(IJRMST) 2016, Vol. No. 2, Jul-Dec

# EFFECT OF HERBAL LIVER STIMULANTS ON CARCASS CHARACTERISTICS IN COMMERCIAL BROILER CHICKEN

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Part of MVSc. Thesis submitted by first author to G.B. Pant University of Agri. & Tech., Pantnagar

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## ABSTRACT

Three research coded herbal liver stimulants (B, C and D) were fed to Vencob broilers distributed randomly in four groups of 100 chiks each from day old to six weeks of age. The rate of supplementation was 500,500 and 250 g/ton of feed respectively. After six weeks, the crcass characteristics study revealed that Dressed weight, Eviscerated weight and Drawn weight percentages were highest in  $T_2$  group. The Giblet weight percentages in treatment groups was significantly higher than control group. Overall it was observed that diets supplemented with liver stimulants did not show any definite carcass yield trend compared to control diet.

### **INTRODUCTION**

Performance of broilers primarily depends on the quality or the genetic make up of the stock and secondarily on management systems. The carcass characteristics are among the important production traits of broilers directly related to achieve higher profitability of broiler production (Devegowda *et al.*, 1989; Narahari, 1995). Many herbal liver stimulants have been found helpful in achieving higher performance and profitability of broiler chicken largely by improving feed conversion efficiency, mortality and carcass characteristics (Babu *et al.*, 1992). The present study was undertaken with the objectives to assess the comparative efficacy of three herbal liver stimulants in commercial broiler chicken on carcass characteristics. The liver stimulants were given as coded formulation from day old to six weeks of age under deep liter system.

### **MATERIAL AND METHODS**

Four hundred, day old broiler chicks of Vencob strain were wing banded, weighed individually and divided randomly into four groups of one hundred each. The groups were designated as  $T_1$ (Control),  $T_2$  (Control + herbal liver stimulant 'B' @ 500g/ton of feed),  $T_3$  (Control + herbal liver stimulant 'C' @ 500g/ton of feed) and  $T_4$  (Control + herbal liver stimulant 'D' @ 250g/ton of feed). The chicks were kept in brooders for first three weeks and then transferred into separate pens and maintained under identical managemental and housing conditions. The composition of liver tonics in shown in Table 1. For first three weeks broiler starter ration (with 22.2% crude (IJRMST) 2016, Vol. No. 2, Jul-Dec

e-ISSN: 2455-5134, p-ISSN: 2455-9059

protein and 2800 Kcal ME/kg diet) followed by broiler finisher ration (with 20.0% crude protein and 2900 Kcal ME/Kg diet) fed for later half of the experiment. All mash feeding system was followed in the experiment. To study the carcass traits, five representative birds from each group were slaughtered at the end of the experiment. The birds were kept off feed for 12 hours prior to slaughter. Among the carcass traits, dressed weight, eviscerated weight, drawn weight and giblet percentages were calculated. The weight obtained within different groups were averaged. The data obtained was analyzed statistically according to Snedecor and Cochran (1967) to test the effect of treatments.

## **RESULT AND DISCUSSION**

The results of average Dressed weight, Eviscerated weight and Drawn weight percentage in different treatment groups are presented in table 2. The Dressed weight study revealed a highly significant difference (P<0.01) between various treatment means. However, critical difference test revealed a non-significant difference amongst  $T_1$ ,  $T_3$  and  $T_4$ . Group  $T_2$  was found to have maximum dressed weight percentage with significant difference from  $T_3$  group. No definite trend could be observed in dressed weight percentage for various treatment groups.  $T_1$ , the control group which did not receive any herbal product also fell in the same category of treated groups. Thus, it could be said that herbal components did not have much influence on dressing percentage.

The results of average Eviscerated weight percentage also revealed that though the treatment means were significant (P<0.01) but there was non-significant difference between T<sub>4</sub> & T<sub>3</sub>, although T<sub>1</sub> and T<sub>2</sub> were significantly higher from T<sub>4</sub>, with Group T<sub>2</sub> was found to have maximum dressed weight percentage. There is a non-significant difference between T<sub>3</sub>, T<sub>1</sub> and T<sub>2</sub>. In this case also, no definite trend was observed for which the explanation given in case of dressed weight probably holds true. The reports of Dressed weight % and Eviscerated weight % are in close confirmation with the reports of Sundararasu *et al.* (1985) and Sapra and Mehta (1990) respectively.

The average Drawn weight percentage and analysis of variance showed significant difference among various treatment means without any trend, for which at this juncture no explanation could be given. It was highest in group  $T_2$  with significant difference from  $T_4$  group. This may be because of the fact that probably in the present investigation, the carcass study was limited to twenty birds only amounting to only five birds in each treatment group. The data being small, is liable to have some sampling errors. These results are in agreement with those reported by Dakshinkar *et al.*, 1985.

The average Giblet weight percentage in different treatment groups are presented in Table 3. The study indicated significant differences (P<0.01) in treatment means where control group had significantly lower values as compared to  $T_4$ ,  $T_2$  and  $T_3$  groups. However, the difference amongst  $T_4$ ,  $T_2$  and  $T_3$  groups was non-significant. The giblet weight percentage along with individual components i.e. liver, heart and gizzard weight did not show any definite pattern. These reports are in close agreement with reports of Sapra and Mehta (1990). Al-Kassie and Witwit (2010) also observed no significant differences in giblet weight between control and experimental groups provided with mixtures of herbal plants. Thus, it is concluded from the present trial that use of

(IJRMST) 2016, Vol. No. 2, Jul-Dec

e-ISSN: 2455-5134, p-ISSN: 2455-9059

herbal liver stimulants improved the Dressed weight, Eviscerated weight and Drawn weight percentage in commercial broilers, with highest percentages in Group T<sub>2</sub>. For Giblet weight percentage, the control group had significantly lower values as compared to  $T_4$ ,  $T_2$  and  $T_3$  groups. Overall, the group T<sub>2</sub> with coded liver stimulant 'B' was found to show the maximum effect on carcass traits, although no definite trend could be observed for various treatment groups.

Liver stimulant	Composition		
	Amalaki ( Emblica officinalis)		
	Arjuna ( <i>Terminalia arjuna</i> )		
B & C*	Harikari (Terminalia chebula)		
	Nimba (Azadirachta indica)		
	Katurohinee (Picrorhiza kurroa)		
	Kalmagh (Andrographis paniculata)		
	Makoi (Solanum nigrum)		
	Punarnava (Boerrhavia diffusa)		
	Guduchi (Tinospora cordifolia)		
D	Spirulina and above mentioned ingredients of B & C		

#### Table 1. Ingredients of coded liver stimulants

\* The quantities of ingredients are different in each formulation

Table 2. Average Dressed weight, Eviscerated weight and Drawn weight percentage in different treatment groups:

Treatment	Dressed Weight (%)	Eviscerated Weight (%)	Drawn Weight (%)	Giblet Weight (%)
$\begin{array}{c} T_1\\ T_2\\ T_3\\ T_4 \end{array}$	80.24 <sup>ab</sup>	66.76 <sup>a</sup>	71.97 <sup>ab</sup>	5.238 <sup>b</sup>
	80.80 <sup>a</sup>	66.88 <sup>a</sup>	72.32 <sup>a</sup>	5.466 <sup>a</sup>
	79.50 <sup>b</sup>	66.63 <sup>ab</sup>	72.20 <sup>a</sup>	5.576 <sup>a</sup>
	80.50 <sup>ab</sup>	65.76 <sup>b</sup>	71.30 <sup>b</sup>	5.54 <sup>a</sup>

Table 3. Analysis of variance for Dressed weight, Eviscerated weight and Drawn percentage in different treatment groups

Source of Variation	def.	Mean Squares			
		Dressed Weight	Eviscerated Weight	Drawn Weight	Giblet Weight
Between Treatment	3	1.545**	1.2936**	1.050**	0.1151**

International Journal of Research in Medical Sciences and Technology

http://www.ijrmst.com

(IJRMST) 2016, Vol. No. 2, Jul-Dec

Error	16	0.2945	0.2502	0.2310	0.00638

#### ACKNOWLEDGEMENT

The authors express their thanks to M/s Dabur Ayurvet Limited, Ghaziabad for supplying test drug samples to carry out this study.

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