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Effect of dietary supplementation of Fenugreek (*Trigonella foenum graecum* L.) seeds powder on the performance of body weight and gain in weight in commercial broilers

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Abstract
The present study a total of 72 day old chick of male broiler hatch were procured and randomly distributed into four groups. Treatment T_1 is control and treatment T_2, T_3, and T_4 with six sub groups comprising of two birds in each to serve as replicates. Broilers in treatment T_1 was fed diet as per NRC standard CP 22 and ME 2900 but broilers in T_2, T_3 and T_4 were fed standard ration T_1 supplemented with 0.25, 0.5, 0.75 present FSP adlib. The mean body weight old DOC in different treatment T_1, T_2, T_3 and T_4 was 41.17gm, 43.22gm, 43.33gm and 43.50gm respectively and give non-significant effect among that treatment. The mean body weight of broilers at five week of age in T_1, T_2, T_3, and T_4 was 1236.39gm, 1298.61gm, 1303.38gm and 1314.44gm respectively and give significant effect among that treatment. The mean weight gain of broiler at five week of age in T_1, T_2, T_3 and T_4 was 1188.21gm, 1234.39gm 1260.24gm and 1298.83gm respectively and among that treatment give significant effect. It was concluded that treatment T_4 give high body weight, high average gain in weight per broiler among those treatments.

Keywords: fenugreek, FCR, DOC, electronic weighing machine, FSP, NRC

Introduction
Poultry provide a major income generating activity from the sale of eggs and meat by birds. Poultry products foods of animal origin of which eggs and poultry meat are an impotent scarce occupy an important part in the food pared of humanity. Poultry meat contributed to production nearly eleven per cent of the total world production. Today broiler production occupies the place of pride in poultry industry. The growth and development of the commercial broiler farming in the country during the last decades has been spectacular. Scientific production and management has made considerable progress to make broiler farming the fastest growing industry of Indian agriculture. Antibiotics as growth promoter in poultry feed are posing serious health risks to human health because of their residual effects in poultry meat and eggs result pathogens develop resistance to antibiotics. Poultry scientists today are challenged to find out new alternatives to antibiotic growth promoters with no side effects for poultry that could be more or as effective against harmful micro organisms in the gastrointestinal tract and to stimulate that growth by increasing the efficiency of feed utilization and to enhance the immunity.

This plant Trigonella foenum- graecum distributed mainly in the Asia and Mediterranean region of the world is considered to be potential medicinal plant in the indigenous system of India, Pakistan and china etc. Different part leaves, root, seed and entire plant of Trigonella foenum- graecum have been recommended for treatment of high cholesterol levels, inflammation, gastrointestinal ailments, and chronic cough. Prajapati *et al*. 2003 loss of appetite, diarrhea, dysentery eye disease and lowering blood sugar, inflammation of the mucous members of the nasal passages and sore throat etc. Recently WHO (2003) recommended a local alliance on traditional medicine and development a guideline for the quality control of herbal drugs. Introduction of several medicinal plants used in Indian traditional medicine have attracted May scientists. Many species of plants are used for medicinal purpose. Fenugreek (*Trigonella foenum-graecum*) is one of the most geographical

widespread species having multiple medicinal properties. (Acharya SN *et al*., 2008)

Trigonella foenum-graecum l. commonly known as Methi in our country a well known medicinal plant known for its antibacterial antimicrobial, anthelmentic, antipyretic, antifungal and subtropical region of the world. (Ahmadiani *et al*., 2001) [2]. Considering the fact as poultry also being single stomach likewise human being Methi may exert beneficial effect in births as well as to improve their performance. Therefore the present study was undertaken to find out the effect of dietary supplementation of fenugreek (*Trigonella foenum graecum* L) seeds power on growth performance of commercial broilers.

Material and Method

A total of 72 DOC broiler chick of same hatch were procured and randomly divided into four groups with six sub group comprising of 3 chicks in each to separate as replicates with the following dietary regimes as treatments:

T_1 (control) Ration with no Trigonella foenum- graecum L
T_2 Ration with 0.25% Trigonella foenum- graecum L
T_3 Ration with 0.50% Trigonella foenum- graecum L
T_4 Ration with 0.75% Trigonella foenum- graecum L

The birds were reared in battery type cage under standard management practices from day old to fie week of age. Dried Trigonella foenum- graecum L seeds power was supplemented as per dietary regions of treatment. Broiler starter ration contained CP: 22 percent and ME: 2900 K cal/kg feed and broiler finisher ration contained CP: 19 percent and ME: 3000 K cal/kg was fed ad libitum to the birds. Initial weight of each chick was recorded on arrival and then weekly to obtain the growth rate. The feed consumption was also recorded weekly to determine the feed conversion rate. The mortality rate was also recorded during the experiment period.

Table 1: Ingredient and nutrient composition of experimental died (%DM)

Ingredients (%)	Broiler starter (0-21 days)	Broiler Finisher (22-42 days)
Maize	60.00	63.00
Ground nut cake	23.35	18.00
Fish meal	13.00	15.00
Mineral mixture	3.00	3.00
Common salt	0.50	0.38
Vitamin premix (Vit.A,B_2,D_3)	0.05	0.02
Amprosol	0.05	0.05
Nuvimin	0.05	0.55
Nutrient composition		
Moisture (%)	6.29	6.22
Crude protein (%)	22	19.0
Total ash (%)	8.02	9.34
Crude fiber	5.5	6.00
ME (Kcal/kg)	2900	3000

The data on various parameters were collected tabulated and statistically analysis of variance (ANOVA) technique as per Snedecor & Cocharan (1994) in Random Block Designed.

Result

Statistically significant different ($P<0.05$) in respect to Fenugreek level was found to have influence on average weight of broiler and average gain in weight among the experimental group of broiler.

The data regarding body weight of broiler chicks from DOC distributed into control (T_1) and three treatments (T_2, T_3. T_4) were presented.

In general the body weight of day old broiler chicks ranged from 39.33 to 46.0g. The body weight of day old chicks in four treatments viz T_1, T_2, T_3 and T_4 ranged from 40-42g, 39.33-46.0g, 41.66-43.66g and 41-45g respectively. The mean body weight of DOC in different treatments T_1, T_2, T_3 and T_4 were 41.17, 43.22, 43.33 and 43.50g respectively. The different in the body weight of the chicks of different groups were non- significant effect.

A. Average weekly body weight of broilers

The data regarding body weight of the chicks randomly distributed into control T_0 and four different treatments T_1, T_2, T_3 and T_4 were observed weekly. At first week of age the highest body weight of broiler was recorded in T_4 (125.44g) fallowed by T_3 (123.94g), T_2 (12.53g), and T_1 (116.83g) and Second weeks of age the highest body weight of broiler was recorded in T_4 (271.44g) followed by T_3 (264.89g). T_2 (266.33g), and T_1 (254.16g). Third weeks of age the highest body weight of broiler were recorded in T_4 (588.72g) Fallowed by T_3 (567.00g), T_2 (549.72g), and T_1 (457.89g). At fourth weeks of age the highest body weight of broilers were recorded in T_4 (909.33g) followed by T_3 (893.33g), T_2 (884.39g) and T_1 (844.61g). At five weeks of age the highest body weight of broiler were recorded in T_4 (1314.44g) fallowed by T_3 (1303.38g) T_2 (1298.38g) and T_1 (1236.39g). Irrespective of treatments the mean body weight of broilers in first week, second, third, four and five week of age were 122.10, 264.20, 563.33, 882.91 and 1263.20g respectively and the different in this value were significant effect. When treatment wise body weight of broiler were observed it was noted that highest weekly mean body weight of broiler were recorded in T_4 (641.87g) followed by T_3 (630.51g) T_2 (623.95g) and T_1 (600.34g). The differences in these values of treatments were also found significant indication a significant effect of treatment on body weight of broiler. Among T_2 and T_3 was non significant being at par as shown in figure no. 1.

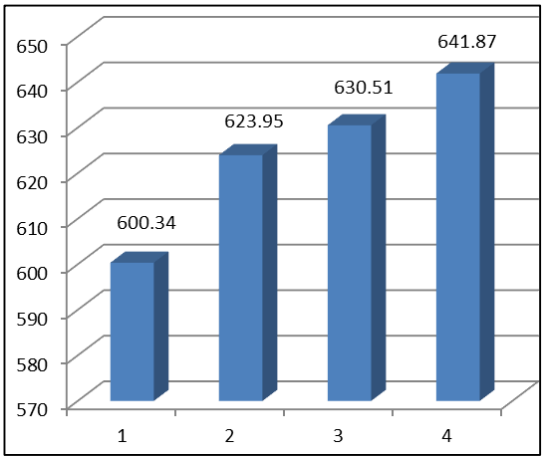

Fig 1: Weekly average body weight (g) per broiler in four different treatments.

B. Average weekly gain in weight of broilers of different treatments

The data regarding the gain in weight of chicken randomly distributed into control (T_0) and four different treatments (T_1, T_2, T_3, and T_4). The following observation were at one week of age the highest gain in weight per broiler were recorded in

T_4 (82.00g) fallowed by T_3 (80.78g), T_2 (75.44g), and T_1 (39.37g). Two weeks of age the highest gain in weight per broiler were recorded in T_4 (147.50g) fallowed by T_3 (142.35g), T_2 (140.89g), and T_1 (137.33g) and three weeks of age T_4 (322.39g) fallowed by T_3 (306.44g), T_2 (295.78g) and T_1 (271.84 g). At four weeks of age the highest gain in weight per of broiler was recorded in T_4 (414.22g) followed by T_3 (320.61g), T_2 (317.17g) and T_1 (307.89g) and five week of age T_4 (414.22g) fallowed by T_3 (410.06g), T_2 (405.11g) and T_1 (391.78g). In respective of treatments the mean gain in weight of broilers in first seconds, third, four and fifth week of age were 79.39g, 142.01g, 299.11g, 319.59g and 405.29g respectively and the different in this value were significant effect.

When treatment wise gain in weight in broiler were observed it was noted that highest weekly mean gain in weight of broiler were recorded in T_4 (259.77g) followed by T_3 (252.05g) T_2 (246.88g) and T_1 (237.64g). The differences in these values of treatments were also found significant effect of treatment on gain in weight of broilers but T_3 and T_2 was non-significant effect a par shown in figure no. 2

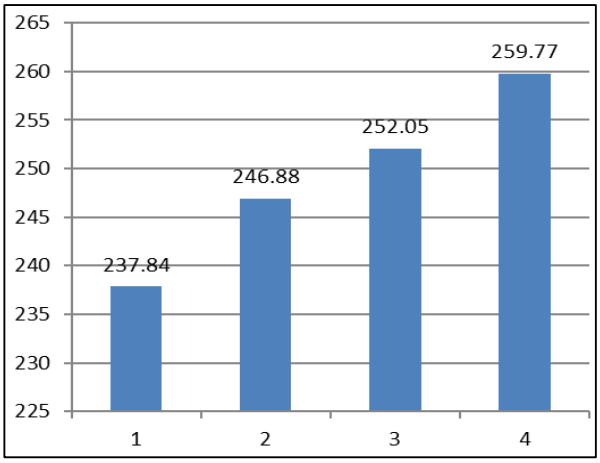

Fig 2: weekly average body gains in weight (g) per broiler in four different treatments.

The results were summarized that the mean body weight o DOC in different treatment T_1, T_2, T_3 and T_4 were 41.17, 43.22, 43.33 and 43.50gm respectively. The different in body weight of DOC were non-significant. But the mean body weight of broilers at five week of age in T_1, T_2, T_3, and T_4 were 1236.39, 1298.61, 1303.38 and 1314.44 gm respectively. The mean weight gain of broilers at five week of age in T_1, T_2, T_3, and T_4 were 1188.21, 1234.39, 1260.24g and 1298.83g respectively. The differences between gains in weight among the treatment were significant.

Table 1: Effect and mean average percentage of supplemental Fenugreek seed powder utilization of growing broilers.

Parameters	Treatments				Results
	T_1	T_2	T_3	T_4	
Body weight of DOC	41.17^a	43.22^a	43.33^a	43.50^a	NS
Body weight at five week of age (kg)	123^a	129^a	130^a	131^b	S
Average gain in weight per broiler (kg)	118^a	123^b	126^b	129^c	S

Conclusion

It is concluded that there was a significant effect of Fenugreek seed powder supplementation in feed of broilers on body weight and gain in weight. The feed contained 75% (T_4) Fenugreek seed powder were observed the best result to improved body weight and gain in weight of broilers.

References

1. Abu-Dieyeh ZHM, Abu- Darwish MS. Effect of feeding powered fenugreek seed (*Trigohella, fenues-gracum*) and growth performance and 4-8 week old broilers. *Indian* Journal Animal Nutrition Value. 2008, 2012; 29(2):174-178.
2. Ahmadiani A, Javan M, Semnanian MA, Barat E, Kamalinejad M. Anti- inflammatory and antipyretic effect of Trigonella foenum- graecum leaves extracts in rats. Journal of Ethno pharmacology. 2001; 75:283-286.
3. Asmena Mowla, Alauddin M, Atiar Rahman Md, Kabir Ahmed. Antihyperglycemic effect of *Trigonella foenum-graecum* (fenugreek) seed extract in alloxan-Induced. Diabetic rats and its use in Diabetes Mellitus: Abrif quality phytochemical and Acute Toxicity test on the extract. Afr. J Tradit complement Altern Med. 2009; 6(3):255-261.
4. Farman Ullah Khan, Durrani FR, Asad Sultan, Rifat Ullah Khan, Shabana Naz. Effect of fenugreek (*Trigonella Foenum Graecum*) seed extract on visceral organs of broiler chicken. Journal of Agriculture and Biological Science 2009; 4(1):58-60.
5. Fedelic Ashish Toppo, Rachna Akhand, Dr. Pathak AK. Pharmacological actions and potential use of *Trigonella foenum-graecum*: a review. Asian journal of Pharmaceutical and Clinical research. 2009; 2(4):29-38.
6. Gupta SK, Kalaiselvan V, Srivastava s, Saxena R, Agrawal SS. *Trigonella foenum-graecum* (Fenugreek) protects againt selenite- induced oxidative stress in experimental cataractogenesis. Biol Trace Elem Res. 2009; 136(3):258-68.
7. Satish K Verma, Santosh K Sing, Abhishek Mathur. In itro cytotoxicity of calotropic procera and Trigonella foenum graecum against human cancer cell lines J. chem. Pharm. Res. 2010; 2(4):861-865.
8. Vats V, Yadav SP, Grover JK. Effect of T. foenum graecum on glycoen content of tissues and the key enzymes of carbohydrate metabolism J. Ethnopharmacol. 2003; 85:237-242.