

علاقة اضافة الأوكسى تتراسيكلين الى علائق الكناييت النامية بجودة الذبيحة

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الملخص

أجريت التجربة على كناييت الفيومي والروود ايلاند الأحمر لمعرفة تأثير اضافة المضاد الحيوى أوكسى تتراسيكلين (بمعدل ٥٠ جزء في المليون) على جودة الذبيحة عند عمر ١٦ أسبوعا . وقد توصل البحث الى النتائج التالية :

(١) تحسنت مقاييس الجسم (طول عظام القص والساق والفخذ) وبالتالى درجة امتلاء الذبيحة باللحم تحسنا ملموسا في كناييت الروود ايلاند ، بينما لم تستجب كناييت الفيومي في هذه المقاييس بأضافة المضاد الحيوى أوكسى تتراسيكلين الى العلائق .

(٢) أدى استخدام المضاد الحيوى أوكسى تتراسيكلين الى زيادة فى نسبة الأجزاء المأكولة من الذبيحة مثل عضلات الصدر وعضلات الأرجل ولم يكن للمضاد تأثير على نسبة بعض الأجزاء غير المأكولة مثل الدم والرأس والريش والعظام ، ولكنه أدى الى انخفاض نسبة الأحياء المأكولة (الحوائج) .

(٣) أدت المعاملة الى زيادة معنوية فى نسبة التصافى والتشافى ولكنها لم تؤثر فى النسبة المثوية للذبيحة بعد التنظيف (New york dressed Carcass) وبصفة عامة فقد تحسنت جودة الدبائح بأستخدام المضاد الحيوى أوكسى تتراسيكلين وكانت كناييت الروود ايلاند أكثر استجابة من كناييت الفيومي .

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CARCASS QUALITY OF THE FAYOUMI AND RHODE ISLAND RED CHICKS IN RELATION TO ANTIBIOTICS SUPPLEMENTATION

(4 Tables)

By

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SUMMARY

An experiment was conducted with growing Fayoumi and Rhode Island Red chicks to study the influence of oxytetracycline supplementation (50 ppm) on their carcass quality at 16 weeks of age. It was reached to the following results :

1. The degree of fleshing in R.I.R., as determined by carcass measurements, can be improved by oxytetracycline supplementation. This effect was not pronounced in the Fayoumi.
2. The use of oxytetracycline caused an increase in most of edible parts such as breast muscles and leg muscles. However, it seems that it had no effect on some inedible parts such as blood, head, feather and bone percentages. In the same time, it was associated with a decrease in the giblets percentage.
3. The treatment significantly increased the dressing percentage and the total edible meat percentage of the chicks at 16 weeks of age. However, the values of the New York dressed carcass were not affected.

INTRODUCTION

The inclusion of antibiotic to the broiler ration has become a common practice during the last decades. Its effects on growth, feed efficiency and viability was studied extensively, however that concerned with meat quality has not yet received as much attention. Moreover, the data obtained on this subject are contradictory. *TARVER et al.*, (1954) found no change in the dressing loss or fleshing of chickens by feeding penicillin. Also *FRANTI et al.*, (1973) stated that the high levels of oxytetracycline or zinc bacitracin decreased the leg muscle percentage. The latter antibiotic depressed the relative growth of the deep pectoral muscle. However, *CUTHBERTSON and GLUSSOR* (1954) reported that penicillin increased the yield of table poultry

by 11 percent at 15 weeks of age. *FRANTI et al.*, (1972) reported that the high level of bacitracin or oxytetracycline caused an increase in the gizzard weight and heart weight. Besides, *SAXENA et al.*, (1953) found an increase in the subcutaneous fat of turkey by feeding penicillin. Also, the palatability, tenderness and texture scores of light meat of White Leghorn broilers were improved by aureomycin supplementaiton (*ODLAND et al.*, 1955).

Consequently, the present study was aimed to determine to what extent the medium level of oxytetracycline (50 p.p.m.) as recommended by *EWING*, (1963) could affect carcass measurement, carcass parts and dressing values of growing Fayoumi and Rhode Island Red (R.I.R.) chicks.

MATERIAL AND METHODS

Eight hundred one-day old Fayoumi and Rhode Island Red chicks were put under study. Chicks of each breed were divided into two equal groups (of 200 each). The first group (control) was fed a basal diet having 2640 Kcal metabolizable energy per kilogram, and 16.5 percent crude protein. However, the second one (treated group) was fed the basal diet supplemented with 50 ppm of oxytetracycline. The brooding period extended to 8 weeks of age, there after, the sexes were separated and reared on floor pens under uniform conditions.

At 16 weeks of age, forty eight birds, representing 12 birds from each treatment (6 males and 6 females) were randomly chosen for slaughtering. The birds were starved about 12 hours, weighed, slaughtered, allowed to bleed freely for about 5 minutes and then weighed again. The sacrificed birds were dry plucked and the New York dressed carcass was calculated (the percent ratio of the weight after bleeding and plucking to the live body weight). The head and shanks were removed and then the carcass was eviscerated. Evisceration was made by a posterior ventral cut with the removal of different viscera. The eviscerated weight was calculated as a percentage of the live body weight. The weight of giblets (empty gizzard, heart and liver) was also recorded.

After evisceration, 32 carcasses were taken for different measurements. The depth of the breast, keel and tibia length were measured. The pectoralis muscles (pectoralis minor and pectoralis major) and the leg muscles (thigh and drumstick muscles) were separated and weighed. Bones, muscles and total edible meat were calculated as percentages of the live body weight.

The statistical analysis was done according to the methods recommended by *SNEDECOR* and *COCHRAN* (1967).

RESULTS AND DISCUSSION

A—Carcass measurements :

It can be observed from Table 1 that the treated R.I.R. chicks had deeper breast, longer tibia and longer femur than the untreated groups. However the treated Fayoumi groups were nearly the same or slightly higher in their

carcass measurements than the untreated groups. This comparison means that, the R.I.R. had relatively higher response to the antibiotics supplementation than the Fayoumi. The higher response of R.I.R. could be explained through the effect of antibiotics supplementation on growth, since these measurements are highly correlated with body weight (AMER *et al*, 1965)

Analysis of variance (Table 3) shows that the response of the length of tibia and depth of breast to antibiotic supplementation was more pronounced in the R.I.R. than in the Fayoumi. However, this response in the Femur length was nearly the same in the R.I.R. and Fayoumi chicks

B—Carcass parts :

From Tables 2 and 4 it could be observed that there was no significant difference in blood percentage which could be attributed to treatment. However, the males of both R.I.R. and Fayoumi chicks had higher averages of blood percentage than the females. These findings are in agreement with those reported by BAKER *et al* (1950) and RIZK (1958)

With concern to the effect of oxytetracycline supplementation on the feather percentage, it was detected that the treated R.I.R. chicks had lower feather percentages than the untreated chicks. This may be due to the higher body weight of the treated chicks, since this trend was not observed in the Fayoumi because of the lower differences in body weight between the treated and untreated birds. However, the differences between treatments were not statistically significant.

The treated R.I.R. chicks had lower percentage of giblets than the untreated ones, while in the Fayoumi both treated and untreated birds had nearly equal values. This is in disagreement with the results of FRANTI *et al* (1972) who reported that, the average weight of heart, gizzard and liver increased by feeding high level of antibiotics. The decrease of giblets percentage of the treated R.I.R. may be due to the relatively more increase in the body weight. Analysis of variance of giblets percentages (Table 4) shows that, the differences due to treatment and breed were highly significant, while those due to sex and different kinds of interactions were not significant.

As for the head percentage, it was observed that the differences due to treatment were not significant, while those due to sex and breed were highly significant (Tables 2 and 4)

The breast muscles percentage is of considerable importance in determining breast fleshing, and hence its yield and quality. The percentages of breast muscles (including pectoralis major and pectoralis minor) presented in Table 2 show that the treated groups had higher values of breast muscle percentages than the untreated groups except in case of the Fayoumi males, where the treated and untreated males were nearly the same (9.44 and 9.65 percent, respectively). This significant increase was associated with improvement in body growth and conformation. The females had higher percentages of breast muscles than males. This means that the females were superior to males in breast fleshing. The same finding was reported by *El-GAMMAL* (1969)

It was detected that the leg muscles percentage of R.I.R. (including femoral and tibiotarsal muscles) were higher than those of the untreated ones (Table 2). However, the response of leg muscle growth in Fayoumi to antibiotic supplementation was not pronounced. This indicates that the degree of increase in leg muscles of the R.I.R. was higher than that of body weight, while it was less or nearly the same in the Fayoumi. *FRANTI et al.*, (1973) reported that high levels of antibiotics were associated with lower percentages of leg muscles. However, analysis of variance (Table 3) shows that the difference between treatments was not significant, but the interaction between treatment and breed was highly significant.

Besides, the bone percentage seemed not to be affected by oxytetracycline supplementation (Table 3),

C. Dressing values:

The values of New York dressed carcass (the weight of the carcass after bleeding and defeathering), dressing percentage (eviscerated weight including giblets) and total edible meat (boneless eviscerated carcass including giblets) are presented in Table 2.

The treated groups of R.I.R. had higher percentage of New York dressed carcass than the untreated groups. The contrary was found in the case of Fayoumi chicks. The differences in the New York dressed carcass due to treatment sex and breed were not significant (Table 4).

With concern to the dressing percentage, it was detected that the addition of oxytetracycline to chick ration of the R.I.R. increased the dressing percentage about 3 percent (from 67.3 to 70.3 percent in males and from 68.1 to 71.4 percent in females). The same trend was noticed in the fayoumi females (from 68.4 to 72.0 percent). However in the Fayoumi males the increase was not pronounced (from 69.6 to 69.8 percent). The increase of dressing percentage in treated groups could be explained through the effect of oxytetracycline supplementation on growth of the whole organism.

Looking to Table 2, it is noticed that the treated males and females of the Rhode Island Red had higher percentage of total edible meat than the untreated ones (57.9 and 55.3 for males and 57.9 and 55.3 for females, respectively). The same was true in the Fayoumi females (58.2 and 53.8 in treated and untreated chicks, respectively). In the Fayoumi males, the total edible meat percentage was nearly the same in both treated and untreated chicks. However, the differences due to treatment in the total edible meat percentages were highly significant (Table 3).

TABLE 1. Effect of antibiotic supplementation on carass measurements of the R.I.R. and Fayoumi chicks at 16 weeks of age.

Measurements	Untreated				Treated			
	R.I.R.		Fayoumi		R.I.R.		Fayoumi	
	♀	♂	♀	♂	♂	♀	♂	♀
Breast Depth (cm)	7.1	6.7	8.6	7.0	8.9	7.4	8.2	7.7
Tibia Length (cm)	11.7	10.6	11.0	10.5	12.8	12.1	11.6	10.7
Femur Length (cm)	7.6	6.8	7.8	7.2	8.7	7.8	7.6	7.8

TABLE 2. The carcass parts, dressing values and total edible meat of the treated and untreated groups at 16 weeks of age.

Parts and Dressing values	Untreated				Treated			
	R.I.R.		Fayoumi		R.I.R.		Fayoumi	
	♂	♀	♂	♀	♂	♀	♂	♀
Blood	4.7	4.2	4.3	4.0	4.1	3.4	5.4	3.8
Feather	7.1	8.1	6.2	7.1	6.5	7.9	6.6	7.8
New York Dressed Carcass . .	88.1	88.0	89.6	88.9	89.3	88.8	88.0	88.4
Giblets	6.4	6.4	5.7	5.4	5.6	5.7	5.5	5.3
Head	4.8	4.5	5.4	4.4	4.2	4.2	5.6	4.1
Dressing percentage	67.3	68.1	69.6	68.4	70.3	71.4	69.8	72.0
Breast muscles :	9.1	9.5	9.7	10.9	10.6	13.6	9.4	12.3
A. Pectoralis major	6.5	6.7	6.9	6.9	7.5	9.3	6.4	8.4
B. Pectoralis minor	2.7	2.8	2.7	3.2	3.3	3.6	2.9	3.8
Leg muscles :	16.2	14.9	17.6	16.6	17.8	16.9	16.5	16.2
A. Thigh	9.0	8.4	9.6	9.6	10.0	9.7	9.4	9.6
B. Drumstick	7.3	6.5	8.0	7.0	7.9	7.0	7.2	6.9
Bones	12.5	11.8	13.3	13.5	12.8	12.3	11.9	13.0
Total edible meat	55.3	55.9	56.7	53.8	57.9	59.7	56.7	58.2

These values expressed as percentages of live body weight.

TABLE 3. Analysis of variance of carcass measurements and cut-up parts at 16 weeks of age

Source of variation	D.F.	M.S.						
		Breast Depth	Tibia Length	Femur Length	Breast Muscles	Leg Muscles	Bones	Total Edible Meat
Treatment	1	4.28**	8.10**	4.13**	19.41**	3.13	0.73	57.22**
Sex	1	7.51**	3.58*	2.59*	24.26**	5.70**	0.00	0.51
Breed	1	0.81	3.85*	0.09	0.04	0.86	2.33	6.36
Treat. × Sex	1	0.00	0.11	0.23	6.62*	0.87	0.66	15.49
Treat. × Breed	1	2.48*	2.82*	1.24	7.62*	11.90**	3.23	1.84
Breed × Sex	1	0.00	0.02	0.81	0.62	0.58	3.09	7.40
Treat. × Sex × Breed	1	2.58	0.11	0.86	0.11	0.25	0.20	5.14
Error	24	0.46	0.55	0.41	1.19	0.75	1.51	6.66

* Significant at 0.05.

** Significant at 0.01.

TABLE 4. Analysis of variance of carcass parts at 16 weeks of age

Source of variation	D.F.	M.S.					
		Blood	Feather	Giblets	Head	Dressing Percentage	New York D.C.
Treatment	1	0.17	0.10	25.72**	0.62	61.90**	0.00
Sex	1	7.12**	14.59**	1.10	5.88**	10.60	0.13
Breed	1	0.60	2.39	34.19**	2.71**	2.70	0.07
Treat. × Sex	1	1.87	0.35	0.17	0.03	16.00**	1.11
Treat. × Breed	1	3.71	0.89	9.94	0.73	9.31	12.69**
Breed × Sex	1	0.29	0.01	1.67	3.79**	0.00	1.10
Treat. × Sex × Breed	1	1.12	2.03	0.07	0.59	12.40	0.91
Error	40	0.91	0.86	2.57	0.23	3.51	1.59

* Significant at 0.05.

** Significant at 0.01.

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The first part of the document discusses the general principles of the law of contract, which are based on the freedom of contract and the sanctity of contracts. It is essential to understand these principles as they form the foundation of the entire legal system.

In the second part, the document explores the various elements that constitute a valid contract. These include offer, acceptance, consideration, and intention to create legal relations. Each of these elements is crucial for the formation of a binding contract.

The third part of the document deals with the discharge of a contract. This can occur through performance, agreement, frustration, or breach. Understanding the different ways in which a contract can be discharged is vital for legal practitioners.

Finally, the document discusses the remedies available for breach of contract. These include damages, specific performance, and injunctions. The law aims to provide an adequate remedy for the injured party, restoring them to the position they would have been in had the contract been performed.