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Effects of inclusion of Jamun (*Syzygium cumini*) seeds on blood profile in Giriraja birds

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Abstract
Poultry sector in India is mostly organized and holds a very important place in the country's economy. Though the backyard poultry (BYP) is not well organized, it still plays a major role in rural household, income generation, women empowerment and food security. *Syzygium cumini* (Family: Myrtaceae) is also known as *Syzygium jambolanum* and *Eugenia cumini*. Other common names include Jambul, Black Plum, Java Plum, Indian Blackberry, Jamblang, Jamun etc. An experiment was conducted on Giriraja birds to evaluate the effects of jamun seeds as an unconventional feed on the growth parameters. One hundred and fifty birds were divided into 3 treatments having 5 replicates in each treatment. All replicates contained 10 birds each. The treatment 1 was fed with control diet and inclusion of Jamun seeds is at a rate of 2% and 4% in treatment 2 (T_2) and treatment 3 (T_3). Eight weeks data was analysed using suitable statistical software. Blood chemistry showed non significant differences among different treatments. It was suggested to include 4 per cent Jamun seeds in Giriraja birds.

Keywords: Jamun (*Syzygium cumini*), blood, Giriraja birds

Introduction
Livestock and poultry industries contribute significantly to India's economy. Hence, poultry industry in India has become one of the fastest growing segments to contribute a significant portion of the country's GDP. The tremendous efforts made towards advancement of new technologies and nutritional improvement are responsible for the composite growth in the poultry and related sectors. In India, there has been a multi-faceted growth in poultry production in terms of high yielding layer (310-340 eggs per annum) and broiler (2.4-2.6 kg body weight at 6 weeks) varieties over the last 40 years, which has contributed to incredible growth rates in egg (4-6 percent per annum) and broiler production (8-10 per cent per annum) (Sonkar *et al*., 2020) [5].

The government of India is also supporting rural backyard poultry production by introducing improved strains of backyard poultry *viz*., Giriraja, Swarnadhara, Vanaraja, Krishibro, Krishilayer, Gramapriya, Naked neck broiler and Dwarf broiler etc.

The fruits and seeds of wild Indian *Syzygium cumini* (Black Plum) skeels are edible and are reported to contain vitamin C, vitamin E, gallic acid, tannins, anthocyanins includes cyanidin, petunidin, malvidin-glucoside and other components. Worldwide, total production of Jamun is 13.5 million tonnes, out of which India contributes about 15.4 %. Amongst the Indian states, Maharashtra is the largest Jamun producer followed by Uttar Pradesh, Tamil Nadu, Gujarat, Assam and others (Patil *et al*., 2012) [4]. Earlier studies suggested to include Jamun seed up to 1.5 per cent in broiler birds (Adarsh et al., 2022) [2].

Materials and Methods
A standard starter and finisher rations were formulated as per ICAR (2013) [3] Vanaraja recommendations using commonly available feed ingredients like maize, soya bean, DORB and rice polish. In the test diets, Jamun seed, an unconventional feed supplement, was included at two different levels (2 and 4 per cent) as described in Table 1.

Table 1: Description of the experimental diets

Experimental group	Description of the treatment
T_1	Control diet
T_2	2% Jamun seed inclusion in the control diet
T_3	4% Jamun seed inclusion in the control diet

A total of 150 day old Giriraja chicks were obtained and were randomly distributed to three treatment groups of five replicates each in a Completely Randomized Design. Each of the three diets described earlier were offered to five such replicates of ten birds each. Chicks were reared under approved managemental practices under a deep litter system up to eight weeks of age, with *ad libitum* supply of feed and water.

Blood samples were collected from two birds of each replicate at the end of the trial from all treatment groups. A serum was separated individually and subjected for the estimation serum biochemical analysis.

Results and Discussion

On the last day of trial, blood was collected from two birds, serum was separated and analysed for various biochemical parameters to assess the effect of supplementation of Jamun seeds in Giriraja birds is presented in Table 2.

Among serum biochemical parameters, the SGOT values at the end of the experiment in treatment groups T_1, T_2 and T_3 were 291.5 U/L, 283.7 U/L and 300.7 U/L. Statistically non-significant ($p \geq 0.05$) difference was observed in the serum SGOT levels among all the three treatment groups.

In treatment groups T_1, T_2 and T_3, the SGPT values at the end of the experiment were 10.52 U/L, 11.19 U/L and 11.71 U/L, respectively. The SGPT values were also statistically ($p \geq 0.05$) non-significant.

At the end of 56th day, the serum total bilirubin levels were 0.17 mg/dL, 0.15 mg/dL and 0.10 mg/dL in T_1, T_2 and T_3, respectively. These results also revealed mean creatinine values as 0.17 mg/dL in control group (T_1), 0.20 mg/dL in 2 per cent Jamun seed fed group (T_2), 0.17 mg/dL in 4 per cent Jamun seed fed group (T_3). The total bilirubin and creatinine values were not significantly ($p \geq 0.05$) differed between the treatment groups.

At the end of 56th day, the serum calcium levels were 8.04 mg/dL, 8.02 mg/dL and 8.42 mg/dL in T_1, T_2 and T_3, respectively. No significant difference was noticed in serum calcium levels among the three treatments groups.

Table 2: Serum biochemical parameters of birds fed with different levels of Jamun seed

Dietary description		SGOT (U/L)	SGPT (U/L)	Total bilirubin (mg/dL)	Creatinine (mg/dL)	Calcium (mg/dL)
T_1	Control	291.50 ± 12.18	10.52 ± 0.71	0.17 ± 0.03	0.17 ± 0.01	8.04 ± 1.09
T_2	2% inclusion of Jamun seed	283.70 ± 9.33	11.19 ± 0.55	0.15 ± 0.05	0.20 ± 0.01	8.02 ± 0.30
T_3	4% inclusion of Jamun seed	300.70 ± 14.13	11.71 ± 1.18	0.10 ± 0.02	0.17 ± 0.01	8.42 ± 0.27

According to serum biochemical results, there were no significant ($p \geq 0.05$) changes in SGOT, SGPT, total bilirubin, creatinine and calcium across different treatment groups. Similar results were also reported by Adarsh (2021) [1].

The study concluded to include 4% Jamun seeds in Giriraja colored birds.

References

1. Adarsh J. Effect of supplementation of Jamun (*Syzygium cumini*) seeds on performance and carcass characteristics of commercial broiler chicken. Master's thesis, Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar; c2021.
2. Adarsh J, Suma N, Prabhu TM, Jayanaik, Umashankar BC, Malathi V, *et al*. Nutritional evaluation of Jamun (*Syzygium cumini*) seeds incorporation in commercial broiler ration. Frontier journal of Veterinary and Animal Sciences. 2022;11(1):15-21.
3. ICAR. Nutrient requirements of animals – poultry (ICAR-NIANP). Indian Council of Agricultural Research, New Delhi; c2013.
4. Patil SS, Rahul MT, Rajasekaran P. Utilization of Jamun Fruit (*Syzygium cumini*) for Production of Red Wine. J Adv. Lab. Res. Biol. 2012;3(3):200- 203.
5. Sonkar N, Singh N, Santra AK, Prakash VL, Soni A. Backyard poultry farming: A source of livelihood and food security in rural India. J Pharm. Innov. 2020;9(4):28-32.