**Growth performances1 and serum1 biochemical responseو of broilerو chickens fed/ on diet/ supplemented with: cyproheptadine as substitute growth promoters.**

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**ABSTRACT**

 The studyو aims to knowو the effect of adding cyproheptidine as a feed additive (growth promoter) to the broiler diet0.sixty birds(Ross: breed) one day/ old were beenو grouped randomly: in to twoو groups :-treatment group/ and control group/, and the chicks were/ housing and feeding for:/ 49 days.

 The results were: show significantly affected (p<0.05) by the treatment group throughout the/ production period:(1-49)days: ,increase of body weight , Live body. weight gain/ , Food intake: ,and weight of// abdominal fat ,/ heart and leg/ , all other/ carcass parameters. the serum content of creatinine/ tends to drop:(0.91 **mg/dl** )while the urea content tends to increase(1.30 **mg/dl** ) in treatment group. Cyprohptadine was significant effected (p<0.05)on the serum protein contant in treatment group(2.12 **g/dl**) than control group(2.84 **g/dl**)and there was/ no significant /effect of cyproheptadine in serum contents /of (ALAT)/ and (ASAT)/, decreased serum content of Cholesterol compered than control group.

**Key words** : cyproheptidine , broiler.

**INTRODUCTION**

 The poultry industry1 has recently witnessed, a great development7 due to the6 population increase, at the global1 level during the1 past decades. The poultry industry; now occupies an0 important position1 as a source of1 low-priced protein, from meat andm eggs of high nutritional1 value for human1 consumption.

 Poultry feeding constitutes1 the greatest cost1 among other 1costs involved in1 the production process1 which may exceed1 70% of the cost ,1published by the 1food and agriculture organization (FAO).

 Cyprohptadine is an1 antihistamine that also1 has anti serotonin, activity.it is well absorbed1 orally and has1 a wide margin1 of safety. Cyprohptadine is 1metabolized by the ,liver and excreted1 in the urine( 1 ). Cyprohptadine is used1 as an appetite1 stimulant for sick, cats, including those1 undergoing chemotherapy0. When used for1 this purpose it,1 should be noted1 that it my1 be take two2 to three days12 for the drug1 to reach full1 effect . it also is, used to treat1 feline asthema1 in cats whose1 condition is not/ totally controlled1 by corticosteroids1 and bronchodilators( 2 ,3).

**MATERIALS AND METHODS**

**Birds ,dietary treatments and experimental design.**

 sixty (Ross/ breed) one day/ old chicks were/ feed by: special feeding/ program/, grouped, randomly into:: control group, treatment group, and housed for/ 42 days ,,and measure some/ serum biochemical parameter/ and growth performance. Feeding the/ chicken was free/ and /consumed water/.

**TABLE 1/: composition/ of broiler diets**

|  |  |  |
| --- | --- | --- |
| Finisher/. .(22,-49). Day.. | Starter../ (1-21).. /Day. | Ingredient/. |
| 18.3 | 20 | Wheat….. |
| 43.5 | 40.2 | Yellow Corn1 |
| 23.4 | 27 | Soybean meal. |
| 3.6 | 1.7 | Sunflower Oil.. |
| 0.5 | 0.4 | calcium Phosphate. |
| 10 | 10 | Protein Concentrate.. |
| 0.3 | 0.3 | **cyproheptadine** |
| 0.4 | 0.4 | Nacl.. |
| 100 | 100 | Total. |

**Growth and, carcass traits**

 Data on body weight , body /weight gain ,feed intake/ were collected and carcass// characteristics parameters//at the end/ of the// feeding trial// 49 days 12birds from each treatment group were randomly selected and slaughtered// for carcass evaluation . blood from each// slaughtered bird //was \*collected for// biochemical analysis/.

**Serum biochemical// analysis.**

 From /each slaughtered bird blood /was collected /in test tube: and serum\* obtained after centrifugation/ was preserved/ at -20o C /for the evaluation// of biochemical /parameters. Biochemical/ parameters consisted/ of total protein/ , Cholesterol, alanine// aminotransferase/( ALAT),aspartate/ aminotransferase/ (ASAT) , Urea and /creatinin using colorimetric/ method .

**Statistical/ Analysis**

 The obtained/ quantitative data/ were presented /as (Mean ±/ SE) in tables/.SAS was/ used to analyze/ the results/ and ANOVA /was used to determine/ the differences/ between groups//.

**RESULTS/**

**Performances /and carcass// traits//**

 Table( 2)/ explain the/ effects of //cyproheptadine on feed /intake ,/live body/ weight, body /weight gain// of broiler/ chickens .All the/ study parameters// were significantly/ affected (p</0.05) by the// treatment .throughout /the production/ period(1-/49)//days/,

**TABLE2: Effect of cyproheptadine on growth performance of broiler chickens.**

|  |  |  |
| --- | --- | --- |
| **Age(days)** | **Control** | **treatments** |
| Food intake (g\ bird) (Mean±SE) |
| **1 - 21** | 572.21b±1.40 | 658.45a±1.30 |
| **22 - 35** | 981.41b±2.22 | 1045.21a±2.14 |
| **36 - 49** | 1269.73b±9..27 | 1385.25a±8.94 |
| **1 - 49** | 4498.83b±20.13 | 4793.02a±21.46 |
| Live body. weight gain(g) (Mean±SE) |
| **1 - 21** | 410.81b±4.45 | 441.01a±11.64 |
| **22 - 35** | 540.89b±2..85 | 602.91a±4.51 |
| **36 - 49** | 611.91b±4..80 | 627.83a±1.56 |
| **1 - 49** | 2453.021b±9..55 | 2587.36a±9.511 |
| Live body weight. (g) (Mean±SE) |
| **1 - 21** | 665.11b±11..30 | 865.41a±11..31 |
| **22 - 35** | 1103.08.b±7.08. | 1434.32a±6..90 |
| **36 - 49** | 2001.02b.±5.65 | 2118.33a±8.31 |
| **1 - 49** | 2412.13.b±.6..66 | 26315.25a±8.11 |

The/ effect of Cyprohptadine// on the carcass/ yield ,carcass cuts/ and offal/ weight of /the broiler/ are shown/ in table/ (3)./apart from/ the relative/ weight of abdominal/ fat , heart and/ leg , all other/ carcass parameters/ studied (p<0/.05) were significantly/ affected by/ Cyprohptadine in the/ diet .the hight carcass yield was recorded with control group .the relative/ weight of/ pancreas , gizzard /and liver/ increased /with treatment group.

**TABLE3: Carcass characteristics of broilers fed with cyproheptadine.**

|  |  |  |
| --- | --- | --- |
| **Carcass parameters (BW%)** | **Control** | **treatments** |
| **Carcass yield** | 73.28b±1.40 | 69.98a±1.30 |
| **Head** | 2.29b±0.22 | 2.42a±0.14 |
| **Leg** | 3.24b±1.27 | 3.45a±0.94 |
| **Liver** | 1.82b±0.63 | 1.97a±0.46 |
| **Heart** | 0.44±0..27 | 0.51a±0.16 |
| **Pancreas** | 0.17b±0.07 | 0.25a±0.06 |
| **Gizzard** | 1.56b±0..47 | 1.66a±0.46 |
| **Abdominal fat** | 1.67b±0.58 | 1.62a±0.22 |

The supplementation of Cyprohptadine induced a /significant reduction in/ the serum/ content of creatinine/ as compared to the control/ group (table 4/).the serum/ content of creatinine/ tends to/ drop while/ the urea/ content tends to// increase in treatment group.the Cyprohptadine was significant effected (p<0.05)on the serum protein contant in treatment group than control group.

 The effect of Cyprohptadine on serum contents of (ALAT) and (ASAT) was no significant effected (p<0.05) on (ALAT and ASAT )content as compared to treatment group. Cyproheptadine also significantly decreased serum content of Cholesterol compered than control group.

**TABLE 4: The influence of cyproheptadine on serum biochemical (Mean ±SE) of broiler chicks**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| creatinine mg/dl | Ureamg/dl | ASAT(UI/I) | ALAT(UI/I) | Cholesterolmg/dl | Total proteing/dl | Groups |
|  |  |  |  |  |  |
| 1.30 ±0.02b | 1.10 ±0.02b | 120.47a±0.30 | 21.25a±0.01 | 69.7 b±0.36  | 2.84b±0.01 | **Control** |
| 0.91±0.01a | 1.30 ±0.02a | 120.46a±0.41  | 21.23a±0.21 | 39.95a±0.11 | 2.12a±0.05 | **Treatments** |

**DISCUSSION**

The study1 revealed,, that 1used of/ cyproheptadine1 in diet1 of broiler1chickens, induced 1significant1 (p<0.05) increased in1 feed intake as, /compared to the/, control0 group/. These/ results/ are/ in// close agreement0 with// the findings// of *Harrison et al* (4,5)1which- found1 that/ cyproheptadine .was /stimulate/ the appetite1 and/ increased body/, weight in/ human. , also it had1 the same/ effects/ on//cats/(6), .The increase of1 the .feed intake1 recorded. in these/ studies could be1 due/ to its affected/ appetibility,. Cyproheptadine/ is/ commonly// used 1as/ an appetizer and1 treat/ anorexia/ in cats due/ to its1 anti-/serotonin/ effects//(7 ) and //also/ causes/ depression/ or1 sleep //and decrees/ of// movement//( 8)/ , all of/ these/ my/ cause increased/ in weight //gain/ , therefore/ increased1 food/ intake leads/ to1 increase2 in weight1 gain/ and1 as 1a result 1of 2increased 1food1 conversion1 efficiency1/. Also1 weight1 gain 1 results,. From\* the/ increase/ in1 the weight of Carcass1 parameters/ like1 muscles , head1 ,the heart /,limbs1 and1 gizzard11, as 1well as abdominal 1fat1 and 1the pancreas/ ,as shown1 in 1table 13.the/ increase// in /pancreas //weight/ 2might/ suggest// that //this /organ/ released, great// quantities\*, /of/ digestive/ enzymes /.Gizzard// relative/ 1weight// increased// because//an increase/\*in gizzard/ activity/ in /treatment/// group..

 Diet1 supplemented1 1with1 cyproheptadine 1was1 significant 1(p<0.05) 1, decrease of1 blood1 /protein .1these/ results1 are/ 1agreement with1/ those1 of/ 1*Jiang et/ al*./( 9 )1who reported1 decrease 11in protein1 serum /in1 human treated 11with1 cyproheptadine/ .and1 the/ decreased1 of cholesterol/ and 1creatinine/ in/ treated//group/ may//be 1due/ to/ withdrawal1 from/ the blood /,to the body/ tissues/ and/1 muscles when/ the body/ weight/ increases/ .there //was no2 significant/ effect2 of// cyproheptadine /on/ serum/ contents\* of / transaminases/ (ALAT/ )\*and//( ASAT/\*). These results/ are\*\* in agreement/ with/ /the findings// of/ *Valérie et/ al* \*(10)//which// found\* that/ cyproheptadine /\* had //hepatotoxicity\* is uncommon// to\* rare// so/ this/ result// of/ our/ /study suggests// that/ cyproheptadine/ is //not/ toxic //to broiler////. ,

## CONCLUSIONS//

 Cyproheptadine/ is/ an. Effective/ and/ well-tolerated1 appetite/ stimulant2 in broiler.

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