Research Paper Zoology

Effect of Bael (Aeglemarmelos) and Giloy (Tinosporacordifolia) alone and in combination on Performance Indexof broiler chicks.

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ABSTRACT

The present study was conducted to ascertain the effect of inclusion of herbs i.e., Bael (Aeglemarmelos) and Giloy (Tinosporacordifolia) alone and in combination at different levels in the ration of broiler chicks to evaluate the effect of feeding of herbs as feed additive on Performance Index of broilers. A feeding trial of six weeks was conducted, using Bael, Giloy and their combination at 0.5, 1.0 and 1.5 % levels, using 300 broiler chicks (cobb-400) in completely randomized block design. The experimental starter and finisher rations contained 22.40 and 21.10% C.P, respectively andPerformance Index was recorded. The investigation revealed significant effect of dietary treatments i.e., incorporation of Bael, Giloy and their combination at different levels on Performance Index of broilers.

KEYWORDS

Introduction

Presently, Poultry industry has grown briskly in country, due to its low capital investment, early assured returns, short generation intervals and limited land requirements. Feed additives are commonly described as non-nutrient substances which accelerate growth, efficiency of feed utilization, beneficial for health or metabolism of the animals (Church and Pond, 1988). Feed supplement or additive is a substance or mixture used in minor quantity other than basic feed in order to complement certain nutrients for improving performance of birds (Narhari, 1992).

A number of herbs have been identified for their use as feed additive including Bael (*Aeglemarmelos*)andGiloy (*Tinosporacordifolia*) which in turn may improve the performance of birds.Abdelsamie *et al*., (1983) and Oke and Oke (2007) revealed that saw dust,also known as Bael(*Aeglemarmelos*) is a good source of dietary fibre in poultry.The ripe fruit helps in digestion and is very helpful in treating inflammation of rectum. The ripe fruit extract also having antiviral activity against ranikhet disease virus (Mazumdar, 1995). Powder of unripe fruit effectively work on intestinal parasites and also effective against *Entamoebahistolytica*and *Ascarislumbricoides*(Trivedi *et al*., 1978).Baelhas been used in ethno medicine due to its medicinal properties including astringent, antidiarrheal, antidysenteric, demulcent, antipyretic and anti-inflammatory activities (Maity *et al*., 2009).

Giloy(*Tinosporacordifolia*) is well known Indian bitter and effective in fever, diabetes, dyspepsia, jaundice, urinary problems, skin diseases and chronic diarrhoea and dysentery (Misra *et al*., 1969). *Tinospora* has also been effectively useful in the treatment of leprosy, helmenthiasis,heart diseases and rheumatoid arthritis (Misra *et al*., 1969, Sharma, 1969, Shah and Nighantu 1969).

Material and Methods

The trial was conducted with three hundred day-old, unsexed, apparently healthy broiler chicks (Cob-400 strain) procured from commercial hatchery (Ajmer). Routine vaccinations against Infectious Bursal Disease were carried out on 7th and forRanikhet disease (F_1 strain) on14th day of procurement of chicks.All the chicks were individually weighed, wing banded, and randomly divided into ten groups of 30 chicks each having almost similar average body weight. Each group of 30 chicks was further subdivided into two groups having 15 chicks each and were reared in 20 separate, clean and disinfected deep litter brooder houses.

Dry and Fresh wheat straw was used as bedding material. Identical standard managemental practices regarding brooding, feeding, watering and disease control etc. were followed for each group during the course of study. Commercially available readymade broiler starter and broiler finisher rations were procured and feed additives such as Bael (*Aeglemarmelos*) and Giloy (*Tinosporacordifolia*) were supplemented. Experimental starter rations were offered up to 3 weeks of age and thereafter experimental finisher rations were offered up to 6 weeks of age as per the treatments to the respective groups. Considering the feed efficiency as well as the growth rate, a performance index was obtained for each treatment by dividing the average weight gained by the feed conversion ratio.

$$\text{Performance Index (PI)} = \frac{\text{Body weight gain (g)}}{\text{Feed conversion ratio}}$$

Data collected during the present investigation were subjected to statistical analysis by adopting appropriate methods of analysis of variance as described by Snedecor and Cochran (1994). Wherever, the variance ratio (F-values) were found significant at 5 per cent and 1 per cent levels of probability, the significance of mean differences were tested by Duncan's New Multiple Range Test (Duncan's Range Test) as modified by Kramer (Kramer 1956).

Results and Discussion

The statistical analysis of variance shown in table1 revealed highly significanteffect of supplementation of Bael and Giloy in broiler ration at IV, V and VI week and significant effect on overall performance of six weeks. The overall mean performance index calculated for all the treatment groups for entire period of six weeks upon comparison ofmeans revealed to be highest for B_2G_2 and lowest for control which was comparable with B_3G_3, B_1, G_3 and B_1G_1. The mean performance index calculated for rest of the groups was significantly higher than control. An increase in performance index with increase in level of Bael from 0.5 to 1.5% and decrease in performance index with increase in level of Giloy alone from 0.5 to 1.5% was observed. Whereas, in case of combination the highest performance index was observed for 1% supplementation. The results obtained in present study are in line with the findings of Das *et al.*, (2001), Al-Sultan (2003), Rekhate *et al.*, (2010), Dwivedi(2013) recorded similar effects on performance index due to supplementation of herb in the poultry ration.

Table 1 Effect of Bael and Giloy on Performance Index at different weeks

Main effects	Week							
	0-I	I-II	II-III	III-IV	IV-V	V-VI	I-VI	
B_1	90.54	52.49^{bc}	278.30^{bc}	198.25a^{b}	195.43^{a}	194.64^{a}	168.28^{a}	
B_2	84.53	68.66^{d}	251.20^{b}	309.87^{e}	291.76^{de}	288.39^{d}	215.69^{ce}	
B_3	96.47	63.20^{cd}	417.59^{e}	289.94^{e}	288.10^{d}	279.43^{d}	239.12^{ef}	
G_1	94.94	51.92^{bc}	353.05^{d}	278.59^{d}	268.36^{ce}	256.27^{c}	217.19^{d}	
G_2	96.38	52.38^{b}	361.56^{d}	244.65^{c}	255.19^{c}	249.09^{bc}	209.88^{bc}	
G_3	93.84	65.45^{d}	285.62^{bc}	205.78^{b}	219.20^{ab}	218.08^{ab}	181.33^{a}	
B_1G_1	91.92	49.68^{ab}	217.77^{a}	279.88^{d}	237.49^{bc}	238.49^{bc}	185.88^{ab}	
B_2G_2	91.38	48.40^{ab}	222.52^{a}	365.18^{f}	444.82^{f}	398.63^{e}	261.82^{f}	
B_3G_3	96.70	50.47^{b}	306.96^{c}	213.35^{b}	202.64^{a}	202.43^{a}	178.76^{a}	
C	95.47	39.07^{a}	248.50^{ab}	183.16^{a}	253.30^{c}	188.54^{a}	168.01^{a}	
SEM	7.921	3.58	16.1	8.25	9.81	9.62	7.75	

a, b, c, d, e, f, g - Means superscripted with different letters within a column differ significantly from each other.

Table 1 (a)Analysis of variance for Performance Index at different weeks

Source of Variation	DF	Age in Weeks						
		MEAN SQUARES						
		0-I	I-II	II-III	III-IV	IV-V	V-VI	I-VI
Herbs	9	28.6401	161.148	8585.25*	6694.773**	10091.01**	7713.039**	1989.72*
Remainder	10	627.45	127.93	2582.66	680.214	961.644	925.258	601.193

* = Significant (P < 0.05) ** = Highly Significant (P < 0.01)

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