 1.00 b	26.66 ± 0.88 a	25.33 ± 0.88 a
Feed intake (g/quail/week)			
3-4 Week	105.00 ± 10.44 a	119.00 ± 11.26 a	111.00 ± 5.29 a
4-5 Week	143.66 ± 20.41 a	139.00 ± 3.05 a	145.33 ± 5.23 a
5-6 Week	154.33 ± 11.46 a	156.33 ± 10.80 a	159.66 ± 11.28 a
Feed conversion ratio			
3-4 Week	3.54 ± 0.47 a	3.40 ± 0.68 a	3.40 ± 0.73 a
4-5 Week	3.33 ± 0.32 a	3.56 ± 0.41 a	3.96 ± 0.53 a
5-6 Week	6.90 ± 0.76 a	5.85 ± 0.85 a	6.28 ± 0.69 a

Means with different superscripts in the same row are significantly different at $p<0.05$.

Effect of lavender oil on the blood biochemical parameters

Table 4 shows the effect of lavender oil on the biochemical parameters of quails, where there were no significant differences between the treatments for each of (glucose, total protein, albumin, globulin, creatinine, calcium). While triglycerides decreased in the second (LO 0.2%) and third (LO 0.4%) treatments compared to the control sample, reaching 141.66 mg/dl for the control sample and 138.00 and 132.33 mg/dl for the second and third treatments, respectively ، this is due to lavender oil, which contains low levels of triglycerides. The same applies to cholesterol, which decreased in the second treatment (LO 0.2%) and third treatment (LO 0.4%) compared to the control sample, where the control sample reached (225.00 mg/dl) while the second and third treatments reached (215.00, 215.00 mg/dl) respectively. This is due to the high content of unsaturated fatty acids in lavender oil.

Table 4: Effect of lavender oil on the blood biochemical parameters

Groups	Control	0.2% LO	0.4% LO
Triglycerides mg/dl	141.66 ± 0.88 a	138.00 ± 0.57 b	132.33 ± 1.20 c
Cholesterol mg/dl	225.00 ± 2.88 a	215.00 ± 2.88 b	195.00 ± 2.88 c
Glucose mg/dl	301.66 ± 2.02 a	301.00 ± 1.52 a	299.33 ± 3.38 a
Total protein g/dl	5.33 ± 0.13 a	5.16 ± 0.09 a	5.36 ± 0.14 a
Albumin g/dl	2.26 ± 0.18 a	2.16 ± 0.33 a	233 ± 0.12 a
Globulin g/dl	3.06 ± 0.13 a	2.99 ± 0.26 a	3.03 ± 0.08 a
Creatinine mg/dl	0.34 ± 0.01 a	0.30 ± 0.01 a	0.33 ± 0.02 a
Calcium mg/dl	10.48 ± 0.38 a	10.55 ± 0.38 a	10.51 ± 0.39 a

Means with different superscripts in the same row are significantly different (p≤0.05).

Effect of lavender oil on quail mortality %

The data presented in Figure (1) demonstrated the effect of lavender oil on the quail mortality rates. Findings from the study showed that the groups that received lavender oil at concentrations of 0.2% and 0.4% experienced significantly lower mortality rates than the control group (P≤0.05) throughout the entire experiment.

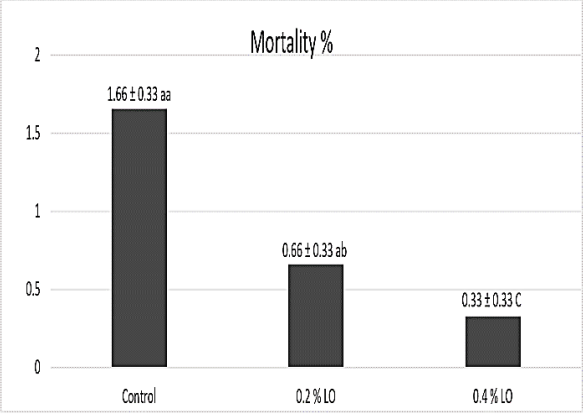

Fig. 1: Effect of L.O. on the quails' mortality **%.** Means with different superscripts in the same row are significantly different (P≤0.05).

DISCUSSION

The results indicated that quails fed on a diet containing 0.2% and 0.4% lavender oil had a significant (P<0.05) enhancement in body weight and weight gain relative to the control group during weeks 4-6. This study corroborates the findings of Salajeghe *et al.* (2018), Laghouati *et al.* (2020), and Naderi *et al.* (2021) on average live body weight and weight gain and contrasts the dissenting views of Özbilgin *et al.* (2023).

The third group, receiving 0.4% lavender oil, exhibited a significantly greater feed intake and conversion ratio compared to the second group and the control group, which received 0.2% and 0% lavender oil, respectively. These findings were corroborated with results obtained by Özbilgin *et al.* (2023) regarding feed consumption and conversion ratio, whereas Naderi *et al.* (2021) observed increased feed intake in the lavender oil groups.

The beneficial impacts of lavender oil on body weight, feed consumption, and feed conversion efficiency may elucidate this enhancement.

This study demonstrated that incorporating lavender oil into the diet at concentrations of 0.2% and 0.4% led to decreased triglyceride and cholesterol levels ($p<0.05$) compared to the control group, and the ideal level was 0.4% LO ($p<0.05$). These results agreed with those found by Naderi *et al.* (2021) and Alhayaly *et al.* (2024a), who reported that lavender oil markedly reduced serum total cholesterol and triglycerides relative to the control group ($p\leq0.05$).

Our results indicated that there was no substantial impact on glucose, total protein, albumin, globulin, creatinine, and calcium levels compared to the control group.

Our results showed that the use of lavender oil led to a reduction in mortality rates, as stated before (Bozkurt *et al.*, 2012).

CONCLUSION

In conclusion, lavender oil enhanced production and certain physiological performance in quails. This enhancement may result from lavender oil's biological functions that promote growth or its characteristics as a stimulant, phytobiotic, bioactive agent, improved digestibility, and antibacterial capabilities. Nevertheless, additional research is required for further elucidation.

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CONFLICT OF INTEREST

According to the researcher, there are no conflicts of interest related to the publication of the current investigation.

REFERENCES

Alhayaly, N.H.; Saadi, A.M. and Younis, D.T. (2024a): Use of Linseed oil and animal tallow in nutrition and its effect on blood Characteristics and meat composition in Broilers. *Egyptian Journal of Veterinary Sciences*, *55*(2), 435-442.

Alhayaly, N.H.; Saadi, M. and Th Younis, D. (2024b): Effect of Adding Flaxseed Oil and Tallow and Their Combination on The Productive Performance of Broilers. *Egyptian Journal of Veterinary Sciences*, *55*(1), 233-241.

Botsoglou, N.A.; Florou-Paneri, P. and Christaki, E. et al. (2002): Effect of dietary oregano essential oil on performance of chickens and on iron-induced lipid oxidation of breast, thigh and abdominal fat tissues. British Poultry Science 2002; 43:223-30. https://doi.org/10.1080/00071660120121436.

Botsoglou, NA.; Grıporopoulou, SH. and Botsoglou, E. et al. (2003): The effects of dietary oregano essential oil and α-tocopheryl acetate on lipid oxidation in raw and cooked turkey during refrigerated storage. Meat Science 2003; 65:1193-1200. https://doi.org/10.1016/S0309-1740(03)00029-9.

Bozkurt, M.; Küçükyılmaz, K.; Çatlı, A.U.; Özyıldız, Z.; Çınar, M.; Çabuk, and M. Çöven, F. (2012): Influences of an essential oil mixture supplementation to corn versus wheat-based practical diets on growth, organ size, intestinal mor-phology and immune response of male and female broilers. *Ital. J.*

Anim. Sci., 11(3): 290-297. https://2u.pw/n2tFCMuj

Carrasco, A.; Martinez-Gutierrez, R.; Tomas, and V. Tudela, J. (2015): Lavandula angustifolia and *Lavandula latifolia* essential oils from Spain: Aromatic profile and bioactivities. *Planta Med*., 82(1-2): 163-170. https://2u.pw/tOignHCP

Duncan, D.B. (1955): Multiple range and multiple F tests. Biometrics. 11: 1–42. http://dx.doi.org/10.2307/3001478

Enberg, RM.; Laurıdsen, C. and Jensen, SK. et al. (1996): Inclusion of oxidized vegetable oil in broiler diets; Its influence on nutrient balance and on the antioxidative status of broilers. Poultry Science Journal 1996;75(8):1003-11. https://doi.org/10.3382/ps.0751003.

Eslam Naderi., Sayed Mostafa Akbari. and Hamid Manochehri (2021): The effect of different levels of Lavender oil and bacitracin methylene disalicylate supplementation on performance, carcass traits, some blood parameters, small intestinal morphology, and microflora in Japanese quails. Brazilian Journal of Hygiene and Animal Sanity., (v.15, n. 4) p. 1 – 11. https://2u.pw/HKCR8wrV

Ghelardini, C.; Galeotti, N. and Salvatore, G. et al. (1999): Local anaesthetic activity of the essential oil of *Lavandula angustifolia*. Planta Medica 1999;65(8):700-3. https://doi.org/10.1055/s-1999-14045.

Giovannini, D.; Gismodni, A.; Basso, A.; Canuti, L.; Braglia, R.; Canini, A.; Mariani, F. and Cappelli, G. (2016): Lavandula angustifolia Mill. Essential oil exerts antibacterial and anti-inflammatory effect in macrophage mediated immune response to *Staphylococcus aureus*. *Immunol. Invest.*, 45(1): 11-28. https://2u.pw/83DBfBpY

Ibrahim, A.M.; Al-Samarai, E.A.; Taha, A.T. and Saadi, A.M. (2024): Effect of in-ovo injection of blood plasma from Iraqi local chicken on hatching traits and immune parameters of broilers hatching eggs. *Assiut Veterinary Medical Journal*, *70*(183), 267-275.

Kirimer, N.; Mokhtarzadeh, S.; Demirci, B.; Goger, F.; Khawar, K.M. and Demirci, F. (2017): Phytochemical profiling of volatile components of Lavandula angustifolia Miller propagated under in vitro conditions. Ind. Crops Prod. 96:120–125. https://2u.pw/EpQz7pwi

Lis-Balchin, M. (2002): Lavender. The genus Lavandula, 1st edition. CRC Press, London, Taylor & Francis. https://2u.pw/6ikO97P6

Louis, A. and Kloor, I.S. (2023): The Effect of Adding Different Levels of Saccharomyces Cerevisiae to the Quail Birds Feed or Drinking Water on Characteristics of the Egg Production and the Qualitative Characteristics of Local Quail Eggs. *NTU Journal of Agriculture and Veterinary Science*, *3*(2).

Mustafa, A.A. and Ihsan, T.T. (2022 a): The influence of dietary salvia and lavender powders on productive performance, some physiological parameters, and immunity of broiler under stocking density stress. Iraqi Journal of Agricultural Sciences, 53(6): 1280-1288. https://2u.pw/1IA3G9HC

Özbilgin, A.B.D.U.L.L.A.H.; Mogulkoç, M.; Kara, K.A.N.B.E.R.; Gelen, S.U.; Karataş, Ö.Z.H. A.N. and Özbek, D.Ü. (2023): Effects of lavender (Lavandula angustifolia) essential oil on fattening performance, meat quality, serum antioxidant enzymes, gut microbiota and intestinal histomorphology in Japanese quails. *Brazilian Journal of Poultry Science*, *25*(4), eRBCA-2023. http://dx.doi.org/10.1590/1806-9061-2023-1796

Prusinowska, R. and K. ´Smigielski. (2014): Composition, biological properties and therapeutic effects of lavender (*Lavandula angustifolia* L.). A Review. Herba Polonica 2:56–66. https://2u.pw/JliPDie6

Rasheed, S.; Sultan, O.N. and Younis, D.T. (2021): Effect of Acclimation and Vitamin C addition in some physiological Traits and productive performance in Local Hens Reared under hot climate. *NTU Journal of Agriculture and Veterinary Science*, *1*(1), 48-52.

Saadi, A.M. (2024): Efficacy of Rosmarinus officinalis L. and FeCl3 Extracts on Some Biochemical Parameters during Treatment of Epilepsy in Male Rats Models. *Egyptian Journal of Veterinary Sciences*, *56*(3), 493-499.

Saleh, A.A. (2014): Nigella seed oil as alternative to avilamycin antibiotic in broiler chicken diets. *S. Afr. J. Anim. Sci*., 44(3): 254-261. https://2u.pw/NJNKWqmj

Saleh, A.A.; Ahmed, E.A. and Ebeid, T.A. (2019): The impact of phytoestrogen source supplementation on repro-ductive performance, plasma profile, yolk fatty acids and antioxidative status in aged laying hens. *Reprod. Domest. Anim*., 54(6): 846-854. https://2u.pw/K6tXOpXe

Saleh, A.A.; Ebeid, T.A. and Abudabos, A.M. (2018): Effect of dietary phytogenics (herbal mixture) supplementation on growth performance, nutrient utilization, antioxidative properties and immune response in broilers. *Environ. Sci. Pollut. Res*., 25(15): 14606-14613. https://2u.pw/gZkLhW5L

Saleh, A.A.; Ijiri, D. and Ohtsuka, A. (2014): Effects of summer shield supplementation on the growth performance, nutrient utilization, and plasma lipid profiles in broiler chickens. *J. Vet. Med*., 59(11): 536-542. https://2u.pw/Dqxj44B9

Sasannejad, P.; Saeedi, M. and Shoeibi, A. et al. (2012): Effect of essential oil in the treatment of migraine headache: a placebo-controlled clinical trial. European Neurology 2012; 67(5):288-91. https://doi.org/10.1159/000335249.

Varley, H.; Growenlock, A.H. and Bell, M. (1980): Practical clinical biochemistry 5th Ed. London; William Heineman Medical Book Ltd. https://2u.pw/b6iwk7Bg

Zeng, Z.; Zhang, S.; Wang, H. and Paio, X. (2015): Essential oil and aromatic plants as feed additives in non-ruminant nutrition: a review. J. Anim. Sci. Biotechnol. 6:7–15. https://2u.pw/BL7A7NgS

تقدير أثر زيت اللافندر على الكفاءة الإنتاجية والقياسات الفسيولوجية في السمان

أمين الحمدانى ، اليس لويس يوسف ، افراح يونس جاسم ، عمر البجارى ، على محمد السعدى ، حنين موفق أحمد ، ناهد الحمدانى ، يحيى ناطق محمد ، محمد الجحيشى ، حارث المنصور

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تواجه تربية طيور السمان تحديات كبيرة في تحقيق أعلى مستويات الإنتاجية والجودة، ولذلك يتم استكشاف طرق جديدة وفعالة لتحسين الأداء الإنتاجي. ومن هذه الطرق استخدام الزيوت الطبيعية، مثل زيت اللافندر، كإضافة إلى العلف. تهدف هذه الدراسة إلى تقييم تأثير إضافة زيت اللافندر إلى العلف على الأداء الإنتاجي والفسيولوجي لطيور السمان. ويشمل ذلك دراسة النمو وتقليل معدل النفوق وتحسين الصحة العامة للطيور. تم استخدام تسعين طائر سمان خلال الدراسة لمدة 42 يومًا. تم تقسيم طيور السمان عشوائيًا إلى ثلاث مجموعات (30) سمانًا في كل مجموعة، ثلاث مكررات. تألفت المجموعات من مجموعة ضابطة (0 % من زيت اللافندر) ومجموعتين من زيت اللافندر (0.2 % من زيت اللافندر) و (0.4 % من زيت اللافندر). أظهرت نتائج الدراسة زيادة ملحوظة ($P<0.05$) في وزن الجسم ومعدل الزيادة الوزنية في وزن الجسم في طيور السمان التي تغذت على وجبات غذائية تحتوي على زيت اللافندر مقارنة بالمجموعة الضابطة. بالإضافة إلى ذلك، كان هناك تحسن كبير ($P\leq0.05$) في تناول العلف ونسبة تحويل العلف في طيور السمان التي تغذت على وجبات زيت اللافندر (0.2% و 0.4%) مقارنة بالمجموعة الضابطة خلال فترة الدراسة. فيما يتعلق بالمكونات الكيميائية للدم، كان هناك تحسن ملحوظ ($P\leq0.05$) في الدهون الثلاثية والكوليسترول في السمان الذي تم تغذيته على وجبات غذائية تحتوي على زيت اللافندر (0.2% و 0.4%) مقارنة بالمجموعة الضابطة. أظهرت النتائج أن معدل النفوق كان منخفضا بشكل ملحوظ ($P\leq0.05$) في مجموعات زيت اللافندر مقارنة بالمجموعة الضابطة طوال فترة التجربة. في الختام، أدى إضافة زيت اللافندر إلى تحسين خصائص الإنتاج وبعض الخصائص الفسيولوجية للسمان، لذا نوصي بإضافة زيت اللافندر إلى علف السمان أو الدجاج اللاحم

الكلمات المفتاحية:- زيت اللافندر، المعلمات الإنتاجية، المعلمات الفسيولوجية.