EFFECT OF FEEDING DIFFERENT PROTEIN SOURCES ON IMMUNE STATUS IN COMMERCIAL BROILERS

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ABSTRACT : An experiment was conducted to study the effect of feeding different protein sources on carcass characteristics in commercial broilers. A total of 150, one-day-old cobb chicks were distributed into five treatment groups with three replicates in each group and 10 chicks in each replicate. Basal diet (T1) was prepared following BIS (2007) standards and the experimental diets were prepared by incorporating blood meal at 5 per cent (T2), fish meal at 5 per cent (T3), silkworm pupae meal at 5 per cent (T4) and meat meal at 5 per cent (T5). The results revealed no significant improvement in the immune response against Newcastle disease and Infectious bursal disease on the 42nd day of the experiment and also a non-significant difference in immune organ weight among all groups and control.

Key words : Blood meal, fish meal, silkworm pupae meal, meat meal.

INTRODUCTION

Livestock supplies meat, eggs, milk, and other products, making up 1/5th of the protein consumed by humans. Livestock feeding is based on corn and soybean meal as an energy and protein source. It has been predicted that between 2010 and 2025, livestock production will increase by 21%. If feed efficiency stays the same, this anticipated growth will necessitate an increase in the global feed supply from 6.0 to 7.3 billion tonnes of dry matter (Kim et al, 2019).

Animal-by-products provide nutrients with a financial advantage for the creation of poultry diets. However, each item of animal origin has its own unique nutritional properties, making the lack of uniformity of these nutrients a difficulty for nutritionists (Xavier et al, 2011).

The sources of dietary blended fish protein and the levels of metabolizable energy had no main or interaction effects (p > 0.05) on the humoral immunity of the broiler birds against Newcastle and Infectious bronchitis diseases (Hossain, 2021).

The control group was fed with basal diet containing 3% fishmeal and the treatment group 1, 2 and 3 were fed a basal diet with 30%, 60% and 100% fishmeal substituted with fermented silkworm pupae (FSP), respectively, the results showed that FSP addition could improve the thymic index of broilers at both at 21 and 42nd day. Among the above treatments, treatment 3 reached a significant level (P < 0.05) as compared to the control thymic index (Zhao et al, 2022).

MATERIALS AND METHODS

A total of 150 one-day-old commercial broiler chicks were procured from Venkateshwara Hatcheries Ltd., All the chicks were weighed and wing banded individually. The chicks were allocated to five different treatment groups each consisting of three replicates with 10 chicks each (30 chicks per treatment). Each of the treatment groups were fed with different types of experimental diets. The control group T1 was fed soybean meal as protein in the basal diet as per BIS (2007) standards. The treatment groups T2, T3, T4 and T5 were fed with 5% of blood meal, 5% of fish meal, 5% of silkworm pupae meal and 5% of meat meal, respectively. T2, T3, T4 and T5 diets were formulated to meet isocaloric and isonitrogenous by manipulating the test diet inclusion level...
different protein source groups compared to control at the end of the experiment (42nd day).

REFERENCES


