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The EffectStudy of Different Levels of Rapeseed Meal on Some Productive and Physiological Characteristics in Broiler Chickens.

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Abstract
This study was conducted to assess the effect of different ratio of Rapeseed meal on some productive and physiological characteristics in Broiler chickens
This study include 63 bird sample with age of 21 days that had been divided into 3 groups treatment with (control (C) 0% , T1 5%, T2 10%) of Rapeseed meal respectively and each group included to three replication . The poultry dietary and water were supplied freely in front of birds during whole study period . The results were as follow :

1- There was no significant differences in bird weight in all treatments. And there was significant decrease in feed intake and significant increase in feed conversion ratio (FCR) in T2 in comparison with (C , T1)
2- There was no significant differences in uric acid serum concentration for all groups and significant increase in serum cholesterol in T2 in comparison with (C , T1). There were significant differences between all groups in serum glucose level. There was significant decrease in serum glucose level by increase the Rapeseed meal ratio (5%, 10%) respectively in comparison with control .

According to results , it could be used Rapeseed meal with 10 % ratio in Broiler chickens feed that gives the best FCR.

Introduction

As the civilization developed after the middle of twentieth century , and what accompanied that of cultural and health awareness in selection of food with good quality and specially the protein content with high essential amino acid . All the previous results explain that there is an increase in demand of poultry meat because of its high nutritional value like its protein content which constitute about 25-35 % when it is cooked in respect to the beef and sheep meat which constitute 21- 27 % and 20-24 % respectively (1).

Due to governmental support for cultivation of the oily plant Rapeseed meal (Brassica rapa) in many areas of Iraq . for its high content of oil , which constitute 30-47 % in its seeds (2). In Iraq , it could be cultivated easily under normal irrigation condition because it is a winter product and does not need a large quantity of irrigation water like summer product (3) .

Rapeseed meal is an important oily product because of its high energy yield which is more than protein and carbohydrates . Many attempts was conducted since mid fifties of the past century to reduce the percentage of anti-nutrients in it . As a result , Erucic acid concentration is less than 2% and Glucosinolatesnot more than 20 µ mole / gm. (4), because of that , they used the crop residues of Rapeseed in animal feed and also because its good content of protein 30-36 % (5) beside its high content of essential amino acids (6). Rapeseed meal also considered as an important replacement for soybean meal as one of the protein sources that constitute provender (3).

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According to all mentioned previously , this study aimed to assess the effect of using different percentage of Rapeseed meal on some productivity and physiological characteristics of broiler chicken .

Materials and methods

In this study 63 birds of broiler chickens were fed starter ration till 21 days and then developed birds were distributed randomly into 3 groups (Control (C) 0% rapeseed meal), (T15% rapeseed meal), (T2 10% rapeseed meal), (21 chickens / treatment) with 3 replication in distant cages (1* 0.5 * 0.5) m. And they were fed on grower ration which it was shown in table (1). Food and water were available freely.

Data on feed intake(F.I) and body weight gain(B.W) in chicken were recorded at 49 days and use to compute feed conversion ratio (F.C.R) .

Uric acid , Glucose , Total cholesterol were measured by using France kits (Biolabo S. A. 02160, Mazaiy , France) . These kits was obtained from markets and the procedure was conducted according to the instructions supplied with them from the manufacturing company with leaflet .The data of this study are analyzed by using completely randomized design according to (7). Duncan multiple range is used to find the differences among the means of treatments. (8)

Table (1) Dietary components and chemical composition of grower dietary .

Substance	Control 0%	Rapeseed meal 5%	Rapeseed meal 10%
Wheat	63.85	63.35	61.63
Soybean meal	20	15	12
Rapeseed meal	0	5	10
Crud protein	10	10.5	10.22
Sun flower oil	5	5	5
Limestone	0.7	0.7	0.7
Mixed vitamins	0.1	0.1	0.1
Methionine	0.1	0.1	0.1
Food salt	0.25	0.25	0.25

Results and discussion

Body weight , Feed intake and Feed conversion ratio .

The results in table (2) had shown that addition of rapeseed meal in broiler chickens dietary with percentage of (5% , 10%) respectively was having no significant effect on bird weight in spite of slight increase in weight (1.996 , 2.123) K.g in comparison with control weight (1.973) at age of 49 days . This may be due to low content of anti-nutrients in Rapeseed meal and the effect of Erucic acid and Glucosinolates was negligible because of selection of hybrid with low content of those anti- nutrients (9)and (10). Which agree with (11).

While feed intake , as shown in table (2) , was decreased significantly as the percentage of Rapeseed meal increased to (T2 10%) in comparison with (C , T1). This decrease in feed intake may be due to the presence of anti-nutrients in Rapeseed meal (10). Which agree with (12) and (13).

Table (2) shows that there are significant increase in (FCR) in T2(10%) Rapeseed meal in comparison with others . this may be due to increase in bird weight in T2 in comparison with others (C, T1) and due to decrease in feed intake in the same treatment (T2) , and since (FCR) = feed intake / bird weight. This also may be because of high content of protein and fat in Rapeseed meal (14).

Physiological characteristics :

The results in table (3) showed that there is no significant differences in uric acid in all treatment (C 0% , T1 5%, T210%) of Rapeseed meal respectively .

While cholesterol level is significantly increase in T2 (10%) of Rapeseed meal in comparison with others (C 0% , T1 5%) and this is may be due to high fat content in Rapeseed (14).

Glucose levels showed in table (3) had significantly decrease and this is may be due to decrease in feed intake and full dependence on glucose for energy production .

Table (2) the effect of rapeseed meal (C 0%, T15%, T2 10%) in poultry feed on body weight (B.W) feed intake (F.I.) , Food conversion coefficient (F.C.C.)

Groups / Parameter	C	T1	T2
B.W.	1.973±0.018 a	1.996±0.037 a	2.123±0.073 a
F.E.	3.625±0.007 a	3.606±0.003 a	3.533±0.005 b
F.C.R.	1.836±0.013 a	1.807±0.032 a	1.667±0.058 b

Number of animals per each group (21).
C : control group 0% Rapeseed meal . T1: treatment 5% Rapeseed meal T2 : treatment 10% Rapeseed meal
(B.W.): body weight . (F.E.) : feed intake . (F.C.R): Feed conversion ratio.
Different small letters denote significant differences among groups($p<0.05$) .

Table (3). The effect of rapeseed meal (C 0%, T15%, T2 10%)after 49 day on Uric acid , Glucose , Cholesterol in poultry blood serum .

Groups / Parameter	C	T1	T2
Uric acid	7.275±0.110 a	8.075±0.415 a	8.125±0.094 A
Glucose	182.750±1.547 a	180.000±4.143 b	176.500±5.923 c
Cholesterol	182.500±4.941 a	183.000±2.415 a	193.500±1.554 b

Number of animals per each group (21).
C : control group 0% Rapeseed meal . T1: treatment 5% Rapeseed meal T2 : treatment 10% Rapeseed meal
Different small letters denote significant differences among groups($p<0.05$) .

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دراسة تأثير مستويات مختلفة من وجبة بذور اللفت على بعض الخصائص الانتاجية والفسيولوجية في دجاج التسمين

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الخلاصة

أجريت هذه الدراسة وذلك لغرض معرفة مدى تأثير نسب مختلفة من كسبة بذور السلجم على بعض الصفات الإنتاجيةوالفسيولوجية في مصل الدم . وقد تضمنت هذه الدراسة 63 طير لحم بعمر 21 يوم قسمت عشوائيا إلى ثلاث معاملات (0% ، 5% ، 10%) مقسمة إلى ثلاث تكرارات وتم توفير العلف والماء بصورة حرة أمام الطيور طيلة فترة التجربة .

وأشارت النتائج إلى :

١ - عدم وجود فرق معنوي في وزن الطير في جميع المعاملات ، ونقص معنوي في كمية استهلاك العلف وزيادة في معامل التحويل الغذائي في المعاملة الثانية مقارنة مع بقية المعاملات .

٢ - عدم وجود فرق معنوي في حمض اليوريك في الدم لجميع المعاملات . وزيادة معنوية في الكولسترول في المعاملة الثانية مقارنة مع المعاملة الأولى ومجموعة السيطرة . ووجود اختلافات معنوية بين جميع المجاميع في تركيز الكلوكوز في مصل الدم . حيث أظهرت النتائج انخفاض معنوي في مستوى تركيز الكلوكوز بزيادة مستوى الكسبة (5% ، 10%) على التوالي مقارنة مع السيطرة .

بناءا على النتائج يمكن استخدام كسبة السلجم بنسبة (10) في علائق فروج اللحم التي أعطتأفضل نتيجة في معامل التحويل الغذائي .

الكلمات المفتاحية : كسبة السلجم ، الطيور الدواجن ، فسيولوجي