

Effect of Herbal Immunodulator on Body weight gain in immunosuppressed broiler birds

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Abstract

The herbal immunomodulator was evaluated in immunosuppressed broiler birds in terms of body weight gain. The treatment with *Ocimum sanctum* and *Emblica officinalis* @ 3 gm /kg feed for 2 weeks were found to be effective immunomodulator in increasing body weight gain in broiler birds.

Keywords: Herbal, Immunodulator, Body Weight, Immunosuppressed, Broiler.

Introduction

Increase in pollution through air and water is a great problem to the poultry farmers. Even residual toxicity through feed due to extensive use of insecticides and pesticides on crops leading to immunosuppression in birds. As a result these birds are easily exposed to the infectious diseases. Immunosuppression also causes dysfunction of the liver leading to poor body growth and body weight gain in broilers.

In view of the above, the herbal immunomodulator was evaluated in terms of body weight gain in broiler birds.

Material and Methods

Eighty broiler birds of 3 weeks age (21 days) were divided equally and randomly into four groups. These birds were maintained at standard and identical conditions of management at poultry research center, Post Graduate Institute of Veterinary and Animal Sciences, Akola.

All the birds were immunosuppressed except normal control group with cyclophosphamide @ 150 mg/kg body weight IV once at 21 days of age. First group of birds was kept as normal control (T1) i.e. without immunosuppression and treatment. Second group (T2) of the birds was treated with *Ocimum sanctum* dry leaves @ 3 gm / kg feed for 2 weeks from 5th to 6th week (28 to 42 days). Third group (T3) was treated with *Emblica officinalis* dry fruit powder @ 3 gm / kg feed for 2 weeks from 5th to 6th week of age. Last group (T4) was treated with combination of *Ocimum sanctum* and *Emblica officinalis* @ 3 gm / kg feed each herb for 2 weeks.

Body weight gain in all birds was recorded from

4th week to 6th week of age at weekly interval (7 days). Data collected was analyzed with FCRD as described by Snedecor and Cochran (1994).

Results and discussion

The average weekly body weight gain in broiler / birds has been shown in table 1. the body weight gain was in the range of 269.55 ± 9.45 to 487.25 ± 17.64 gms indicating that normal birds (T1) shows maximum weight gain at 4th and 5th week of age as compared to immunosuppressed birds. In group T2, T3 and T4. It indicated reduction in weight gain due to cyclophosphamide administration resulted in stress condition and immunosuppression.

Subsequently after treatment with herbal immunomodulator, there was significant increase in body weight gain in the birds. The increase in body weight due to *Ocimum sanctum* treatment might be due to increased immune status of the birds resulting in better conversion of feed leading to more weight gain (Arneja *et al.*, 1987, Pimprikar, 1994, Pande and Vijay Kumar, 2003). The increase in body weight due to *Emblica officinalis* was also recorded. This increase in body weight gain might be due to the hepatoprotecting activity resulted into improvement in the liver function (Pande, 2000, Babu *et al.*, 2002, Ratan Kumar *et al.*, 2004). Combine treatment of *Ocimum sanctum* and *Emblica officinalis* (T₄) had no additive effect to each other in increasing body weight in immunosuppressed broiler birds.

Overall result in present investigation indicates that the broiler birds should be given supplementation of *Ocimum sanctum* and *Emblica officinalis* in the feed to protect the birds from immunosuppression and to achieve the required target of weight gain.

Table-1. Effect of *Ocimum sanctum* and *Emblca officinalis* on body weight gain (gms) in broiler birds.

Treatment	3 rd week	4 th week	5 th week	6 th week
T ₁ (Normal Control)	269.55 ± 9.45	417.25 ± 17.14	429.6 ± 24.15	487.25 ± 17.64
T ₂ (<i>Ocimum sanctum</i> treated)	289.95± 8.22	370.75 ± 31.01	388.50 ± 16.92	475.35 ± 15.20
T ₃ (<i>Emblca officinalis</i> treated)	278.45 ± 5.35	354.95± 29.00	398.85 ± 17.47	476.50 ± 14.32
T ₄ (<i>Ocimum sanctum</i> and <i>Emblca officinalis</i> treated)	276.25 ± 10.70	385.30± 25.50	391.25 ± 24.86	483.60 ± 13.14

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