



Effect of different herbals feed additives on body weight gain and dressing percentage of Giriraja poultry birds

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ABSTRACT : The present investigation entitled “effect of different herbals feed additives on body weight gain and dressing percentage of Giriraja poultry birds” was carried out to assess the effect of feeding coriander and *Tulsi* seed powder on body weight gain and dressing percentage, during 2016-17 at Department of Animal Husbandry and Dairy Science, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola. 125 chicks of day-old straight run commercial Giriraja breed were procured from Govt. hatchery. They were randomly and equally distributed in to five dietary treatments consisted of on basal control (T_1) (untreated group), supplemented with one per cent coriander seed powder (T_2) 2 per cent coriander seed powder (T_3), 1 per cent *Tulsi* seed powder (T_4) and 2 per cent *Tulsi* seed powder (T_5). The significant difference in weekly body weight gain was found only on third week. But in cumulative live body weight gain the significant difference was observed from second week on ward. The trend of significantly better growth and gain in cumulative was recorded in T_1 (1063.42), T_2 (1157.78), T_3 (1200.56), T_4 (1182.16) and T_5 (1229.15) groups during second to seventh week. Average weekly cumulative live body weight gain as treatment mean was calculated as 512.99, 548.75, 572.54, 564.27 and 585.75 for treatment T_1 , T_2 , T_3 , T_4 and T_5 , respectively. The average dressing percentage among the different treatment groups was recorded as 63.36, 65.39, 67.78, 66.37 and 68.32 per cent for treatment T_1 , T_2 , T_3 , T_4 and T_5 , respected. The effect of coriander and *Tulsi* seed powder feeding on dressing percentage was found to be beneficial and positively effect on dressing percentage of poultry birds. Supplementation of 2 per cent *Tulsi* seed powder was found more beneficial to live body weight gain and dressing percentage of Giriraja poultry birds.

KEY WORDS : Giriraja, Herbal, Body coriander, *Tulsi* seed powder, Weight gain, Dressing percentage

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INTRODUCTION

Poultry farming is the raising of domesticated birds such as chickens, Duck, Turkey and Gees for the purpose of meat or eggs for feed. Poultry industry is a fast

growing segment of the agriculture sector in the world. Modern intensive poultry industry demands more rapid growth in a confined housing environment which leads to greater susceptibility to stress in broilers. The importance of backyard poultry is well recognized by Government of India and special programmes are formulated for its promotion. Hence, efforts have been diverted into producing dual purpose native hybrids with improved production profiles. These hybrids are readily accepted by the rural farmers owing to their phenotypic appearance of the local birds. Hence, the introduction of different exotic crossbreds like Vanraja, Giriraja, Grampriya, etc.

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has generated new opportunities for poultry production in rural areas. These breeds grown fast and produce more number of eggs, require low input (like feed, management, health care, housing etc.) and sustain different vagaries of climatic and environmental changes (Thiruvankadan *et al.*, 2010).

Feeding of additives herbals to poultry are that they cause the intestinal tract health and suppress harmful bacterial growth in the digestive system, counteract adverse effect of antibiotics, nutrient synthesis, stimulate immune system, decreased diarrhea and mortality. Further, they improve the feed intake, feed conversion ratio, body weight and lower cholesterol in blood, serum and meat, and increase the tenderness and meat quality along with carcass yield. So that feeding of herbal additives is highly beneficial for economic production of poultry.

Coriander has used as a medicine for thousands of years and is still used in folk medicine. As a medicinal plant, coriander has been used to manage disease, used as an antifungal, antioxidant, hypolipidemic, antimicrobial, hypocholesterolemic and anticonvulsant substance. In addition, it has appetizing and stimulatory effects in the digestion process. (Chithra and Leelamma, 1997). *Tulsi* is identified by (Rama and Krishna *Tulsi* varieties) or more recently *Ocimum tenuiflorum* and *Ocimum gratissimum* (Vana *Tulsi* variety) belonging to the Lamiaceae/Labiata mint family, these and other closely related species and varieties (e.g., *Ocimum canum*) are cousins of the familiar sweet basil cooking herb *Ocimum basilicum*. In parts of India, all of the basil are honoured as *Tulsi* (Padalia and Verma, 2011). The growth promoting feed additives create optimum condition for normal growth by acting in various ways. The successful use growth promoting feed additives will fetch more profit. In view of this, the present investigation entitled “effect of different herbals feed additives on the growth performance of Giriraja poultry birds” was planned and undertaken with the major objectives, to find out the effect on body weight gain and dressing percentage of these herbal in Giriraja poultry birds.

MATERIAL AND METHODS

The present investigation entitled “effect of different herbals feed additives on body weight gain and dressing percentage of Giriraja poultry birds” was carried out to assess the effect of feeding coriander and *Tulsi* seed powder on feed consumption and Feed Conversion Ratio

(FCR) or efficacy, during 2016-17 at Department of Animal Husbandry and Dairy Science, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola. 125 chicks of day-old straight run commercial Giriraja breed were procured from Govt. hatchery. They were randomly and equally distributed in to five dietary treatments consisted of on basal control as Standard ration. (T_1), Standard ration + 1% Coriander seed powder (T_2), Standard ration +2% Coriander seed powder (T_3), Standard ration +1% *Tulsi* seed powder (T_4) and Standard ration +2% *Tulsi* seed powder (T_5). The diets were fed *ad-libitum* to experimental birds by adding coriander and tulsi powder as given above.

The vaccination programme of the experimental birds was scheduled weekly as described by Prasad (2013). Before arrival of Giriraja chicks the pens, waterer (Drinker), feeders, brooders floor were cleaned, washed, disinfected and fumigated. All the experimental chicks were reared on deep litter system of rearing with use of saw dust as a litter material in a well-ventilated house with identical management and environmental conditions. The experimental chicks were weighted individually at weekly interval upto the seven weeks using electronic balance. Dressing percentage for all the treatment groups was calculated by slaughtering three birds from each treatment groups. The data denoted on feed consumption and feed efficiency was analyzed by Completely Randomized Design as described by Amble (1995).

RESULTS AND DISCUSSION

In present study with an objective to study the effect of supplementation of these herbals feed additives was recorded during the period of experiment, data obtained was analyzed statistically, presented and discussed in the light of finding of earlier researches.

Effect of different herbals feed additives on average weekly overall live body weights of Giriraja poultry birds :

The data obtained in respect to average weekly live body weights of Giriraja poultry birds from day old to seven weeks age in all treatment groups was statistically analyzed tabulated and presented in Table 1.

It observed from the present study that the average live body weight of Giriraja poultry birds at day old stage were 32.30, 31.70, 32.00, 31.02, and 32.45 for the treatments T_1 , T_2 , T_3 , T_4 and T_5 , respectively. The initial

body weights of Giriraja poultry birds were statistically non-significant in all dietary treatments indicating that the treatments groups were homogenous in nature. The corresponding average live body weights at the end of seven weeks of age were 1095.72, 1189.48, 1238.56, 1213.18 and 1261.6 g T₁, T₂, T₃, T₄ and T₅ treatment, respectively. The significant difference in weekly body weight was found from second week and onward. The trend of significantly better growth was recorded in T₅ (1261.6) and followed by T₃ (1238.56) groups during second to seventh week. Finding observed by various research workers are also reported Saeid and Saeid (2010) reported that supplemented at coriander seed diet exhibited the highest body weight gain and decreased feed intake.

Farah (2011) investigated the potential effect of coriander seed on physiological traits. Birds were fed experimental diets containing 0 (T₁), 1 (T₂), 2 (T₃) and 3 per cent (T₄) coriander seed. Results showed that 2 per cent and 3 per cent group showed better feed consumption and feed conversion ratio than control. It was observed that inclusion of coriander seed at level of two per cent

have a positive effect on body weight performance of broilers. Similar results were also reported by Sunbul (2010); Hermogenes *et al.* (2011); Rashid *et al.* (2014); Naemasa *et al.* (2015) and Ahmad *et al.* (2016).

Effect of different herbals feed additives on average weekly overall live body weights gain of Giriraja poultry birds :

The data recorded on the average weekly live body weight gain was statistically analyzed, tabulated and presented in Table 2.

The initial body weight gain of Giriraja poultry birds for all treatments was 62.42, 64.51, 65.97, 68.6 and 68.86 g, respectively. The highest live body weight gain was observed for treatment T₅ (68.86) and followed by T₃ (65.79) group. The analysis of variance showed that all treatment were statistically non-significant difference exception of third week, thereafter, it observed that the body weight gain was 144.95, 151.18, 168.2, 169.2 and 177.56 for T₁, T₂, T₃, T₄ and T₅ treatment groups, respectively. The higher weight gain was in T₅ (177.56) followed by T₃ (168.2). The significant difference in

Table 1: Average weekly overall live body weights of Giriraja birds g/bird

Treatments	Initial weight	1 st week	2 nd week	3 rd week	4 th week	5 th week	6 th week	7 th week
T ₁	32.30	94.72	195.89	340.84	510.56	690.38	890.36	1095.72
T ₂	31.70	96.22	196.98	349.76	520.57	749.46	960.52	1189.48
T ₃	32.00	97.98	199.46	367.66	544.40	775.28	999.52	1238.56
T ₄	31.02	99.62	200.86	370.06	541.40	755.28	986.62	1213.18
T ₅	32.45	101.52	204.06	381.62	571.12	781.96	1025.72	1261.6
'F' test	NS				S			
S.E.±	1.233	1.723	1.598	7.590	10.361	19.658	29.119	22.466
C.D. (P=0.05)	3.640	5.085	4.714	22.392	30.566	57.992	85.903	66.275

NS= Non-significant

S= Significant

Table 2 : Average weekly live body weights gain of Giriraja Birds

Treatments	1 st week	2 nd week	3 rd week	4 th week	5 th week	6 th week	7 th week	Treatment mean
T ₁	62.42	101.17	144.95	169.72	179.81	199.98	205.35	158.59
T ₂	64.51	100.76	151.18	170.81	228.89	211.06	228.96	165.18
T ₃	65.97	101.48	168.2	176.73	230.88	224.24	239.04	180.70
T ₄	68.6	101.42	169.2	171.34	213.88	231.34	226.56	176.80
T ₅	68.86	102.54	177.56	189.49	210.84	243.76	235.88	183.10
Week mean	66.07	101.43	162.21	175.62	212.86	222.07	227.16	
'F' test		NS	S			NS		
S.E.±	1.971	1.500	8.027	12.883	24.043	31.211	29.635	
C.D. (P=0.05)	5.816	4.425	23.680	38.006	70.929	92.074	87.425	

NS= Non-significant

S= Significant

weekly body weight gain was found on third week. Whereas, the trend of significantly better growth was recorded in T₁ (205.35), T₂ (228.96), T₃ (239.04), T₄ (226.56) and T₅ (235.88) groups on seventh week. Average weekly live body weight gain as treatment mean was calculated as 158.59, 165.18, 180.70, 176.80 and 183.10 for T₁, T₂, T₃, T₄ and T₅, respectively were denoted that supplementation of herbals as feed additives is beneficial and positively affected on live body weight gain.

The results recorded in the present investigation were also supported and in agreement with result recorded by some of following researchers. Pradhan (1995) was observed that significant higher growth in the treated groups as a compared to untreated and healthy control groups. Carried out trial on effect of stesroak (containing Mango, *Tulsi*, Anola and Ashwagandha) supplementation on 100 day-old broiler chickens divided in to five identical groups (A to E). It was observed that the weight gain was significantly higher in treated groups as compare to untreated and the healthy control groups. Farah (2011) reported that broilers fed on 1.5 to 2 per cent had higher (p<0.05) live body weight and body weight gain. The improvement in weight gain of the broilers using CSM in their diets may probably be for its antioxidant properties which act as natural growth promoter. Rashid *et al.* (2014) a total of 72 hatched cobb 500 broiler were fed ad libitum on a diet with 0 per cent, 0.5 per cent and 1.5 per cent of coriander seed meal (CSM) to assess its feeding value. It is concluded that the supplementation of the coriander seed meal to broiler diet had beneficial effects on body weight gain, feed conversion ratio and carcass yield. Similar results were also reported by Gujral *et al.* (2005); Sunbul *et al.* (2010); Hermogenes *et al.* (2011); Rashid *et al.* (2014); Naeemasa *et al.* (2015) and Ahmad *et al.* (2016).

Effect of different herbals feed additives on mean value of dressing percentage of Giriraja poultry birds:

Dressing percentage for all the treatment groups was calculated by slaughtering three birds from each treatment groups. The dressing percentage was analyzed, tabulated and presented in Table 3.

The average dressing percentage among the different treatment groups was recorded as 63.36, 65.39, 67.78, 66.37 and 68.32 per cent for treatment T₁, T₂, T₃, T₄ and T₅, respected. The differences among all the

Table 3 : Mean values of dressing percentage of Giriraja poultry birds

Treatments	Mean dressing percentage (3 bird from each treatment)
T ₁	63.36
T ₂	65.39
T ₃	67.87
T ₄	66.37
T ₅	68.32
'F' test	S
S.E.±	1.0463
C.D. (P=0.05)	3.0867

S= Significant

treatment groups were found to be significant. Numerically higher dressing percentage was recorded in treatment T₅ (68.32) and followed by T₃ (67.87). It shows the positive and beneficial effects of herbals feeding on dressing percentage. Results recorded by some of research worker as discussed below were in agreement with present results. Pandey *et al.* (2013) reported medicinal plants, as *Tulsi* (*Ocimum sanctum*), coriander (*Corundum sativum*) and Kapikachhu (*Mucuna pruriens*) have been in use as feed additive in broilers with proven results. It is concluded that supplementation of diet with HEFA enhanced the broiler performance, improved the quality of meat and fetched more economic return without exhibiting any perceptible side effect. Similar results reported by Ghule (2010); Das and Vasudevan (2006); Saeid and Saeid (2010); Jafar (2011) and Tirupathi and Ramya (2013) reported the results of herbal remedies (turmeric, *Tulsi*, amla and *Aloe vera*) in additional of their antioxidant, antimutagenic, antiinflammatory, antimicrobial agent protect liver against a variety of toxicants, decreased feed intake but increased the body weight gain, feed efficiency and dressing percentage, also similar results was exhibited by Khatun *et al.* (2014) and Rashid *et al.* (2014).

Conclusion :

The results of the present investigation shows that the use of herbal supplements, *Tulsi* seed powder as well as coriander seed powder was found to be beneficial in poultry bird for its encouraging results in relation to body weight gain and dressing percentage. The overall performance benefits were better at 2 per cent *Tulsi* seed powder (T₅), followed by 2 per cent coriander seed powder (T₃), 1 per cent *Tulsi* seed powder (T₄), 1 per

cent coriander seed powder (T_2) and control (T_1). Hence, supplementation of 2 per cent *Tulsi* seed powder was found more beneficial to live body weight gain and dressing percentage of Giriraja poultry birds.

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