THE EFFECT OF TERRAMYCIN ON LAYING HENS

By

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SUMMARY

This experiment involving 38 pullets of Fayoumi breed and 22 pullets of R.I.R. was conducted to investigate the effect of supplementary terramycin on the performance of laying hens, egg weight, body weight and mortality.

1.—The addition of terramycin at a level of 1 gram per 7 litres of drinking water did not affect the performance of laying birds. The average egg number of the birds fed the unsupplemented and the supplemented diet with terramycin in drinking water was approximately the same.

2.—Egg weight was slightly better on the additon of terramycin as compared with basal diet.

3.—The average increase in body weight ofFayoumi birds during the experimental period was 136.7 and 159.1 grams for the control and the terramycin groups respectively.

4.—No difference in livability that could be attributed to the treatment groups was indicated.

INTRODUCTION

There is disagreement among the results obtained at different stations on the effect of antibiotic on the egg production of chickens. Carven *et al* (1951) indicated that egg production of the pullets fed diet containing terramycin or aureomycin appears to be of no outstanding improvement. Paterson and Lampman (1952) and Lillie and Bird (1952) indicated that antibiotic did not improve the egg production. Berg *et al* (1952) found that terramycin had no effect on egg production and mortality, however they found that body weigt increased with the increasing level of terramycin. Fangauf *et al* (1959) stated that adding 10 and 50 mg. of aureomycin per kg. of feed did not produce more eggs, compared with unsupplemented diet, while body weight increased with the raising level of the antibiotic.

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Raafat *et al* (1962) indicated also that the addition of either penicillin, terramycin or aureomycin at different levels had no effect on egg production of local turkey birds, however, there was a slight increase in this respect of foreign turkey birds.

On the other hand Palloum (1954) and Haywang (1956) found that the addition of chlorotetracycline for the diet improved egg production. Lillie and Sizemore (1954) showed that supplementing a diet with an antibiotic improved egg production of low but not of high producing, New Hampshire birds. Boone *et al* (1957) found that aureomycin and terramycin was significantly higher in egg production than in control groups, however, the group with penicillin was similar to that of control. They stated also that body weight was better while egg weight was not affected. Querner and Staufenbiel (1959) and Mantel and Prill (1959) found that adding terramycin to the drinking water or to the rations gave slightly better egg yield and weight gains. Halma (1959) reported raising in egg yield by adding 35 p.p.m. of terramycin.

EXPERIMENTAL

Studies have been directed to determine the effect of terramycin on egg production for laying pullets. In this experiment, terramycin was examined as a feed supplement on the rate of lay, gain in body weight, egg weight and mortality.

Birds used in this experiment were Egyptian breed Fayoumi and Foreign breed Rhode Island Red pullets. All birds had been fed the same diet before starting the experiment except during the early breeding season. After the birds had been in egg production for some weeks, 38 pullets of breed Fayoumi and 22 pullets of breed R.I.R. were taken for the experiment. Birds of each breed were devided into two groups. Both groups received the basal ration as shown in table (1). This ration contains 16.62% crude protein, 13.14% digestible protein and 69.81% starch equivalent. The digestible protein and starch equivalent for corn, wheat bran, rice bran and decorticated cotton seed meal were taken from Animal and poultry nutrition, Ministry of Agriculture (1961) for blood meal and meat meal after Kellner (1926) and the digestible coefficient for corn gluten feed were taken from Morrison (1959). One group was treated as a control and the other group received the ration and the terramycin was added to the drinking water as 1 gm. per 7 litres. The test covered 4 months and was conducted from first October 1961 to first February 1962.

The initial weights of the two groups of each breed were equal and the pullets were weighed individually at a monthly intervals until the end of the experiment. The feed was offered to the birds *ad-libtum*

and the treated groups had a constant access for drinking water with terramycin. Green clover (Barseem) was given to the birds daily during December and January. Hens were trap-nested druing the experimental period. So individual egg production was collected and weighed to the nearest gram the morning after they were laid.

TABLE 1.—**Composition of the diet**

Ingredient	Percent
Ground yellow corn	40
Rice Bran	25
Wheat bran	10
Decorticated cotton seed meal	10
Maize gluten feed	5
Meat meal	3
Blood meal	2
Bone meal	2
Ground lime stone	2
Mineral mixture	0.5
Salt	0.5

Vitamin A. 0.5 kilogram per ton (each gram contains 10,000 I.U.).
Vitamin B. 1.0 kilogram per ton (each pound contains 4 gram Riboflavin, 4 gm. Pantathonic 24, gm. Niacin and 104 gm. Choline Chloride).
Manganise Sulphate 180 gm. per ton.

Crude protein	16.62%
Digestable protein	13.14%
Starch value	69.81%

RESULTS AND DISCUSSION

Egg Number

TABLE 2.—**Effect of supplementing terramycin on the number of egg produced**

Breed	Month Groups	Average number of eggs per months				
		Oct.	Nov.	Dec.	Jan.	Average
Fayoumi ..	Diet	8.0	12.5	6.0	12.1	9.6
Fayoumi ..	Diet+ Terramycin	5.2	14.1	7.7	10.6	9.3
R.I.R. ..	Diet	5.8	14.1	9.7	17.3	11.5
R.I.R. ..	Diet+ Terramycin	9.7	14.2	9.8	10.6	11.1

The egg production was low in October, then increased from November till the end of the experiment. However, there was a decline during December because of unfavourable weather. As could be seen from table (2) the terramycin did not retard the rate of seasonal decline in production which occured during December. The average nubmber of eggs per month for the control and the terramycin group were 9.6 and 9.3. for breed Fayoumi and 11.5 and 11.1 for R.I.R. respectively.

It is clear that the addition of terramcyin to the drinking water failed to promote egg production for both Fayoumi and R.I.R. birds.

Table (3) shows the analysis of variance of the average number of eggs as influenced by groups, breeds and months. The differences between groups and breeds were insignificant, while it was highly significant between months.

TABLE 3.—**Analysis variance of the average number of eggs as influenced by groups, bird and months.**

Source of variance	Degree of freedom	Sum of Square	Mean Square	F. (Value)
Between groups	1	0.8	0.80	0.199
Between breeds	1	14.1	14.10	3.51
Between months	3	123.6	41.20	10.2**
Error	10	40.2	4.02	—
Total	15	178.7	—	—

** Highly significant.

These results agreed wtih Carver *et al* (1951), Sunde *et al* (1952), Paterson and Lampman (1952), Lillie and Bird (1952), Berg *et al* (1952), Fanguaf *et al* (1959) and Raafat *et al* (1962). However, these results obtained are not in agreement with those of Palloum (1954), Haywang (1956), Querner (1959), Halma (1959) and Mantel (1959).

The average egg weight of the different groups are given in Table (4). For the Fayoumi breed it was 44.8 and 45.2 grams for the control and the terramycin groups respectively. For the R.I.R. it was 54.5 and 58.3 grams respectively. The average egg weight of the terramycin group was slight higher in Fayoumi, but the difference was more evidence in R.I.R. breed.

These results are not in agreement with those found by Boone and Morgan (1957).

Egg Weight

TABLE 4.—**Effect of terramycin on egg weight**

Breed	Month Groups	Average weight of eggs in grams				Total Aver.
		Oct.	Nov.	Dec.	Jan.	
Fayoumi ..	Diet	45.1	44.5	44.5	45.1	44.8
Fayoumi ..	Diet + Terramycin.. ..	43.9	45.3	44.7	46.2	45.2
R.I.R. ..	Diet	49.2	54.5	55.8	55.8	54.5
R.I.R. ..	Diet + Terraymcin.. ..	55.0	58.6	58.5	61.1	58.3

Body Weight

TABLE 5.—**Effect of supplementing terramycin on body weight**

Breed	Month Group	Average body weight in grams					Aver. Increase in Body Weight
		1st Oct.	1st Nov.	1st Dec.	1st Jan.	1st Feb.	
Fayoumi	Diet	1166.6	1267.1	1301.4	1335.8	1303.3	136.7
Fayoumi	Diet + Terramycih	1163.7	1294.3	1347.3	1400.3	1322.8	159.1

The average body weight of Fayoumi birds are shown in Table (5). Gradual increases in body weight were obtained in both control and terramycin groups. Birds reached their maximum body weight in *1st* January, but there was a decline afterwards. The average increase in body weight for control and trrramycin groups during the experimental period were 136.7 and 159.1 grams respectively. It could be seen that the increase in body weight was higher in terramycin group. These results agreed with those obtained by Berg *et al* (1952), Fangauf *et al* (1959), Querner and Staufenbiel (1959), Mantel and Brill (1959). Unfortunately the body weights for R.I.R. pullets were not recorded.

Mortality

The incidence of mortality was low averaging about 8.33 percent for the entire experiment in both Fayoumi and R.I.R. birds. The number of dead birds were 3 and 2 birds for terramycin and control group respectively averaging 10 and 6.6 percent in respect of this order. From these results it is clear that terramycin treatment had no effect on livability of the birds. Berg *et al* (1952) came to the same conclusion.

CONCLUSION

It can be concluded that, under the conditions of this experiment supplementing laying hens with terramycin in drinking water did not improve egg production.

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تأثير المضادات الحيوية (الترامیسين) على انتاج البيض فى الدجاج

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الملخص

أجريت تجربة لدراسة تأثير الترامیسين على انتاج البيض ووزن الجسم ونسبة النفوق على ٦٠ دجاجة منها ٣٨ دجاجة فيومى ، ٢٢ دجاجة رود ايلند رد بمحطة التربية بالدقى واستعمل الترامیسين بنسبة ١ جرام لكل سبعة لترات بماء الشرب وقد اتضح انه ليس للترامیسين تأثير على عدد البيض ونسبة النفوق فى نوعى الدجاج الفيومى والرود ايلاند رد ولكنه ادى الى زيادة وزن البيض زيادة طفيفة فى الفيومى وزيادة ملحوظة فى الرود ايلاند رد كما سبب زيادة فى وزن الجسم فى الدجاج الفيومى .