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# DIFFERENCES IN GROWTH RATE AND VIABILITY AS AFFECTED BY ADDING ANTIFUNGAL COMPOUND TO CHICKEN DIET

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*Abstract*

Matrouh, Silver Montazah, R.I.R. and W.L. were used in this study. Each strain was divided into 3 treatment groups (0.0%, 0.04% and 0.08% Aflaban in diet). Chicks produced by each of the main 12 groups were divided in term to the three treatments mentioned above.

Differences in growth rate, rate of gain and chick viability strain differences in these traits were studied and the results obtained were :

1- Adding the antifungal compound (Aflaban) in parents diet affected growth rate, the rate of gain and viability of their progeny, where progeny of parents fed 0.04% Aflaban in their diet were heavier than other progeny groups.

2 - Progeny fed control diet was heavier than other treatment groups, regardless to parents diet.

3 - Strain differences occurred in these traits and local strains were more efficient and responded to adding the antifungal compound in their diet.

## INTRODUCTION

Mycotoxicosis had been demonstrated in many animal farms including cattle, swine and poultry, (Goldblatts 1969). Moreover, chicken have been shown to be affected by Aflatoxin both in naturally occurring field poisoning and in controlled feeding studies.

Aflatoxin, (Smith and Hamilton 1970), Ochratoxin, (Choudhury *et al.*, 1971), and T-2 toxin, (Wyatt *et al.*, 1973) adversely affected chickens.

Body weight, average weigt gain and feed conversion for broilers fed mycotoxins in their diet were lower than control (Bacon and Marks 1976, and Chi *et al.*, 1977-a,b). The depression in body weight of chickens fed Ochratoxin diet was proportional to level of the toxin and was more remarked and prolonged in males than in females (Prior *et al.*, 1980).

Body weight of chicks from hens fed F-2 in diet were not significantly different from those of chicks from hens fed the control diet at hatch 1,2,3 and four weeks of age (Bacon and Marks 1976).

Romoser *et al.* (1978) and Dilwarth *et al.* (1979) found that adding Sorpic acid by level of 0.04% to the diet had improving effect on chick's growth rate, rate of gain and feed conversion.

Chick viability was not significantly affected by adding antifungal compounds to the diet, (Cross and Hughes 1976, Stewart *et al.*, 1977, Proudfoot and Dewitt 1978).

Dilwarth *et al.* (1979) found that, when using Sorpic acid by level of 0.02%, 0.04 % and 0.06%, mortality percent was low and appeared to be unrelated to the dietary variables.

This study was conducted to study the effect of dietary antifungal compound on growth rate, rate of gain and viability of growing chicks and strain differences in these traits.

The antifungal compound used was "Aflaban" which is mainly Sorpic Acid.

## MATERIALS AND METHODS

Matrouh (M), Silver Montazah (SM), Rhode Island Red (RIR) and White Leghorn (WL) pullets were used in this study. They were divided into 12 groups throughout three treatments groups :

A1 : Fed diet containing 0.00% Aflaban (control treatment).

B1 : Fed diet containing 0.04% Aflaban.

C1 : Fed diet containing 0.08% Aflaban.

Each treatment consisted of four breeding groups. Chicks produced by each of

the main 12 groups were wing banded and divided into three treatment groups :

A2 : Fed control diet.

B2 : Fed diet containing 0.04% Aflaban.

C2 : Fed diet containing 0.08% Aflaban.

Each of these groups included individuals representing all parent groups.

Chicks were individually weighed to the nearest 5 grams at four weeks intervals up to 16 weeks of age. Rate of growth was calculated according to Lerner and Asmundson (1932) as follows :

$$R1 = \frac{W1-W2}{W1} \times 100$$

$$R2 = \frac{W1-W2}{1/2\,(W1 + W2)} \times 100$$

Where : R1 and R2 = Rate of growth .

W1 = initial weight.

W2 = 2nd weight.

Data concerning chick's mortality were daily recorded for each group.

The liner model of analysis of variance for fixed effect and the Duncan's multiple range test was used to test the significant of the mean differences (Snedecor and Cochran 1967) .

## RESULTS AND DISCUSSION

### 1- Averge body weight :

### a - Effect of adding antifungal compound :

Table 1 shows that chicks fed the control diet were significantly heavier than those of the other groups, regardless of strains. There were significant differences between parent treatments, where progeny of parents fed 0.04% Aflaban were superior to other treatments, but adding Aflaban to chick's diet significantly depressed their growth at four weeks of age .

Table 1. Average body weight of 4 weeks old chicks produced by parents fed diets containing different levels of Aflaban .

| Parent diet | Progeny diet | Matrouh | S.M. | R.I.R. | W.L. | Overall average |
|---|---|---|---|---|---|---|
| | A2 | 182.1 | 220.0 | 148.3 | 174.0 | 181.1 |
| A1 | B2 | 155.0 | 173.5 | 134.5 | 162.5 | 156.4 |
| | C2 | 145.6 | 177.1 | 127.5 | 141.5 | 147.9 |
| | Average | 160.9 | 190.2 | 136.8 | 159.3 | 161.8 |
| A1 | A2 | 195.0 | 261.4 | 144.2 | 161.7 | 190.6 |
| | B2 | 158.3 | 190.0 | 133.5 | 156.0 | 159.5 |
| | C2 | 172.9 | 220.0 | 122.5 | 156.7 | 168.0 |
| C1 | Average | 175.4 | 223.8 | 133.4 | 158.1 | 172.7 |
| | A2 | 190.4 | 210.3 | 134.0 | 137.9 | 168.2 |
| | B2 | 135.0 | 160.7 | 129.0 | 160.7 | 146.4 |
| | C2 | 190.5 | 189.4 | 131.5 | 148.5 | 165.0 |
| | Average | 172.0 | 186.8 | 131.5 | 149.0 | 159.9 |
| Overall | A2 | 189.2 | 230.6 | 142.2 | 157.9 | 180.0 |
| average | B2 | 149.4 | 174.7 | 132.3 | 159.7 | 154.1 |
| | C2 | 169.7 | 195.5 | 127.2 | 148.9 | 160.3 |

Table 2. Average body weight of 4 weeks old chicks produced by parents fed diets containing different levels of Aflaban .

| Parent diet | Progeny diet | Matrouh | S.M. | R.I.R. | W.L. | Overall average |
|---|---|---|---|---|---|---|
| A1 | A2 | 490.0 | 624.0 | 382.5 | 491.5 | 497.0 |
| | B2 | 432.5 | 514.0 | 357.5 | 471.1 | 443.8 |
| | C2 | 414.4 | 457.4 | 325.0 | 414.0 | 402.7 |
| | Average | 445.6 | 531.8 | 355.0 | 458.9 | 447.8 |
| A1 | A2 | 550.7 | 604.3 | 355.0 | 400.0 | 477.5 |
| | B2 | 540.0 | 355.0 | 410.0 | 367.5 | 463.1 |
| | C2 | 472.9 | 524.4 | 355.0 | 364.2 | 429.1 |
| C1 | Average | 521.2 | 554.6 | 373.3 | 377.2 | 456.6 |
| | A2 | 539.6 | 633.8 | 344.2 | 359.0 | 469.2 |
| | B2 | 465.0 | 419.3 | 417.3 | 424.2 | 431.5 |
| | C2 | 425.4 | 503.3 | 372.5 | 369.5 | 417.7 |
| | Average | 476.7 | 518.8 | 378.0 | 384.2 | 439.5 |
| Overall average | A2 | 526.8 | 620.7 | 360.6 | 416.8 | 481.2 |
| | B2 | 479.2 | 489.4 | 394.9 | 420.9 | 446.1 |
| | C2 | 437.6 | 495.0 | 350.8 | 382.0 | 416.5 |

Table 3. Average body weight of 12 weeks old chicks produced by parents fed diets containing different levels of Aflaban .

| Parent diet | Progeny diet | Matrouh | S.M. | R.I.R. | W.L. | Overall average |
|---|---|---|---|---|---|---|
| | A2 | 828.2 | 957.5 | 618.3 | 809.0 | 803.3 |
| A1 | B2 | 742.5 | 922.5 | 522.5 | 786.5 | 743.5 |
| | C2 | 811.7 | 860.3 | 495.0 | 727.0 | 723.5 |
| | Average | 794.1 | 913.4 | 545.3 | 774.2 | 756.8 |
| A1 | A2 | 825.0 | 931.4 | 562.5 | 664.2 | 745.8 |
| | B2 | 967.5 | 865.7 | 527.5 | 627.5 | 747.1 |
| | C2 | 822.7 | 874.4 | 490.0 | 611.7 | 724.7 |
| C1 | Average | 871.8 | 890.5 | 560.0 | 634.5 | 739.2 |
| | A2 | 866.7 | 972.5 | 550.0 | 642.7 | 758.0 |
| | B2 | 860.0 | 723.6 | 650.0 | 760.0 | 748.4 |
| | C2 | 863.6 | 838.9 | 615.0 | 599.5 | 729.3 |
| | Average | 863.4 | 845.0 | 605.0 | 667.4 | 745.2 |
| Overall | A2 | 840.0 | 953.8 | 576.9 | 705.3 | 769.0 |
| average | B2 | 856.7 | 837.3 | 566.7 | 724.7 | 746.3 |
| | C2 | 832.7 | 857.9 | 566.7 | 646.1 | 725.8 |

At 8 weeks of age (Table 2), chicks fed the control diet were significantly heavier than those fed diets containing Aflaban. This held true for all strains except for the W.L. and R.I.R. chicks fed diet containing 0.04% Aflaban produced by parents fed diet containing 0.08% Aflaban, where they were heavier than chicks of the other groups, in the same parents treatment. Progeny produced by parents fed diet containing 0.04% Aflaban were heavier than other chick groups, but the differences were not significant.

At age of 12 weeks, Table 3 shows that progeny produced by parent fed diet containing no Aflaban, were significantly heavier when they were fed the control. Progeny produced by parents fed diet containing certain levels of Aflaban were influenced by the diet allowed to the chicks, and strain by diet interaction was evident, when parents were allowed a diet containing 0.04%. Matrouh 12-week chicks fed a diet containing 0.04% Aflaban were heavier than other feeding groups. However, W.L., S.M. and R.I.R. 12 - week - chicks produced by parents fed a diet containing 0.04% Aflaban were significantly heavier when these chicks were fed the control diet. On the other hand, when parents were fed a diet containing 0.0% Aflaban their progeny was affected by the type of the diet.

Sixteen weeks old chicks in general were not significantly affected by parents diet (Table 4). Chicks fed the control diet were superior to the other chicks, and adding Aflaban to chick's diet had significant adverse effect on the growth of 16 weeks old chicks. This adverse effect, however, was not pronounced in some cases. Moreover, Matrouh chicks produced by parents fed diet containing 0.04 % Aflaban were heavier than those the control diet when fed diet containing Aflaban. W.L. and R.I.R. chicks produced by parents fed a diet containing 0.08% Aflaban were heavier when these chicks were fed a diet containing 0.04% Aflaban. S.M. chicks produced by parents fed the control diet were heavier than those produced by parents fed Aflaban in their diets. The heaviest S.M. chicks were those produced by parents fed the control diet when they were fed the same diet.

The results agreed in part with the finding reported by Romoser et al. (1978) and Dilwarth et al. (1979) who found that adding Sorpic acid by level of 0.04% to diet of chicks improved their growth rate .

**b - Strain differences :**

Regardless of treatment, Silver Montazah chicks were superior to other strains at all studied ages, (4,8,12 and 16 weeks of age), while Matrouh chicks came next to Silver Montazah followed by W.L. R.I.R. chicks had the lowest average

Table 4. Average body weight of 16 weeks old chicks produced by parents fed diets containing different levels of Aflaban .

| Parent diet | Progeny diet | Matrouh | S.M. | R.I.R. | W.L. | Overall average |
|---|---|---|---|---|---|---|
| | A2 | 1026.3 | 1161.7 | 761.7 | 906.4 | 9 64.0 |
| A1 | B2 | 977.5 | 1073.6 | 702.5 | 850.0 | 900.9 |
| | C2 | 1000.7 | 1018.2 | 720.0 | 895.7 | 908.7 |
| | Average | 1001.5 | 1084.5 | 728.1 | 884.0 | 924.5 |
| A1 | A2 | 1022.5 | 1036.7 | 822.5 | 965.0 | 961.7 |
| | B2 | 1146.7 | 950.0 | 794.2 | 917.0 | 952.0 |
| | C2 | 1067.5 | 953.3 | 717.5 | 920.0 | 914.6 |
| C1 | Average | 1078.9 | 980.0 | 778.1 | 934.0 | 942.8 |
| | A2 | 1106.7 | 1088.3 | 837.5 | 760.0 | 948.1 |
| | B2 | 1040.0 | 945.8 | 838.3 | 892.5 | 929.2 |
| | C2 | 1062.9 | 1038.6 | 760.8 | 809.4 | 917.9 |
| | Average | 1069.9 | 1024.2 | 812.2 | 820.6 | 931.7 |
| Overall | A2 | 1051.8 | 1095.6 | 807.2 | 877.1 | 957.9 |
| average | B2 | 1054.7 | 989.8 | 778.3 | 886.5 | 927.4 |
| | C2 | 1043.7 | 1003.4 | 732.8 | 875.0 | 913.7 |

Table 5. Rate of gain for interval 4-8 weeks of age of chicks produced by parents fed diets containing different levels of Aflaban.

| Parent diet | Progeny diet | | Matrouh | S.M. | R.I.R. | W.L. | Overall average |
|---|---|---|---|---|---|---|---|
| A1 | A2 | R1 | 169.0 | 183.7 | 156.1 | 182.5 | 172.8 |
| | | R2 | 91.6 | 95.8 | 88.2 | 95.4 | 92.8 |
| | B2 | R1 | 179.0 | 196.3 | 165.8 | 189.9 | 182.8 |
| | | R2 | 94.5 | 99.1 | 90.7 | 97.4 | 95.4 |
| | C2 | R1 | 184.7 | 158.2 | 154.9 | 192.6 | 172.6 |
| | | R2 | 96.0 | 88.3 | 87.3 | 98.1 | 92.4 |
| A1 | A2 | R1 | 182.4 | 131.2 | 146.2 | 147.4 | 151.8 |
| | | R2 | 95.4 | 79.2 | 84.3 | 84.8 | 85.9 |
| | B2 | R1 | 241.1 | 181.6 | 207.1 | 135.6 | 191.4 |
| | | R2 | 109.3 | 95.2 | 101.7 | 80.8 | 96.8 |
| | C2 | R1 | 173.6 | 138.4 | 189.8 | 132.4 | 160.8 |
| | | R2 | 92.9 | 81.8 | 97.4 | 79.7 | 88.7 |
| C1 | A2 | R1 | 183.4 | 400.6 | 156.8 | 160.4 | 175.3 |
| | | R2 | 95.1 | 100.1 | 87.9 | 89.0 | 93.0 |
| | B2 | R1 | 244.4 | 160.9 | 223.6 | 164.0 | 198.2 |
| | | R2 | 110.0 | 89.2 | 105.6 | 90.1 | 98.7 |
| | C2 | R1 | 123.4 | 165.7 | 183.3 | 148.8 | 155.3 |
| | | R2 | 76.3 | 90.6 | 95.6 | 85.3 | 87.0 |
| Overall average | A2 | R1 | 178.3 | 171.8 | 153.0 | 163.4 | 166.6 |
| | | R2 | 94.0 | 91.7 | 86.8 | 89.7 | 90.6 |
| | B2 | R1 | 221.5 | 179.6 | 198.8 | 166.5 | 190.8 |
| | | R2 | 104.6 | 94.5 | 99.3 | 89.4 | 97.0 |
| | C2 | R1 | 160.6 | 154.1 | 176.0 | 157.9 | 162.9 |
| | | R2 | 88.4 | 86.9 | 93.4 | 87.7 | 89.4 |

Table 6. Rate of gain for interval 8-12 weeks of age of chicks produced by parents fed diets containing different levels of Aflaban.

| Parent diet | Progeny diet | | Matrouh | S.M. | R.I.R. | W.L. | Overall average |
|---|---|---|---|---|---|---|---|
| | A2 | R1 | 69.0 | 53.4 | 64.6 | 182.5 | 62.2 |
| | | R2 | 51.3 | 42.1 | 48.8 | 95.4 | 47.4 |
| A1 | B2 | R1 | 71.7 | 79.5 | 67.0 | 189.9 | 66.1 |
| | | R2 | 52.8 | 56.9 | 50.2 | 97.4 | 49.4 |
| | C2 | R1 | 95.9 | 88.1 | 75.6 | 192.6 | 78.0 |
| | | R2 | 64.8 | 61.2 | 54.9 | 98.1 | 55.6 |
| | A2 | R1 | 49.8 | 54.1 | 66.1 | 147.4 | 57.1 |
| | | R2 | 39.9 | 42.6 | 49.7 | 84.8 | 44.4 |
| A1 | B2 | R1 | 79.2 | 61.8 | 70.7 | 135.6 | 60.1 |
| | | R2 | 56.7 | 47.2 | 52.3 | 80.8 | 45.3 |
| | C2 | R1 | 74.0 | 66.7 | 68.0 | 132.4 | 61.7 |
| | | R2 | 54.0 | 50.0 | 50.7 | 79.7 | 46.7 |
| | A2 | R1 | 60.6 | 53.5 | 78.9 | 160.4 | 63.2 |
| | | R2 | 46.5 | 42.2 | 56.6 | 89.0 | 47.8 |
| C1 | B2 | R1 | 84.9 | 72.6 | 79.2 | 164.0 | 73.1 |
| | | R2 | 59.6 | 53.2 | 56.7 | 90.1 | 53.3 |
| | C2 | R1 | 103.0 | 66.7 | 62.2 | 148.8 | 74.3 |
| | | R2 | 67.9 | 50.0 | 47.5 | 85.3 | 53.6 |
| | A2 | R1 | 59.8 | 53.7 | 69.9 | 163.4 | 60.8 |
| | | R2 | 45.98 | 42.3 | 51.7 | 89.7 | 46.5 |
| | B2 | R1 | 78.6 | 71.3 | 72.3 | 166.5 | 66.4 |
| | | R2 | 56.4 | 52.4 | 53.1 | 89.4 | 49.3 |
| Overall | C2 | R1 | 91.0 | 73.8 | 68.6 | 157.9 | 71.3 |
| average | | R2 | 62.2 | 53.7 | 51.0 | 87.7 | 52.0 |

Table 7. Rate of gain for interval 12-16 weeks of age of chicks produced by parents fed diets containing different levels of Aflaban.

| Parent diet | Progeny diet | | Matrouh | S.M. | R.I.R. | W.L. | Overall average |
|---|---|---|---|---|---|---|---|
| A1 | A2 | R1 | 23.9 | 21.3 | 23.2 | 12.1 | 20.1 |
| | | R2 | 21.4 | 19.3 | 20.8 | 11.4 | 18.2 |
| | B2 | R1 | 31.7 | 16.4 | 34.5 | 8.1 | 22.7 |
| | | R2 | 27.3 | 15.1 | 37.0 | 7.8 | 21.7 |
| | C2 | R1 | 23.3 | 18.4 | 46.2 | 23.2 | 27.8 |
| | | R2 | 20.9 | 16.8 | 37.5 | 20.8 | 24.0 |
| A1 | A2 | R1 | 23.9 | 11.3 | 46.2 | 45.3 | 31.7 |
| | | R2 | 21.4 | 10.7 | 37.5 | 36.9 | 26.6 |
| | B2 | R1 | 18.5 | 9.7 | 50.6 | 46.2 | 31.3 |
| | | R2 | 17.0 | 9.3 | 40.6 | 37.5 | 26.1 |
| | C2 | R1 | 29.8 | 9.0 | 46.4 | 50.4 | 33.9 |
| | | R2 | 25.9 | 8.6 | 37.7 | 40.3 | 28.1 |
| C1 | A2 | R1 | 27.7 | 11.9 | 52.3 | 18.3 | 27.6 |
| | | R2 | 24.3 | 8.6 | 47.4 | 16.7 | 24.3 |
| | B2 | R1 | 20.9 | 30.7 | 20.9 | 17.4 | 22.5 |
| | | R2 | 19.0 | 26.6 | 25.3 | 16.0 | 21.7 |
| | C2 | R1 | 23.1 | 23.0 | 23.6 | 35.0 | 26.2 |
| | | R2 | 20.7 | 21.3 | 21.1 | 29.8 | 23.2 |
| Overall average | A2 | R1 | 25.2 | 14.8 | 40.6 | 25.2 | 26.5 |
| | | R2 | 22.4 | 12.9 | 35.2 | 21.7 | 23.0 |
| | B2 | R1 | 23.7 | 18.9 | 35.3 | 23.9 | 25.5 |
| | | R2 | 21.1 | 17.0 | 34.3 | 20.4 | 23.2 |
| | C2 | R1 | 25.4 | 16.8 | 38.7 | 36.2 | 29.3 |
| | | R2 | 22.5 | 15.6 | 32.1 | 30.3 | 25.1 |

body weight at all ages and for all studied strains .

These results agreed with those reported by Mahmoud *et al.* (1980) and Kosba *et al.* (1981).

## 2 - Rate of gain :

### a- Effect of antifungal compound :

From Table 5, it could be concluded that, for interval 4-8 weeks of age, chicks produced by parents fed 0.08% Aflaban in diet had the highest rate of gain when they were fed diet containing 0.04% Aflaban. Regardless of parents diet the overall average for chicks fed 0.04% Aflaban was higher than those for other treatments. For interval 8-12 weeks of age, Table 6 shows that chicks fed 0.08% Aflaban had the highest rate of growth than other treatments. Regardless to parent's treatment, Matrouh and Silver Montazah chicks had the highest rate of growth when fed 0.08% Aflaban in their diet, while R.I.R. and W.L. chicks had the highest rate of growth when fed control and 0.04% Aflaban diet, respectively.

For age interval 12-16 weeks, rate of growth showed the same manner except that chicks produced by parents fed 0.08% Aflaban in their diet had higher rate of growth when fed the control diet. The overall average rate of growth was higher when Matrouh and W.L. Chicks were fed 0.08% Aflaban in their diet, while Silver Montazh and R.I.R. had higher rate of growth when fed 0.04% and 0.0% Aflaban, respectively.

### b - Strain differences :

At age interval 4-8 weeks, Matrouh chicks had the highest rate of growth followed by R.I.R. and Silver Montazah, while W.L. had the lowest rate. At age interval 8-12 weeks, Matrouh chicks came first followed by W.L., Silver Montazah and R.I.R. chicks. At age interval 12-16 weeks, R.I.R. chicks had the highest rate of growth followel by W.L., Matrouh and Silver Montazah .

It could be concluded that, while Matrouh and Silver Montazah chicks had higher rate of growth at advanced age intervals, R.I.R. and W.L. chicks had higher rate of growth at later ages .

## 3 - Chick viability :

Table 8 shows that Matrouh and W.L. chicks were more viable (up to 12 weeks of age) when fed diet cntaining 0.04 % Aflaban, while Silver Montazah and R.I.R. chicks were more viable when they were fed control diet at the same age.

Table 8. Viability of chicks fed diets containing different levels of Aflaban.

| Treatment | | Ages | Matrouh | S.M. | R.I.R. | W.L. |
|---|---|---|---|---|---|---|
| A2 | 0-4 | Weeks | 97.8+1.3 | 98.1+0.5 | 100.0+0.0 | 92.4+3.8 |
| B2 | 0-8 | Weeks | 97.4+1.0 | 98.1+0.4 | 100.0+0.0 | 89.8+4.0 |
| C2 | 0-12 | Weeks | 97.3+0.8 | 98.1+0.3 | 100.0+0.0 | 88.2+4.0 |
| | 0-4 | Weeks | 100.0+0.0 | 97.6+2.0 | 100.0+0.0 | 100.0+0.0 |
| | 0-8 | Weeks | 100.0+0.0 | 96.8+1.6 | 97.6+7.9 | 94.5+6.0 |
| | 0-12 | Weeks | 99.1+3.1 | 96.1+2.2 | 87.4+4.4 | 91.2+7.1 |
| | 0-4 | Weeks | 94.9+2.1 | 99.0+1.0 | 100.0+0.0 | 100.0+0.0 |
| | 0-8 | Weeks | 92.7+3.2 | 98.5+0.9 | 100.0+0.0 | 94.6+5.6 |
| | 0-12 | Weeks | 90.2+4.6 | 97.1+3.0 | 97.1+3.0 | 90.0+8.5 |

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# الاختلاف في معدل النمو وحيوية الكتاكيت بتأثير إضافة مضاد للفطريات في علائق الدجاج

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استخدم في هذه الدراسة سلالات مطروح ومنتزة فضي والرود ايلاند الاحمر واللجهورن الابيض ، وقسمت كل سلالة الي ٣ معاملات ( ٠,٠٠ ٪ ، ٠,٠٤ ٪ ، ٠,٠٨ ٪ أفلابان في العليقة) .

وقد تم تقسيم الكتاكيت الناتجة من كل من الأثنتي عشرة مجموعة بالتالي الي المعاملات الثلاث السابق ذكرها .

تمت دراسة معدل النمو وحيوية الكتاكيت ، كما تمت دراسة الاختلاف بين السلالات في هذا الصدد ، وتم الحصول علي النتائج الأتية :

١- أدت اضافة مضاد الفطريات (أفلابان) في علائق الأمهات الي تحسن هذه الصفات ، حيث ان الأمهات التي تمت تغذيتها علي عليقة بها ٠,٠٤ ٪ أفلابان أعطت كتاكيت اثقل وزنا من باقي المجموعات .

٢- كانت الكتاكيت المغذاه علي عليقة المقارنة اثقل من باقي المعاملات بغض النظر عن علائق الأمهات .

٣ – كانت هناك اختلافات بين السلالات في الصفات المدروسة حيث حققت السلالات المحلية نتائج افضل من السلالات الأجنبية وكانت اكثر كفاءة واكثر أستجابة لأضافة مضادات نمو الفطريات في علائقها .