Effect of GenoLiv on production performance, carcass characteristic, organ weight and immune response in commercial broiler chickens

Introduction

The health and productivity of poultry is largely influenced by feed utilization, body weight, absence of disease and mortality. These can be directly attributed to liver health. The liver is a vital organ actively involved in many metabolic functions and is an easy target for several diseases and toxicants (Meyer and Kulkarni, 2001). Synthetic drugs, conventionally used in treating liver diseases, have significant limitations and can have serious side effects (Rao et al., 2006). Many medicinal formulations in Ayurveda are recommended to treat liver disorders (Chatterjee, 2000). Inclusions of such plant based formulations in broiler diets enables enhanced growth and performance. Improved performances were recorded in broilers by feeding herbal liver tonics (Tollba et al., 2010).

The objective of the study was to evaluate the effect of GenoLiv – a plant based hepatostimulant, on production performance, carcass characteristic, organ weight and immune response in commercial broiler chickens. The trial was conducted for a duration of 35 days on VenCobb 430 Y chickens at Krantisinh Nana Patil College of Veterinary Sciences (KNPCVS) Shirwal, Satara, Maharashtra Animal & Fishery Sciences University Maharashtra, India.

Experimental Design

Groups	Treatment Details	Replicates/ Treatment	Birds/ Replicate	Birds/ Treatment
T1	Basal Diet	3	30	90
T2	Basal diet with GenoLiv @ 0.25 kg/MT feed	3	30	90
Total Number of Birds				180

Statistical Analysis

All the values were expressed as mean ± SEM (standard error of the mean). Statistical analysis of the experimental data was carried out according to the method described by Snedecor and Cochran (1994).

Results

Effect of GenoLiv on Performance Parameters

Groups	Body Weight Gain (gm)	FCR	EPEF
T1	1584.34±75.46	1.74±0.03	261.77±16.77
T2	1731.25±31.25	1.63±0.03	312.02±10.79

*EPEF: European Production Efficiency Factor

GenoLiv exhibited better weight gain and feed conversion ratio (FCR) by optimizing nutrient metabolism in the liver and by improving the immune status as compared to the control group. Moreover, GenoLiv improved the total performance indices (EPEF) by enhancing overall liver function.

Effect of GenoLiv on carcass characteristic and organ weight

Groups	Fat Pad (%)	Liver Weight (gm)
T1	1.51±0.20	43.08±2.39
T2	1.34±0.19	37.36±1.24

GenoLiv efficiently improves fat metabolism and promotes lean meat deposition in carcasses.

Effect of GenoLiv on immune response

Groups	HI titre (mean Log10 antibodies/mL)
T1	2.91 ± 0.06^{a}
T2	3.21 ± 0.06^{b}

Means bearing different superscripts within the column differ significantly ($p<0.05$).

GenoLiv significantly enhanced the antibody titre for Newcastle Disease. The bioactive compounds in GenoLiv (flavonoids and alkaloids) are known to improve immune status of birds and animals.

Conclusion

GenoLiv, at a dose level of 0.25 kg/MT feed, positively influenced the overall performance (EPEF) and immune status of broiler birds. GenoLiv enhanced weight gain by 9.28%, FCR by 6.32% and EPEF by 19.2%. GenoLiv reduced the fat pad by 11.25% consequent to increased lipid metabolism. It can be concluded from the study that use of GenoLiv, a plant based heapatostimulant, has a positive impact on the hepatic health and performance of commercial broiler birds.

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