EFFECT OF USING DIETARY ANTIBIOTIC AND ANISE OIL AS FEED ADDITIVES ON PERFORMANCE AND CARCASS QUALITY OF BROILER CHICKS

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ABSTRACT

The effect of feeding broiler chicks on diets containing antibiotic and different levels of anise oil as feed additive on productive performance, carcass characteristics and economical efficiency were studied. A total of two hundred and fifty one-day old, unsexed (Ross-308) broiler chicks were randomly divided into five experimental groups. Each group was further subdivided into five replicates ten chicks per pen in complete randomized design. The birds were fed with two basal diets (starter and finisher) to form five experimental groups. The first group (A) fed on basal diet without feed additives (negative control diet), the second group (B) fed on basal diet with 0.1% added antibiotic Neomycine sulphate (positive control diet). The other groups (C), (D) and (E) were fed on basal diet supplemented with anise oil (*Pimpinella anisum*) at levels (150, 250 and 400 ppm) respectively. The experimental diets were fed for 6-weeks duration. Health of the stock and performance parameters were recorded. At the end of the experiment, the birds were slaughtered, dressed then the different parameters and economical evaluation. The results showed that, the diet with 400ppm anise oil had significantly ($P<0.05$) heaviest body weight gain, highest feed intake, best feed conversion ratio, highest dressing percentage with highest percentages of commercial cuts (breast drumstick and thigh). In addition, the inclusion of anise oil in broiler diets showed significantly ($P<0.05$) the most tender breast and thigh meat and higher liver and gizzard percentages compared to both antibiotic and control diets. The birds fed the antibiotic and control diets produced significantly ($P<0.05$) highest abdominal fat percentage. The mortality rate did not significantly ($P>0.05$) affected by the experimental treatments. The highest profitability ratio (1.85) was recorded by the diet with 400ppm anise oil in broiler diet.

Keywords: *Anise oil, Feed additives, broiler chicks.*

INTRODUCTION

Pharmaceutical antibiotics feed additives have been used for more than 50 years to enhance growth performance and to prevent diseases in livestock feeding environments. However, the current trend to eliminate the use of antibiotics as growth promoters because of the residuals in meat products (Burgat, 1999) and development of antibiotic resistant bacteria population in human (Sahin *et al*., 2002).

Supplementation of natural components in poultry rations to improve production is widely adopted in the world. Recently aromatic plants and their associated essential oils or extracts are being concerned as potentially growth promoters. Anise (*Pimpinella anisum* L.), a member of the Apiaceae family, is an annual aromatic plant. The part of the plant used, is the fruit, in particular the seed and its essential oil. Anise seed is listed by the Council of Europe as natural source of feed flavouring and in the USA it is considered as GRAS, i.e. Generally recognized as safe (Franz *et al*., 2005; Al-Beitawi *et al*., 2009). Anise has been examined for its antiparasitic and digestion stimulating properties (Cabuk *et al*., 2003), as well as its antibacterial (Tabanca *et al*., 2003), antifungal (Soliman and Badea, 2002), antipyretic (Afifi *et al*., 1994), antioxidant (Gulcin *et al*., 2003), antimicrobial (Al-Kassie., 2008), antihelmintic (Bhatti *et al*., 1996) and hypocholesterolemic (Craig, 1999) activities. Additionally, anise is reported to possess anticonvulsant (Pourgholam *et al*., 1999), antiepileptic (Janahmadi *et al*., 2008) and muscle relaxant (Albuquerque *et al*., 1995) properties. Some studies have been conducted to evaluate the use of anise seed or oil in poultry nutrition especially as growth promoters (Ciftci *et al*., 2005; Soltan *et al*., 2008; Al-Beitawi *et al*., 2009).

The objective of this study was intended to gain more information about the effect of using dietary antibiotic and anise oil as feed additive on productive performance and carcass quality of broiler chicks.

MATERIALS and METHODS

A total of two hundred and fifty, one-day old unsexed (Ross-308) broiler chicks were randomly divided into 5 experimental groups of 50 chicks per group. Each group was further subdivided into 5 replicates at the rate 10 chicks per each. The chicks of each replicate were housed in a pen (1 square meter) in an open-sided deep litter house. Anise oil (*Pimpinella anisum*) purchased from local market and then added to experimental diets. Then five experimental groups were used. The first group (A) fed on basal diet without feed additives (negative control diet), the second group (B) fed on basal diet with 0.1% added antibiotic Neomycine sulphate (positive control diet), the rest groups (C), (D) and (E) were fed on basal diet supplemented with anise oil at levels (150, 250 and 400 ppm) respectively. All the experimental diets were formulated to meet the nutrient requirements of broiler chicks according to (NRC, 1994) and composed from the local feed ingredients commonly used for poultry feeding in the Sudan. The experimental diets were fed for 6-weeks duration where two phases of feeding program involved in supplying starter (1-21 days of age) and finisher (22-42 days of age). Calculated analysis of the experimental basal diets was done according to feedstuff analysis outlined by Ellis (1981), while determined chemical analysis was conducted by the AOAC (1995) methods. Formulation and proximate analysis and calculated analysis for the experimental basal diets are shown in Tables (1 and 2) respectively, while chemical composition of the super concentrate used in the basal diets is shown in Table (3). Feed and water were offered ad-libitum. The light was continuous throughout the experimental period. The performance of the experimental birds in term of feed intake, live weight gain and feed conversion ratio were recorded weekly. Health of the experimental stock and mortality rate were closely observed and recorded daily. At the end of 6^{th} week the experimental birds were individually weighed after overnight fast (except for water) then slaughtered without stunning. They were then scalded, manually plucked, washed and allowed to drain on wooden tables. Evisceration was performed by a ventral cut and visceral as well as thoracic organs were removed. After evisceration internal organs (heart, liver and gizzard) were removed, weighed individually and expressed as percentage of slaughtered weight. Eviscerated carcasses were weighed and then chilled in a refrigerator for 24 hours at 4^{o}C. Cold carcasses were recorded.

Table 1: Formulation and proximate analysis of the experimental basal diets (percent as fed).

	Ingredients (%)	Starter diet	Finisher diet
A:	**Formulation:**		
	Grain sorghum	51.00	63.00
	Wheat bran	6.00	5.00
	Groundnut meal	15.00	13.00
	Sesame meal	16.00	7.00
	Super concentrate	5.00	5.00
	Oyster shell	2.75	2.75
	Common salt	0.25	0.25
	Vegetable oil (corn)	4.00	4.00
	Total	100	100
B:	**Determined analysis**		
	Dry matter	96.40	94.00
	Crude protein (N% x 6.25)	23.00	21.69
	Ether extract	6.73	6.80
	Crude fibre	6.20	5.00
	Ash	9.94	7.86
	Nitrogen free-extract	50.53	53.65

Table 2: Calculated analysis of the experimental diets dry matter basis (DM).

Item	Starter diet	Finisher diet
Metabolizable energy (Kcal/kg)	3051	3138
Crude fat	9.86	8.33
Crude protein	23.12	20.09
Lysine	1.14	1.05
Methionine	0.52	0.43
Cystine	0.33	0.27
Methionine + cystine	0.87	0.71
Calcium	1.10	0.93
Available phosphorus	0.61	0.54
Caloric-protein ratio	132	156
ME Kcal/kg: protein %		

Metabolizable energy: calculated according to Ellis (1981)

Table 3: Chemical composition of the super concentrate used in the basal diets formulation (Hendrix broiler concentrate).

Metabolizable energy	1900 (Kcal/kg)
Crude protein	32.00%
Lysine	11.00%
Methionine	2.80%
Methionine + cystine	2.25%
Calcium	8.00%
Available phosphorus	5.00%

All the slaughtered birds were used for dissection. The breast, thigh and drumstick of the left side of each carcass were dislocated, weighed and expressed as percentage of cold carcass weight. Taste panel was done for broiler's breast and thigh meat after wrapped individually in aluminum foil, and roasted in an electric oven at 175^{o}C for 90 minutes. Ten taste panelists were used to score colour, flavour, tenderness and juiciness of the meat, according to the guidelines of Cross *et al*. (1978). Statistical analyses were made by analysis of variance for a completely randomized design, according to Steel and Torrie (1986).

RESULTS

The effect of feeding different levels of anise oil on broiler's performance is shown in Table (4). Final body weight, body weight gain, total feed intake and feed conversion ratio were significantly ($P<0.05$) affected by the addition of anise oil to broiler diets. The highest body weight and body weight gain were significantly ($P<0.05$) recorded by the diet with 400 ppm anise oil compared to both positive and negative control diets. The diets with 150 and 250 ppm recorded significantly ($P<0.05$) lower body weight and body weight gain compared to positive control diet.

The treatment effect on the feed intake was significantly ($P<0.05$) affected by the inclusion of anise oil in broiler diets. The diet with 400ppm showed significantly ($P<0.05$) the highest feed intake compared to other experimental diets. The diets with 150 and 250 ppm anise oil consumed significantly ($P<0.05$) lowest feed intake compared to positive control diet. The diet with 400ppm anise oil recorded significantly ($P<0.05$) better feed conversion ratio compared to other experimental diets. The differences between the diets with 150 and 250 ppm anise oil and the positive control diet were insignificant ($P>0.05$). All the chicks were apparently healthy and the mortality was not significantly affected by the experimental treatments.

Table 4: The effect of feeding different level of anise oil on performance of broiler chicks (1-42 days).

Parameter	A	B	C	D	E	SEM
Initial body weight (g/chick)	45.10	45.32	45.21	45.20	45.32	-
Final body weight (g/chick)	1742.00^{d}	1982.33^{b}	1873.00^{c}	1891.55^{c}	2150.30^{a}	9.85
Body weigh gain (g/chick)	1696.90^{d}	1937.01^{b}	1827.79^{c}	1846.35^{c}	2104.98^{a}	9.72
Total feed intake (g/chick)	3478.64^{d}	3719.06^{b}	3491.07^{c}	3544.99^{c}	3852.11^{a}	8.93
Feed conversion ratio	2.05^{a}	1.92^{b}	1.91^{b}	1.92^{b}	1.83^{c}	0.007
Mortality %	0.001	0.00	0.00	0.00	0.00	0.001^{NS}

A: Negative control diet (without feed additives)
B: Positive control diet (0.1% antibiotic Neomycine sulphate)
C: 150ppm anise oil
D: 250ppm anise oil
E: 400ppm anise oil
N.S. Not statistically significant (P>0.05)
SEM: Standard error of the means
Means on the same raw with the same superscripts are not significantly different (P>0.05).

Table (5) shows the effect of feeding different levels of anise oil on carcass characteristic of the broilers. All the measured parameters were significantly (P<0.05) affected by the experimental treatments. The diet with 400ppm anise oil gave significantly (P<0.05) highest hot and cold dressing percentages and highest commercial cuts percentages (breast, drumstick and thigh) compared to other experimental diets. Also the differences between diets 150 and 250 ppm anise oil and positive control diet were insignificant (P>0.05) for all these values.

Table 5: Means values for the dressing carcass percentages and commercial cut of broiler carcasses.

Parameter	A	B	C	D	E	SEM
Hot dressing percentage	67.50^{c}	68.82^{b}	68.73^{b}	68.82^{b}	69.13^{a}	0.17
Cold dressing percentage	67.01^{c}	68.80^{b}	68.52^{b}	68.72^{b}	69.83^{a}	1.13
Breast as % of old carcass	24.62^{c}	25.75^{b}	25.03^{b}	25.52^{b}	26.50^{a}	1.20
Drumstick as % of cold carcass	14.82^{c}	15.63^{b}	15.69^{b}	15.72^{b}	16.25^{a}	0.2
Thigh as % of cold carcass	15.01^{c}	15.80^{b}	15.83^{b}	15.92^{b}	16.82^{a}	0.22

Table (6) shows the effect of feeding different levels of anise oil on abdominal fat and giblets (liver, heart and gizzard) as percentage of body weight. All the measured parameters were significant (P<0.05) except the heart percentage. The addition of anise oil to broiler diets significantly decreased the abdominal fat percentage and increased the liver and gizzard percentages compared to both positive and negative control diets.

Table 6: Body weight and organ proportions of broiler chickens.

Parameter	A	B	C		D	SEM
Final body weight (g/chick)	1742.00^{D}	1982.33^{b}	1873.00^{c}	18.91.55^{c}	2150.30^{a}	9.85
Abdominal fat as % of body weight	2.42^{a}	2.41^{a}	1.92^{b}	1.92^{b}	1.91^{b}	0.017
Liver as % of body weight	2.10^{b}	2.11^{b}	2.50^{a}	2.50^{a}	2.63^{a}	0.11
Heart as % of body weight	0.5	0.5	0.5	0.5	0.5	0.013^{NS}
Gizzard as % of body weight	2.00^{b}	2.05^{b}	2.52^{a}	2.55^{a}	2.63^{a}	0.12

Table (7) shows the effect of dietary treatment on subjective scores for breast and thigh of boiler meat. All the values (juiciness, flavour and colour) did not differ significantly (P>0.05) among the dietary treatments except the tenderness of the breast and thigh meat of broiler. The addition of anise oil to broiler diets showed significantly (P<0.05) the highest tenderness score for both the breast and the thigh meat compared to both positive and negative control diets.

Table 7: Subjective scores for the breast and thigh of broiler meat.

Parameters	A	B	C	D	E	SEM
Tenderness						
Thigh	5.61^{b}	5.62^{b}	6.72^{a}	6.75^{a}	6.85^{a}	0.03
Breast	5.50^{b}	5.53^{b}	6.62^{a}	6.65^{a}	6.77^{a}	1.02
Juiciness						
Thigh	5.53	5.53	5.62	5.50	5.70	0.03^{NS}
Breast	5.42	5.45	5.59	5.48	5.63	0.02^{NS}
Flavour						
Thigh	5.32	5.50	5.46	5.39	5.40	0.02^{NS}
Breast	5.46	5.37	5.39	5.45	5.51	0.01^{NS}
Colour						
Thigh	5.28	5.23	5.21	5.32	5.41	0.03^{NS}
Breast	5.31	5.37	5.22	5.41	5.50	0.02^{NS}

Table (8) shows calculation of total cost, revenues and net profit for the experimental groups. The results obtained from the economic study indicated that, group (E) with 400 ppm anise oil showed the highest profitability ratio (1.85) compared to the negative control group.

Table 8: Total cost, revenues and net profit of broiler chicks fed on different levels of anise oil.

Item		A	B	C	D	E
Cost(SDG)						
	Chick purchase	6.00	6.00	6.00	6.00	6.00
	Management	4.00	4.00	4.00	4.00	4.00
	Feed	11.70	12.70	11.72	11.79	12.00
	Total cost(SDG)	21.70	22.70	21.72	21.79	22.00
Revenues						
	Average eviscerated carcass weight (kg)	1.17	1.36	1.29	1.30	1.49
	Price (SDG/kg)	23.00	23.00	23.00	23.00	23.00
	Total revenues	26.91	31.28	29.67	29.90	34.27
Net profit						
	Total revenues	26.91	31.28	29.67	29.90	34.27
	Total cost	21.70	22.70	21.72	21.79	22.00
	Net profit/bird	5.21	8.58	7.95	8.11	12.27
	Net profit/kg meat	4.45	6.30	6.16	6.24	8.23
	Profitability ratio/kg meat	1.00	1.41	1.38	1.40	1.85

DISCUSSION

The effect of feeding different levels of anise oil on the productive performance of broiler chicks is shown in Table (4). The highest body weight and body weight gain were significantly (P<0.05) recorded by the diet with 400ppm anise oil compared to both positive and negative control diets. The improvement in body weight gain may be related to active ingredient found in the anise oil such as anethol which has stimulating effect on digestive system and increases production of digestive enzymes that improved utilization of digestive products through enhanced liver function (Cabuk *et al*., 2003; Hernandez *et al*., 2004 and Osman *et al*., 2005). This result agreed with the findings of Abu-Egla *et al.* (2001); El-Ghammary *et al*. (2002) and Hassan *et al.* (2004) who found that, the increase in live body weight and body weight gain may be due to the different active ingredients, particularly anethol and

eugenol in anise which have digestive stimulating effects. Similarly, Simsek *et al*. (2007) stated that, the improved body weight in the diet supplemented with 400ppm of anise oil could be due to positive effects of anise oil on digestive system. In addition, Hernandez *et al*. (2004) reported that supplementation of essential oil extract from oregano, cinnamon and pepper improved apparent whole tract and ileac digestibility of the nutrients in broilers. The result was in line with the findings of Jang *et al*. (2004) who showed that supplementation of a blend of commercial essential oils combined with lactic acid increased trypsin and pancreatic amylase activity in broiler. The results coincided with the finding of Ertas *et al*. (2005) reported that the addition of essential oils mix (oregano, clove and anise) in the diet improved body weight of broilers. In addition, positive effects of dietary essential oils on bodyweight were observed by Alcicek *et al*. (2003) and Denli *et al*. (2004). Moreover, Jamroz *et al*. (2003) found that the inclusion of 150 or 300 mg/kg of a plant extract containing capsaicin, carvacrol and cinnamicaldehyde in the diet improved body weight by 5.4 and 8.1%, respectively. In contrast, Botsoglou *et al*. (2004) reported that the supplementation of essential oils to a diet had no beneficial effect on body weight. Similar result was observed by Jamroz *et al*. (2005) who noted that a plant extract included in a broiler diet did not improve the body weight. The diets with 150 and 250 ppm anise oil showed significantly ($P<0.05$) lower body weight and body weight gain compared to the positive control diet.

The diet with 400 ppm anise oil showed significantly ($P<0.05$) the highest feed intake compared to the other experimental diets. This improvement in feed intake may be attributed to the appetizing effect of active ingredient, such as anethol in anise (Cabuk *et al*., 2003). Similar result was obtained by Ertas *et al*. (2005) who reported that the addition of essential oils mix (oregano, clove and anise) in the diet improved feed intake by broilers. In contrast, Lee *et al*. (2003); Botsoglou *et al*. (2004) and Hernandez *et al*. (2004) reported that addition of plant extracts or essential oils to the diet had no beneficial effect on feed intake.

The diet with 400ppm anise oil produced significantly ($P<0.05$) better feed conversion ratio compared to the other experimental diets, and the difference between the diets with 150 and 250 ppm anise oil and the positive control diet were insignificant ($P>0.05$). The improvement in feed conversion ratio in the diet with 400ppm could be related to the digestive stimulating effect of anise (Cabuk *et al*., 2003), particularly the digestion of protein, fat and cellulose (Jamroz and Kamel, 2002). In addition, several researchers reported that anise oil significantly improved the feed conversion ratio of broiler chickens (Ather, 2000; Williams and Losa, 2001; Giannenas *et al*., 2003; Ciftci *et al*., 2005). The positive effect of anise oil in broiler diets on the final body weight, body weight gain and feed conversion ratio can be explained by the fact that, anise have medical properties such as antimicrobial effect (Tabanca *et al*., 2003) and antifungal effect (Soliman and Badea, 2002) which improved the over all productive performance of broiler chicks. In contrast, Lee *et al*. (2003); Botsoglou *et al*. (2004) and Hernandez *et al*. (2004) reported that addition of plant extracts or essential oils to the diet had no beneficial effect on feed conversion ration.

As shown in Table (5) the hot and cold dressing percentages were significantly ($P<0.05$) improved by the addition of anise oil to the diets of broiler compared to negative control diet. The highest hot and cold dressing percentages were significantly ($P<0.05$) recorded by the diet with 400ppm anise oil. These results may be attributed to the coincided effect of these levels in feed intake and weight gain. These results agreed with Simsek *et al*. (2007) who found that, there were significantly ($P<0.05$) improvement in hot and cold carcass yield for the diet that supplemented with 400 ppm of anise oil compared to control diet. Similarly, Hamodi and Al-Khalani (2011) mentioned that, the dressing of the diet that contain 6 kg/ton anise seeds was significantly ($P<0.05$) increased compared to control diet. In addition, Alcicek *et al*. (2003) reported that, adding essential oil (Herbomix ^{TM}) in the ration had positive effects on the carcass yield in broilers.

The percentages of commercial cuts (breast, drumstick and thigh) showed significantly ($P<0.05$) improvement with the inclusion of anise oil in broiler diets compared to negative control diet. The highest commercial cuts percentages (breast, drumstick and thigh) were significantly ($P<0.05$) observed by the diet with 400 ppm anise oil. This improvement may be resulted from positive effects of the anise oil on carcass performance. These results partially agreed with Hamodi and al-Khalani (2011) who found significant ($P<0.05$) increase in carcass cuts (breast and thigh) when broiler diet was supplemented with anise seed or karkade flower.

As shown in Table (6) the inclusion of anise oil in broiler diets significantly ($P<0.05$) affected the percentages of abdominal fat and giblets (liver and gizzard) except the heart percentage. The diets supplemented with anise oil significantly ($P<0.05$) showed the highest liver and gizzard percentages compared to both positive and negative control diets. This may be related to the effects of anethol on the digestive system and liver metabolism. Similar results were recorded by Simsek *et al*. (2007) who found that, there were significant ($P<0.05$) improvement in liver and gizzard percentages for the diets that supplemented with anise oil compared to control diet.

Moreover, Hamodi and Al-Khalani (2011) stated that, addition of anise seeds (6 kg/ton feed) significantly (P<0.05) increased the liver percentage of broiler chickens. On the other hand, inclusion of anise oil in broiler diets significantly (P<0.05) decreased the abdominal fat percentage compared to both negative and positive control diets. Similar result was obtained by Hamodi and el-Khalani (2011) who reported that, supplementing anise seeds at level 6 kg/ton feed significantly (P<0.05) decreased the abdominal fat percentage compared to control group. Also, Ashan (2011) found that, the lowest percentage of abdominal fat was recorded by the diet supplemented by 200 ppm anise oil compared to other experimental diet (control, 200 ppm senna and 200 pm mixture of senna and anise oils).

As shown in Table (7) no significant differences were observed between all treatments groups in subjective meat quality attributed (colour, flavour and juiciness) except for tenderness of the breast and thigh meat, all scores being at above moderate values. The addition of anise oil to broiler diets recorded significantly (P<0.05) the most tender breast and thigh meat compared to both negative and positive control diets. This effect could be explained by the sedative and aromatic characteristics of the active items of anise oil (Cakmakci and Celik, 2004). One of the most active item anethol has sedative effects which reduces the movements of animals, thus more body weight gain and tenderness of meat for birds fed on anise oil that may result from the limited activity of broilers. As shown in Table (8), the economic evaluation of the experimental diets indicated that the diet supplemented with 400 ppm anise oil showed the highest profitability ratio (1.8). This might be related to the higher return of the weight gains recorded by this group of chicks compared to other experimental groups.

In conclusion, the supplementation of anise oil to broiler diet at 400 ppm enhanced growth, reproductive performance and organoletpic characteristics of meat. This supplement can completely replace antibiotic Neomycine sulphate without having any adverse effect on performance and carcass quality of broiler chicks.

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أثر استخدام المضاد الحيوي وزيت اليانسون كإضافة علفية على الأداء وخصائص الذبيح في الدجاج الاحم

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أجريت هذه التجربة لدراسة أثر تغذية الدجاج اللاحم على المضاد الحيوي (Neomycine sulphate) ومستويات مختلفة من زيت اليانسون (Pimpinella anisum L) كإضافة علفية طبيعية علي الأداء الإنتاجي وخصائص الذبيحة بالإضافة إلي العائد الاقتصادي. تم استخدام النظام العشوائي الكامل في تصميم هذه التجربة ، حيث أستخدم (٢٥٠) كتكوت لاحم غير مجنس من سلالة الروس ٣٠٨، قسمت عشوئياً إلي عدد خمس مجموعات تجريبية متساوية تقريبا في الوزن الابتدائي ، كل مجموعة ضمت خمسة مكررات ، بكل مكرر عشرة كتاكيت. تمت تغذية المجموعة الأولى (A) علي عليقة أساسية بدون أي إضافة (عليقة قياسية سالبة). المجموعة الثانية (B) غذيت على عليقة أساسية مضاف إليها المضاد الحيوي (Neomycine sulphate) بمعدل 0.1 %كمحفز للنمو (عليقة قياسية موجبة). أما المجموعات الأخرى (C),(D),(E) فقد تمت تغذيتها علي العليقة الأساسية مضاف إليها زيت اليانسون كمحفز طبيعي للنمو بنسب تصاعدية (400ppm,250 ppm,150 ppm) علي التوالي. تم تكوين العليقة الاساسية وفقآ للإحتياجات الغذائية للدجاج اللاحم الصادرة من (NRC, 1994). وقد تمت التغذية على العلائق التجريبية لمدة ستة اسابيع والمراقبة اللصيقة لصحة القطيع وتسجيل قياسات الأداء الإنتاجي ثم الذبح بنهاية فترة التجربه وتسجيل قيم الذبيحة ومن ثم التقييم الإقتصادي. أثبتت النتائج المتحصل عليها أن مجموعة التى غذيت على عليقه بها 400ppm من زيت اليانسون قد تحصلت معنويا علي أفضل المعدلات بالنسبة لقيم الوزن المكتسب ، إستهلاك العلف ، معدل الكفاءة التحويلية للغذاء ، نسبة التصافي ، نسبة القطع التجارية (الصدر الفخذ والساق) ، ونسبة الكبد والقانصة بالإضافة إلى أعلى طراوة للحم الصدر والفخذ. أوضحت النتائج بأن المجموعة القياسية السالبة والمجموعة القياسية الموجبة قد تحصلتا معنويا ($p<0.05$) علي أعلى معدل لقيمة دهن الأحشاء. وأشارت النتائج أن إضافة مستويات مختلفة من زيت اليانسون إلى علائق الدجاج اللاحم لم تظهر أي تأثير معنوي ($p>0.05$) علي معدل النفوق. أظهر التقييم الإقتصادي ربحية نسبية (1.85) لمجموعة 400ppm زيت اليانسون حيث كانت الأعلى بين المجموعات المختبرة. وقد خلصت نتائج هذة التجربة الى أنه يمكن استخدام زيت اليانسون بمستوى 400ppm كإضافة علفية طبيعية إلى علائق الدجاج اللاحم بديلاً للمضاد الحيوي (Neomycine sulphate) بدون أي أثر ضار.