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Effect of different herbal feed additives on feed efficiency in broilers

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Abstract

In present investigation entitled 250 day old straight run commercial broilers chicks were randomly distributed into five treatment T₁, T₂, T₃, T₄, and T₅ with 50 numbers of chicks in each groups. Coriander powder (CP) and Tulsi powder (TP) were used in experimental ration at different levels. The dietary treatments consisted of one basal control (T₁), supplemented with 1% CP (T₂), 2% CP (T₃), 1% TP (T₄) and 2% TP (T₅). The average total weekly feed consumption gram/bird during the experimental period at end of sixth week were recorded as 1085.17, 1077.01, 1017.86, 1063.60 and 1068.64 for T₁, T₂, T₃, T₄, and T₅ treatments groups, respectively. The cumulative feed consumption at sixth weeks of age were 3965.30, 3891.22, 3832.35, 3877.91 and 3794.77 gms, respectively in T₁, T₂, T₃, T₄, and T₅ treatments groups. The average weekly feed efficiency at sixth week age were 2.32, 2.32, 2.11, 2.02 and 2.00 in T₁, T₂, T₃, T₄, and T₅ treatments groups, respectively. The net profit per bird was highest in T₅ (Rs. 16.33) followed by T₃ (Rs. 15.10), T₄ (Rs. 10.84), T₂ (Rs. 10.44) and lower in T₁ (Rs. 4.99).

Keywords: Herbal feed additives, feed efficiency, broilers

Introduction

Poultry is one of the fastest growing segments of the agricultural sector in India today. India has emerged on the world poultry map as the 3rd largest egg (56 billion eggs) and 5th largest poultry meat (2.6 million tons) producer. Total chicken population has registered an annual growth of 7.3% in the last decade. Organized sector accounts for nearly 70% of the total poultry output in the country. The current strength of layers and broilers in India is estimated to be 230 million and 2300 million, respectively. Poultry processing has also gone up to 20% of total broiler production.

Objectives of study

1. To study the feed efficiency of different herbal feed additives on the growth performance of broilers.
2. To assess the cost of feeding with different herbal feed additives in broiler.

Methodology

Procurement of Coriander Powder (CP) and Tulsi powder (TP)

The Tulsi Powder and Coriander Powder were procured from local market of Akola (Maharashtra State) as feed additives.

Selection of experimental chicks

For the present study 250 chicks of day old age, commercial straight run broiler chicks of strain were procure from Khadkeshwar Hatcheries Pvt. Limited, Aurangabad, Maharashtra. Chicks were weighed and distributed randomly in to five treatment groups viz, T₁, T₂, T₃, T₄ and T₅ with 50 chicks in each group having uniform weight.

Details of dietary treatment

- T₁ - Standard broiler ration (SBR)
- T₂ - SBR+ 1% Coriander
- T₃ - SBR + 2% Coriander
- T₄ - SBR + 1% Tulsi
- T₅ - SBR + 2% Tulsi

Result and discussion

Cumulative weekly feed consumption

Table 1: Average cumulative feed consumption (g/bird) in broilers

Treatment	1 st week	2 nd week	3 rd week	4 th week	5 th week	6 th week	Treatment mean
T1	120.62	442.27	980.39	1832.38	2880.13	3965.30	1703.52
T2	118.08	431.29	954.83	1780.26	2814.21	3891.22	1664.98
T3	117.20	430.49	949.51	1747.87	2768.74	3832.35	1641.03
T4	120.07	434.84	956.21	1784.04	2809.27	3877.91	1663.72
T5	119.52	430.31	946.79	1769.73	2776.91	3794.77	1639.67
Week mean	119.10	433.84	957.55	1782.85	2809.85	3872.31	

Source	Treatment (A)	Week (B)	Interaction (A x B)
'F' test	Sig	Sig	Sig
SE(m) _±	6.68	7.32	16.38
CD	9.45	10.36	23.17

It was observed from table 1 that cumulative feed consumption at sixth weeks of age were 3965.30, 3891.22, 3832.35, 3877.91 and 3794.77 gms, respectively in T₁, T₂, T₃, T₄, and T₅ treatments groups. The cumulative feed consumption of broilers for the treatment groups was lesser as compared to control.

The cumulative weekly feed consumption for broiler was found to be significant within treatment groups. The

interaction between (Treatment x Week) for weekly cumulative feed consumption of broilers was significant. The feed intake of all the chicks receiving CP and TP was lower than of control and there was a linear decrease with the level of addition.

Weekly Feed efficiency

Table 2: Weekly feed efficiency in broilers

Treatment	1 st week	2 nd week	3 rd week	4 th week	5 th Week	6 th week	Treatment mean
T1	1.21	1.36	1.55	1.80	2.00	2.32	1.71
T2	1.19	1.29	1.52	1.58	1.98	2.32	1.65
T3	1.16	1.21	1.42	1.58	1.82	2.11	1.55
T4	1.21	1.36	1.41	2.07	1.78	2.02	1.64
T5	1.19	1.35	1.66	1.59	1.71	2.00	1.58
Week Mean	1.19	1.31	1.51	1.72	1.86	2.15	

Source	Treatment (A)	Week (B)	Interaction (A x B)
'F' test	Sig	Sig	Sig
SE(m) _±	0.028	3.08	6.89
CD	0.07	8.54	0.19

It was noticed from table 2 that average weekly feed efficiency at sixth week age were 2.32, 2.32, 2.11, 2.02 and 2.00 in T₁, T₂, T₃, T₄, and T₅ treatments groups, respectively. The FCR was found to be statistically significant for different treatment groups during 2nd, 3rd, 4th, 5th and 6th weeks.

Economics of broiler production

The economics of broiler production was estimated by, considering the total amount of feed consumed by broilers under T₁, T₂, T₃, T₄, and T₅ treatments groups and other inputs such as cost of day old chicks, Coriander powder (CP) and Tulsi Powder (TP) as feed additive, medicine, vaccines, litter material.

It may be seen from values in Table 3 that the cost of feed in T₂, T₃, T₄ and T₅ increased in accordance with the level of addition of CP and TP. Moreover, broilers in treatment groups T₅ gained highest body weight (2320 gms) with feed cost (Rs. 119.13) and control group gained weight (2178 gms) with feed cost (Rs. 120.53).

The net profit per bird was highest in T₅ (Rs. 16.33) followed by T₃ (15.10), T₄ (10.84), T₂ (10.44) and lower in T₁ (Rs. 4.99) as indicated in table 8. Broiler in T₂, T₃, T₄ and T₅ group consumed lower feed per Kg live weight as compared to control T₁ group which gained lower average body weight at the end of six week. This indicated that broilers in group T₃ (CP) and T₅ (TP) showed better feed utilization as compared to the broilers in control group.

Table 3: Economics of broiler production

S. No.	Particulars	T ₁	T ₂	T ₃	T ₄	T ₅
1.	Cost of day old chick (Rs.)	23	23	23	23	23
2.	Cost of feed (Rs/kg)	30.40	30.40	30.40	30.40	30.40
3.	Cost of CP and TP (Rs)	0	1.00	0.80	0.50	0.40
4.	Total cost of feed (Rs/kg)	30.40	31.60	32	30.90	31.60
5.	Average total feed consumed per bird (Kg)	3.965	3.891	3.832	3.877	3.794
6.	Cost of feed consumed per bird (Rs.)	120.53	119.84	119.24	119.79	119.13
7.	Average body weight at the end of 6 th week (Kg)	2.178	2.246	2.304	2.251	2.320
8.	Feed consumption per kg live weight gain (Kg)	1.820	1.723	1.658	1.722	1.635
9.	Cost of feed per kg live weight gain (Rs.)	55.34	53.35	51.75	53.22	51.34
10.	Rearing Cost per bird (Rs.)	4.94	4.94	4.94	4.94	4.94

11.	Total cost of production (Rs.) (1+6+10)	147.47	146.78	146.18	146.73	146.07
12.	Average price realized @ Rs. 75 per kg live weight (Rs.)	152.46	157.22	161.28	157.57	162.4
13.	Net profit per bird (Rs.) (12-11)	4.99	10.44	15.10	10.84	16.33

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