

EFFECT OF TWO COMMERCIAL ANTI-STRESS DRUGS ON THE GROWTH OF ARTIFICIALLY INDUCED STRESSED BROILERS

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ABSTRACT

The Study was carried out to evaluate the efficacy of anti-stress commercial drugs (Vitasol Super and Vitamionic-33) on growth of stressed broilers, at the Poultry Experimental Station, Sindh Agriculture University Tandojam during August-September, 1998. A-day old 150 chicks were equally housed in three groups that were A, B and C. In group "A" five grams Vitasol Super was added in 40 litres of drinking water, while in group "B" one gram of Vitamionic-33 was added in three litres of drinking water. Group "C" was kept as control, where no anti-stress drug was supplemented in water. Results revealed highly significant difference among weight gain of broilers fed on ration supplemented with different anti-stress drugs. Average weight gain of all groups A, B and C were 1796.50, 1899.80 and 1760.52 gms, respectively. Average feed consumption of different groups were 3830, 3859 and 3818 gms, respectively. Average feed conversion ratio of different groups A, B and C was 2.14, 2.03 and 2.17, respectively. The average dressing percentage of difference groups were 62.10, 64.52 and 61.60. Highly significant difference was observed in weight of internal organs of different groups. The average per kilogram of broilers profit of different groups were Rs. 10.49, 13.81 and 10.95, respectively. The birds of group B, which was, earned maximum profit given Vitamionic-33 (anti-stress drug). It was concluded that anti-stress vitamin (Vitamionic-33) at the rate of 5grams/40 litres of water *ad libitum* can be successfully used for better growth of broilers.

Key Words: Broilers, stress, anti-stress drugs

INTRODUCTION

Poultry industry plays a vital role in providing food for the rapidly growing population of Pakistan, it is because of commercial poultry farming to a large extent that country has been in a position to reduce gap between demand and supply of animal protein. This sector is still confronted with the many problems, which are hindering its progress, particularly problem of stress. The term stress is difficult to define, but most workers regards, stress is harmful condition resulting from the inability of the bird to maintain an adequate internal environment. In psychology and biology, any strain or interference that disturb the functioning of an organism. Stress may be due to moving, shifting, road transportation, climate, excessive physical efforts, pain, crowding, absence of bedding, nutritional disease and vaccination. Stress is a deciding factor between profit and loss to make poultry farming profitable.

In poultry birds, oral medication are preferred because its route of administration cause less stress to birds and is very convenient to the farmers. Antibiotics and Vitamins are mixed in feed or water for the treatment of stress. On the above hypothesis, this study was designed to investigate the effect of anti-stress drugs on growth rate of broilers.

MATERIAL AND METHODS

Six weeks experiment was conducted to evaluate the effect of commercial anti-stress drugs named Vitasol Super and Vitamionic-33 on the growth of broilers kept under artificially induced stress by weighing and shifting twice a day, at the Poultry Experimental Station, Sindh Agriculture University, Tandojam during August-September, 1998. A total 150 a-day-old chicks were kept in three groups i-e A, B and C having 50 birds in each unit.

Group A and B was given 5 gm of Vitasol Super in 3 litre drinking water and Vitamionic 33/3 litre of drinking water, respectively. Group C was kept as control.

All the managerial and environmental conditions were kept similar for each group. The commercial feed and ground water were given *ad libitum*. Weekly feed intake was recorded by subtracting the refused feed of the previous week from the feed offered. The chicks were protected against viral and bacterial diseases through vaccination.

The following observations were recorded through out the study period.

1. Initial and total Body weight.
2. Total feed consumption.
3. Feed conversion ratio.
4. Dressing

Percentage. 5. Weight of edible parts. 6. Weight of non-edible parts. 7. Profit

All the data thus collected were subjected to statistical analysis using analysis of variance. The difference between means were derived by using DMR (Duncan's Multiple Range) test.

RESULTS AND DISCUSSION

The results on initial body weight, final body weight, feed consumption, feed conversion ratio, dressing percentage, weight of edible and non-edible parts and per bird profit are presented in the Table 1-2.

vitamin. The analysis of variance (Table 1) showed statistically highly significant ($P < 0.001$) differences in weight gain among the groups. The results of present study are further supported by the findings of Kasim and Norziha (1995), Zakia, *et al* (1995), Jaffer and Blaha (1996) and Colin (1998), they reported that weight gain in broilers under stress condition could be improved by supplementing anti-stress drugs in water. The average feed consumed by different groups was 3830, 3859 and 3818 grams, respectively. The better feed conversion ratio was observed in group B which was 2.03. This ratio is due to better performance of anti-stress vitamin (Vitaminic-33).

Table 1: Statistical analysis of different groups reared on different anti-stress drugs.

| Parameters | Group | | | F Value | p- value |
|-----------------------------|---------|---------|---------|------------|----------|
| | A | B | C | | |
| Initial Body Weight(Grams) | 46.50 | 45.20 | 49.70 | NS | --- |
| Final Weight(Grams) | 1843.00 | 1945.00 | 1810.22 | --- | --- |
| Weight Gain(Grams) | 1796.50 | 1899.80 | 1760.52 | 212.443** | 0.001 |
| Feed Consumption(Grams) | 3830.00 | 3859.00 | 3818.00 | 11.697** | 0.001 |
| F.C.R | 2.14 | 2.03 | 2.17 | 70.492** | 0.001 |
| Dressing % | 62.10 | 64.52 | 61.60 | 5.815** | 0.001 |
| Liver Weight(Grams) | 51.24 | 52.04 | 50.04 | 3.2100** | 0.001 |
| Heart Weight(Grams) | 10.82 | 11.67 | 09.10 | 161.2194** | 0.001 |
| Gizzard Weight(Grams) | 31.90 | 33.02 | 31.57 | 2.0350* | 0.062 |
| Weight Of Legs(Grams) | 81.48 | 85.18 | 81.14 | 68.973** | 0.001 |
| Weight Of Skin And Feathers | 308.52 | 310.58 | 307.40 | 13.431** | 0.001 |
| Weight Intestine(Grams) | 110.48 | 150.39 | 105.60 | 2426.525** | 0.001 |
| Profit (Grams) | 10.49 | 13.81 | 10.95 | --- | --- |

Table 2: Economics of Different groups reared on different anti-stress drugs.

| Parameters | Group | | |
|---|-------|-------|-------|
| | A | B | C |
| a) Total per bird cost of feed (Rs) | 40.20 | 40.90 | 40.47 |
| b) Cost of anti-stress drug (Rs) | 01.75 | 2.45 | 00.00 |
| c) Cost of day-old chick (Rs) | 20.50 | 20.50 | 20.50 |
| d) Per bird Misc: expenditur (Rs) | 05.00 | 05.00 | 05.00 |
| e) Total Cost (a+b+c+d) Rs. | 67.45 | 68.85 | 65.97 |
| f) Total weight of bird in 42 days (Kgs) | 1.834 | 1.945 | 1.810 |
| g) Average sale price of per kilogram of live broiler | 42.50 | 42.50 | 42.50 |
| i) Total Income(f+g)Rs. | 77.94 | 82.66 | 76.92 |
| Per bird profit: Rs. | 10.49 | 13.81 | 10.95 |

After receiving the birds at the farm, the birds were weighed (group wise) by electrical balance, 46.50, 45.20 and 49.70 grams were recorded of all three groups A, B and C, respectively. At the end of experiment, 1843.00, 1945.00 and 1810 grams were observed in each group, it means 1796.50 grams by group A, 1899.80 grams by group B and 1760 grams gained by group C in seven weeks, respectively. The highest weight was obtained from group B, which is supplemented by Vitaminic-33 commercial anti-stress

The result on FCR are further supported by Dunn (1996), Ibrahim (1998), Patujo (1999) and Teeter *et al.* (1996), who concluded that the stressed broilers showed better carcass characters when they were fed on anti-stress drugs. 62.10, 64.52 and 61.60 dressing percent were recorded in groups, respectively. Group B showed better dressing percentage.

The highly significant difference was observed in weight of liver, heart, legs skin and feathers and intestine whereas the Significant difference was calculated in weight of gizzard among the groups. The

average profit of different groups was 10.49, 13.81 and 10.95 rupees, respectively. Table-3 indicate that broilers induced artificial stress and fed on ration B supplemented by Vitaminc-33 drug remained most economical either than the broiler fed on ration supplemented with Vitasol super proved more beneficial for improving the broilers performance under stress condition. This observation is in agreement with the finding of Siddiqui (2000), who suggested that Vitamin-C as anti-stress vitamin can be supplemented in drinking water for better profit business of broiler.

It was concluded from the present study that under stress conditions, commercial anti-stress vitamins play positive role, not only for survival but also for weight gain. Among anti-stress drugs (Vitaminc-33 and Vitasol Super). Vitaminc-33 proved to be more beneficial for improving the broilers performance under stress conditions. This vitamin can successfully be used to improve the performance of broiler under the natural stress condition.

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