



SHORT COMMUNICATION

Performance of Kadaknath and Local Non Descript Birds in Backyard Farming System for Tribal Women Empowerment

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ABSTRACT

The present study was conducted in SaiKhandara and Rondha villages of Betul District of Madhya Pradesh, for household income and food & nutritional security through tribal women empowerment and to find better performance among the Kadaknath and local non descript (ND) breed. Twenty female and two male birds of each breed are distributed to 10 women's of each two villages (Total 440 chicks) for rearing in backyard farming system in village situation. The experiment was conducted at farmers level under the operational area villages of KVK, Betul. The birds were routinely vaccinated against Newcastle disease, Infectious Bursal Disease and Fowl Pox diseases. The data for body weight, body weight gain, mortality and egg production were recorded weekly. Body weight was significantly higher in Kadaknath birds as compare to ND birds. Egg production was also higher in the Kadaknath birds but age at 1st laying and mortality rate were on the lower side in Kadaknath than ND birds though found non-significant among each other. The selling rate of Live body weight and egg of kadaknath birds were also higher than ND birds, because there is great demand of Kadaknath meat due its nutritive and medicinal properties. The study revealed that, Kadaknath as Backyard poultry is play an important role to empower women socially and economically, as a source of income generation, employment opportunities, along with production of valuable foods that reduces household malnutrition.

HIGHLIGHTS

- Kadaknath as Backyard poultry is play an important role to empower women socially and economically.
- Kadaknath rearing acts as a source of income generation, employment opportunities, along with production of valuable foods that reduces household malnutrition.

Keywords: Kadaknath, Backyard Poultry Farming, Tribal, Women Empowerment

Betul district of Madhya Pradesh is predominantly inhabited by tribals. The region suffers from high rates of poverty and majority of households live below poverty line (BPL). Agriculture is the major source of income of these tribal communities. In the off season, when there is no source of livelihood, these tribals migrate in search of work as agricultural and wage labour in the adjoining districts of M.P. and Maharashtra. It has been observed that, in general rural tribal women contribute more than the men in animal husbandry activities as invisible workers (Patil *et al.*, 2022). Women are recognized as key players

in Backyard poultry production systems and successful engagement with this sector should incorporate gender-sensitive approaches. It has been shown that agricultural interventions which target women are more likely to lead to positive nutritional outcomes (De Bruyn *et al.*, 2015). Therefore, in such a situation, backyard poultry has a

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potential to upgrade the lives of tribal households through women empowerment and bring economic as well as nutritional security (Kumar *et al.*, 2019).

The local non discript chicken varieties adopted in the free range backyard conditions in rural areas have low productivity, output and high mortality and their contribution to the total income output is almost low for the last few decades. Thus, there is a need to take up the scientific backyard poultry farming programme, to meet the requirements of rural consumers while constituting a source of subsistence income as a subsidiary occupation.

Kadakhnath is an indigenous poultry breed, native to Jhabua district of western Madhya Pradesh. It is the only black meat chicken breed (kalamasi) reared mainly by the bhil and bhilala tribes of Jhabua. This breed is very popular among tribals mainly due to its better adaptability to the local environment, disease resistance, high palatability, texture and flavor. Its meat have a delicacy of distinctive taste, medicinal values, higher in protein and low in fat content as compared to other breeds of chicken and believe that its possesses aphrodisiac properties (Sharma *et al.*, 2022). So there is a great demand of Kadakhnath meat due its nutritive and medicinal properties. Thus in view of the above fact, the present study was planned to assess the performance of kadakhnath and local non descript birds in backyard farming system of betul district for tribal women empowerment.

A day old Twenty female and two male chicks of each Kadakhnath and local non descript (ND) birds were randomly distributed to 10 women's of each two villages (Sai Khandara and Rondha) of Betul District of (M.P.). (Total 440 chicks) for rearing in backyard system of farming in village situation. The experiment was conducted at farmers' level under the operational area villages of KVK, Betul (M.P.). The birds were vaccinated against Newcastle disease (F1 - strain at 7th day; Lasota Strain at 21st day) and against Infectious Bursal disease at 14th day along with vaccine for fowl pox at 56th days (Table 1). The deworming was done at regular interval to overcome the worm infestation. Basal diet was same for all treatments. Standard animal management practices were followed in the field. The data for body weight, body weight gain, mortality and egg production were recorded weekly. The benefit cost ratio for all the groups were calculated. A training programme was conducted for the

womens before starting the experiment to educate them for feeding, care & management of birds and for correct method of data recording on different parameters in the adopted villages.

Table 1: Vaccination Schedule of the birds

Age (days)	Vaccine used	Dose	Administration route
1	Marek's	0.2 ml	S/C at neck
7	F1 strain (RD)	1-2 drops	I/O
14	Gamboro	1-2 drops	I/O
21	Lasota (RD)	—	Drinking Water
56	Fowl Pox	0.2 ml	I/M
70	R ₂ B	0.5ml	I/M

Suitable statistical procedures were followed for analysis of the data recorded under various experiments in this study. Different statistical designs were considered for analysis of data as per Snedecor and Cochran (1994) and analysis was done using SPSS programme.

Weekly body weight and gain in body weight

The average weekly body weight and gain in body weight of Kadakhnath and local non descript birds are shown in Table 2 from 1 to 12th week of age. The data shows that the body weight was higher from 1 to 9th week in Kadakhnath bird as compared to local non descript birds though found Non-significant, however after 9th week till 12th week the body weight was found significantly higher in Kadakhnath birds. Our results are found similar with earlier report of Sharma and Sahu (2016), in which they compared the Dual Purpose Coloured Bird with Kadakhnath and Krishna J breeds and reported non significant changes in weekly body weight gain from 1st to 7th week among the three breeds. Bajpai *et al.* (2019) also reported increased body weight in Narmada nidhi chicks from 1st to 7th week of age with non significant and afterwords up to 12th week significantly increased body weight compare to local non descript birds. Singh *et al.* (2017) reported gain in body weight was statistically significant from 1st to 11th week in dual purpose coloured bird as compared to local non descript birds, however in 12th week the gain in body weight was found non significant between the two types of bird.

Table 2: Weekly Body weight gain of Dual purpose colour bird

Age (Weeks)	Kadakhnath		Local breed (ND)	
	Body weight Gain (g)	Body weight(g)	Body weight Gain (g)	Body weight(g)
0 day	—	33.4 ±0.29	—	32.21±0.32
1	31.9	65.3 ±0.54	29.09	61.30±0.45
2	37.8	103.1 ±0.65	36.82	98.12±0.31
3	39.2	142.3 ±0.43	38.29	136.41±0.37
4	44.2	186.5 ±0.34	42.91	179.32±0.35
5	67.2	253.7 ±0.41	62.05	241.37±0.78
6	75.61	329.31 ±0.37	72.13	313.50±0.19
7	96.47	425.78 ±0.27	91.93	405.43±0.04
8	106.27	532.05 ±0.23	104.92	510.35 ±0.16
9	128.27	660.32 ±2.64	122.95	633.30 ±3.02
10	159.35	819.67 ^a ±2.19	143.37	776.67 ^b ±2.27
11	169.67	989.34 ^a ±3.53	151.57	928.24 ^b ±3.88
	186.89	1176.23^a ±3.23	165.97	1094.21^b ±3.59

Egg production, age at first laying and mortality

The production performance (egg production, age at first laying, and mortality) of Kadakhnath birds and non descript birds are shown in Table 3.

Table 3: Production performance of Narmada Nidhi and Local colored birds

Particular	Kadakhnath	Local Breed
Egg production (Upto 12 months of age)	58±1.32	52±2.01
Age at 1 st Laying (wk.)	22±1.12	24±2.43
Mortality (%)	10.20±0.34	15.21±0.65

From the table it is clear that egg production was non significantly higher in Kadakhnath birds as compare to local non descript birds. While Sharma *et al.* (2012) found higher egg production in Krishna J a developed breed than kadakhnath. We experienced same case as like Singh *et al.* (2017), where they observed that the availability of scavenging area mainly attributed to the higher egg production. The age at first Laying, was low in Kadakhnath as compared to non descript breed indicating superiority of Kadakhnath bird over the non-descript local bird but was non significant. Our results are found similar with Sharma *et al.* (2012) who have reported age at first laying to about

22.00±0.54 weeks in Kadanath bird. The mortality rate was also found higher in local ND birds as compare to Kadakanth bird. The high mortality in both the breeds was due to the animals like cat, dog attack and severe cold in the month of January. Apart from this the high mortality in local cross birds was may be due to low resistant power of diseases.

Economics of Kadakhnath Rearing

The eggs of Kadakhnath breeds were sold @ ₹ 15 per egg and local ND breeds were @ ₹ 7 per egg, while chicken/meat of kadakhnath sold @ ₹ 400 per kg and local ND breeds were @ ₹ 250 per kg (Table 4) The high rate of Kadakhnath chicken/meat is due to its medicinal uses as effectiveness in treating women's discuss, sterility, monoxenic (abnormal menstruation), habitual abortion, blood leucorrhoea, pulmonary problems (tuberculosis), heart diseases, asthma and nephritis etc. The eggs of Kadakhnath is nutritive especially for old peoples and high blood pressure victims since the cholesterol content is lower and free amino acids are higher than that of other kind of birds (Sharma *et al.*, 2012). The Income/Output was found higher from the Kadakhnath with B:C ratio of 4.710 as compare to local Non descript breed (2.24).

Table 4: Income/Output (Per member)

Particulars	Kadaknath		Local Breed	
	Rate	Cost (₹)	Rate	Cost (₹)
(A) Expenditure				
(i) Cost of chicks (Day old)	₹ 80/- per chick × 22	1760	₹ 40/- per chick × 22	880
(ii) Cost of medicines (Upto 12 months)	₹ 10/- per chick × 22	220	₹ 10/- per chick × 22	220
(iii) Cost of feed (For one batch of 22 chicks)	₹ 10/- per day × 12 months	3600	₹ 10/- per day × 12 months	3600
(iv) Miscellaneous cost (Upto 12 months)	₹ 5/- per chick × 22	110	₹ 5/- per chick × 22	110
Total expenditure		5690		4810
(B) Return				
(i) Sale value of cocks (at 12 month of age)	2.6 kg. × ₹ 400/Kg × 2	2080	2.2 kg. × ₹ 250/Kg × 2	1100
(ii) Consumed or Sale of eggs (Upto 12 months)	58 Nos. × 18 hens × ₹ 15/-	15660	52 Nos. × 17 hens × ₹ 7/-	6188
(iii) Sale value of hens * (at 12 month of age)	2.05 kg. × 18 × ₹ 400 /Kg	14760	1.95 kg. × 17 × ₹ 250/Kg	8288
Gross return		32500		15576
Total profit (B-A)		26810		10766
Profit/member		26810		10766
B:C. Ratio		4.71:1		2.24:1

CONCLUSION

From the above experiment, it may be concluded that Kadakanth bird has high body weight gain, higher egg production as compared to local non descript breed. Due to preference by the community and medicinal value, the Income/Output was also found higher from the Kadaknath as compare to local Non descript breed. As Backyard poultry its playing an important role to empower women socially and economically, as a source of income generation, employment opportunities, along with production of valuable foods that reduces household malnutrition and thats why can be reared in rural areas of Betul district for backyard rearing.

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