



GROWTH PERFORMANCE OF KADAKNATH POULTRY BREED IN INTENSIVE AND BACKYARD REARING

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Abstract: The experiment was conducted to know the performance of kadaknath breed rearing under intensive and backyard condition in Uttar Bastar Kanker district of Chhattisgarh (India). The experiment was conducted at farmer's field at adopted villages Tarasgaon and Kulgaon of Kanker district. Fifty number of day-old chicks of Kadaknath breed distributed randomly in four farmer to rear the chicks in intensive and backyard system. The chicks were vaccinated against Ranikhet, Gumboro and fowl-pox diseases as per schedule. In the experiment body weight recorded weekly and fortnightly. Average body weight from 0 to 4 weeks of age ranges from $28.54 \pm 0.13\text{gm}$ to $199.14 \pm 2.14\text{gm}$ and $28.65 \pm 0.15\text{gm}$ to $102.34 \pm 2.61\text{gm}$ in Intensive and Backyard rearing respectively. The average body weight in rages from $216.23 \pm 0.12\text{gm}$ to $849.73 \pm 0.61\text{gm}$ and 198.35 ± 0.31 to 789.35 ± 0.43 in 6th to 12th weeks of age, where as higher body weight observed in 10th weeks of age as 248.22gm and 211.83gm in Intensive and Backyard rearing respectively. The Kadaknath breed attained 1kg body weight between 14th to 16th weeks in intensive and 18th to 20th weeks of age in backyard rearing. It was also observed that rate of increase in body weight was higher in male as compared to female in both system of rearing, thus showing clear sex dimorphism.

Key words: Body weights, Growth rate, Intensive system, Backyard rearing, Sex-dimorphism.

Introduction

Uttar Bastar Kanker District is situated in the North region of Bastar plature of Chhattisgarh. About 68 % of the total population of the district is tribal and the main tribes are Hulba, Gond, and Bhil. Major sources of livelihood are agriculture, livestock and wage-labour. Migration in search of work as agriculture labour in the adjoining districts of Maharashtra and Andhra Pradesh is rampant. In addition to crops, forest produce, livestock and backyard poultry make major contributions to livelihoods of tribal households. Almost all the tribal households rear backyard indigenous poultry and this activity is the domain of women. Poultry has a multiple role in the lives of tribal households ranging from economic and nutritional security to socio-cultural aspects.

Kadaknath is a native breed of poultry inhabiting Jhabua and Dhar districts in Western parts of Madhya Pradesh. It tolerates extreme climatic conditions of summer heat and cold winter stress

and thrives very well under minimal management inputs like poor housing, no health care or supplementary feeding while exhibiting appreciable degree of resistance to diseases compared to other exotic breeds of fowl (Thakur et al 2006). Backyard poultry keeping is practiced by majority of the poor and marginalized rural households all over India. These households rely on low cost backyard poultry rearing to supplement and enhance their livelihoods. It not only provides nutritional security but also reduces the livelihood vulnerability, and promotes gender equity (Dolberg, 2004; Ahuja, 2004; Ahuja and Sen, 2007).

Kadaknath lays around 80-90 eggs annually and is not a good brooder. However its dark coloured meat is considered a delicacy and is also attributed with medicinal qualities much sought after by the tribal. It is locally known as Kalamasi and is used for the traditional treatment of many diseases in human beings and is also considered an aphrodisiac. However, no proper scientific evaluation endorses

this claim. The above mentioned reasons make Kadaknath birds comparatively expensive and much aspired for. The meat and eggs are also reckoned to be a rich source of protein (Rao and Thomas 1984). However, hens of this breed show poor brooding ability and the eggs are, therefore, kept under desi hens for hatching- a traditional practice followed by tribals in this area.

Once the Kadaknath established itself in the new area, a number of Tribal farmers took up this activity and began rearing smaller flocks (even a pair) of Kadaknath as they were rearing Desi birds. They have adopted traditional free range scavenging system since the bird thrives outdoors and feed costs are also reduced when they are allowed to scavenge. Both Kadaknath and Desi birds scavenge around the farm and are offered a handful of grains once or twice a day. Grain offering is also useful in calling and gathering birds in the evening to be put in the shelter. For gathering of eggs the women and children have to be watchful and look around the house since unlike the Desi, Kadaknath birds do not lay eggs at a fixed place

Market demand and the premium price paid to Kadaknath bird are some of the main reasons for rural households adopting rearing of this bird – besides the fact that it can be managed under traditional scavenging system. In order to reduce losses due to disease outbreaks, preventive measures in form of timely vaccinations were introduced to the female/male Kadaknath poultry. This major improvement in the management practice resulted in considerable reduction in losses. Easy access to market, availability of health services, timely advice to the households involved in Kadaknath rearing are major factors responsible for the success of the initiative. Hence there is a need to ensure services (health control, advice and marketing) through trained local youth while planning propagation of Kadaknath rearing.

Kadaknath is a promising indigenous fowl and needs due attention for propagation in Southern Chhattisgarh and other agro climatically suitable areas as it has blended well with the traditional,

backyard, scavenging system of poultry keeping of tribal households. Moreover Kadaknath fowl is reported to be more productive and profitable than the Desi bird. The households have accepted to improvements in management (like vaccination, deworming) of the birds since these were beneficial and easy to adopt.

The majority of tribal community and rural mass are unable to compete with the resourceful urban people, but scientifically poultry rearing is one of the better opportunities to help enhance the income and improving livelihood. Kadaknath bird commands an elevated position since a year old Kadaknath bird fetches Rs. 500 to 600/- and the eggs are sold at Rs. 8 to 10 /- depending on season and location. Due to high demand for Kadaknath meat and the virtual absence to promote its rearing, the population of birds has reduced drastically and is on the verge of extinction. Reasons for preferring adoption of Kadaknath bird, as indicated by tribal households. Keeping this an experiment planned and executed on growth parameters of kadaknath under intensive and backyard system in KVK adopted villages

Materials and Methods

The experiment was conducted during year 2015-16 at farmer's fields in the adopted villages of KVK, Kanker (Chhattisgarh.). For the experiment purpose, four farmers were selected and distributed 50 chicks each farmer in which, two farmers rear the chicks in intensive housing system and two farmers for backyard rearing. Both the group of birds were vaccinated timely against diseases of Ranikhet, Gumboro and fowl pox. Same treatment given to both the group of birds. The data recorded of birds 0 to 20th weeks of age, in which Growth rate, body weight and sex-dimorphism were recorded weekly & fortnightly in intensive and backyard rearing. The body weights were recorded for males and females separately from 6th week onwards (Thakur et al 2006). The data obtained during experiment were statistically analyzed following the procedure described by Snedecor and Cochran (1989).

Result and Discussion

The experiment was conducted to find out the growth pattern and gain in body weight in the Kadaknath breed of poultry under intensive system and Backyard rearing of field conditions. The mean values of 0 days, 1st, 2nd, 3rd, 4th, 6th, 8th, 10th, 12th, 14th, 16th, 18th and 20th week body weight of Kadaknath in intensive and backyard rearing are presented. Day old body weight of Kadaknath chick's ranges from 28.54 ± 0.13 gm & 28.65±0.15gm was observed under deep litter system of management in the present study. This study is agreed with Haunshi et al. (2011) reported that higher hatch weight (28.55 ± 0.12) in Kadaknath

reared under deep litter system of management and 4th weeks of age Kadaknath were 119.14 gm ± 2.14 gm & 102.34 ± 2.61 gm observed in the present study in intensive and backyard rearing system respectively.

In study body weights of Kadaknath breed at 1, 2, 3 and 4 weeks of age in Kadaknath breed of poultry as 36.11± 0.12, 43.98± 0.53, 79.54± 1.16, 119.14± 2.14gm and 32.24± 0.54, 38.41± 0.42, 65.23± 1.35, 102.34± 2.61gm in Intensive and Backyard system of Kadaknath poultry rearing respectively shown in fig 1. Whereas the body weights were found higher in the present study under intensive rearing system represented in Table 1.

Table 1: Growth rate of Intensive system & Backyard rearing of Kadaknath chicks (1st to 4th weeks)

Age (wks)	Intensive rearing		Backyard rearing	
	Body weight of (gms)	Growth rate gain (gms)	Body weight of (gms)	Growth rate gain (gms)
0 day	28.54 ± 0.13	7.57	28.65±0.15	3.59
1 st week	36.11± 0.12	07.87	32.24± 0.54	06.17
2 nd weeks	43.98± 0.53	35.56	38.41± 0.42	26.82
3 rd weeks	79.54± 1.16	39.60	65.23± 1.35	37.11
4 th weeks	119.14± 2.14	97.09	102.34± 2.61	96.01

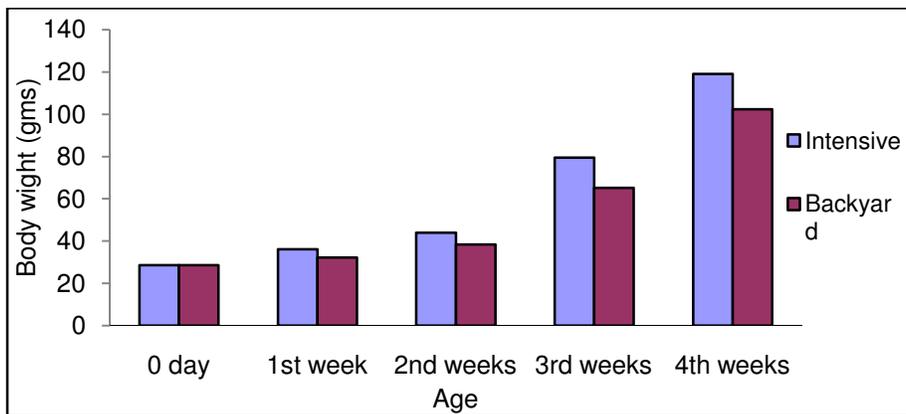


Fig 1: Growth rate of kadaknath chicks in intensive and backyard rearing

In the present study higher body weight as 216.23± 0.12, 404.58± 0.42, 601.51± 0.32, 849.73± 0.61gm and 198.35± 0.31, 378.65± 0.28, 577.52± 0.19, 789.35± 0.43 at 6,8,10 and 12 weeks age of

Kadaknath breeds (fig 2) under intensive and backyard system of rearing respectively represented in Table -2.

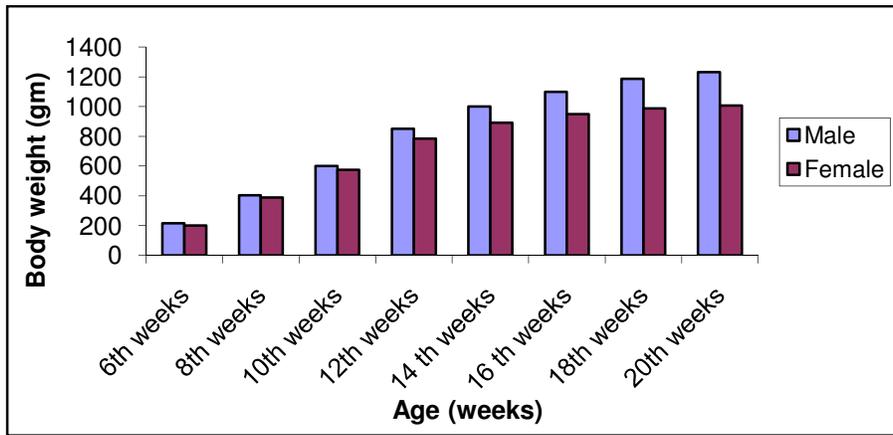


Fig 2: Intensive and Backyard system of kadaknath rearing

In experiment the higher body weight is reported as 216.23 ± 0.12, 404.58 ± 0.42, 601.51 ± 0.32, 849.73 ± 0.61gm, 999.53 ± 0.71, 1098.52 ± 0.19, 1186.92 ± 0.28, 1231.24 ± 0.34 and 198.35 ± 0.31, 378.65 ± 0.28, 577.52 ± 0.19, 789.35 ± 0.43, 895.62 ± 0.36, 954.35 ± 0.24, 989.52 ± 0.91, 1054.35 ± 0.38 at 6th, 8th, 10th, 12th, 14th, 16th, 18th, and 20th weeks of age under intensive system and backyard system of Kadaknath poultry breed rearing respectively represented in Table 2 (fig 3).

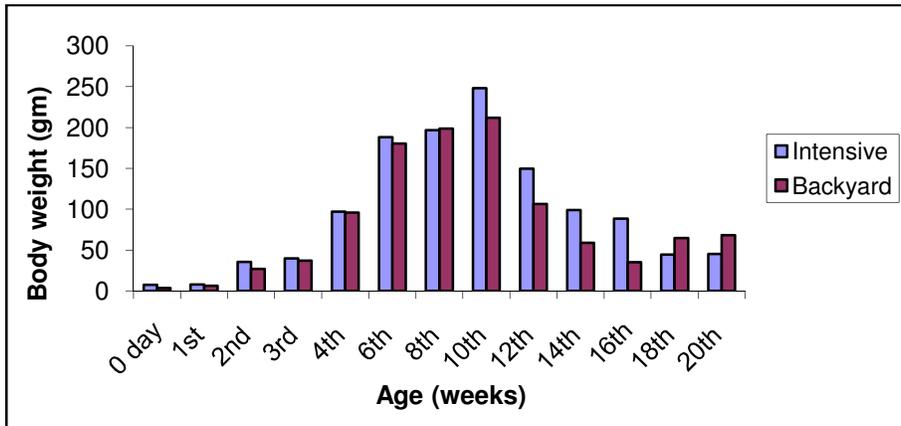


Table 3: Growth rate of Intensive system & Backyard rearing of Kadaknath (6th to 20th weeks)

Age (wks)	Intensive system Body wt.(gms)		Backyard rearing Body wt.(gms)	
	Body weight (gms)	Growth rate gain (gms)	Body weight (gms)	Growth rate gain (gms)
6th weeks	216.23 ± 0.12	188.35	198.35 ± 0.31	180.3
8th weeks	404.58 ± 0.42	196.93	378.65 ± 0.28	198.87
10th weeks	601.51 ± 0.32	248.22	577.52 ± 0.19	211.83
12th weeks	849.73 ± 0.61	149.8	789.35 ± 0.43	106.27
14th weeks	999.53 ± 0.71	98.99	895.62 ± 0.36	58.73
16th weeks	1098.52 ± 0.19	88.4	954.35 ± 0.24	35.17
18th weeks	1186.92 ± 0.28	44.32	989.52 ± 0.91	64.83
20th weeks	1231.24 ± 0.34	45.23	1054.35 ± 0.38	68.32

Sex-dimorphism in body weights of Kadaknath birds (6 to 20 weeks)

In the experimental study of Kadaknath in which higher growth rate gain as 188.35, 196.93, 248.22, 149.8, 98.99, 88.4, 44.32, 45.23gm and 186.23, 186.82, 209.31, 107.91, 57.37, 38.22, 19.17, 51.12gm (fig 4) was observed respectively in male and female at (6th to 20th weeks) in intensive system of rearing, similarly growth rate was observed as 180.3, 198.87, 211.83, 106.27, 58.73, 35.17, 64.83, 68.32gm and 153.11, 187.57, 199.36, 90.21, 65.09, 69.61, 18.26, 25.41gm respectively male and female

6th to 20th weeks age in Backyard rearing represent in table 3 (fig 5). The rate of increase in body weight from 6 to 52 weeks of age was higher in males as compared to females, thus showing clear-cut sex dimorphism (Thakur & Parmar *et al* 2006) and conducted studies in Aseel breed of poultry from 0

to 21 weeks of age (Singh *et al* 1999). It was reported higher body weights of males than females from 0 to 21 weeks of age, which is in agreement with the results reported in the present study for Kadaknath breed of poultry under intensive system and backyard rearing conditions.

Table 3: Growth rate of Male and Female in Intensive system & Backyard rearing of Kadaknath (6th to 20th weeks)

Age (wks)	Intensive system Body wt.(gms)				Backyard rearing Body wt.(gms)			
	Male		Female		Male		Female	
	Body weight (gms)	Growth rate gain (gms)	Body weight (gms)	Growth rate gain (gms)	Body weight (gms)	Growth rate gain (gms)	Body weight (gms)	Growth rate gain (gms)
6th	216.23± 0.12	188.35	201.89± 0.36	186.23	198.35± 0.31	180.3	181.17± 0.41	153.11
8th	404.58± 0.42	196.93	388.12± 0.17	186.82	378.65± 0.28	198.87	334.28± 0.22	187.57
10th	601.51± 0.32	248.22	574.94± 0.41	209.31	577.52± 0.19	211.83	521.85± 0.29	199.36
12th	849.73± 0.61	149.8	784.25± 0.34	107.91	789.35± 0.43	106.27	721.21± 0.33	90.21
14th	999.53± 0.71	98.99	892.16± 0.32	57.37	895.62± 0.36	58.73	811.42± 0.39	65.09
16th	1098.52± 0.19	88.4	949.53± 0.71	38.22	954.35± 0.24	35.17	876.51± 0.14	69.61
18th	1186.92± 0.28	44.32	987.75± 0.29	19.17	989.52± 0.91	64.83	946.12± 0.61	18.26
20th	1231.24± 0.34	45.23	1006.92± 0.31	51.12	1054.35± 0.38	68.32	964.38± 0.18	25.41

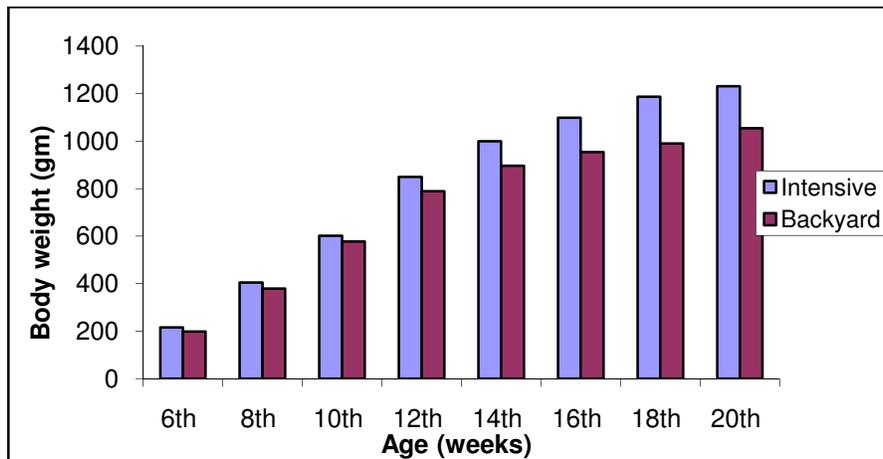


Fig 4: Growth rate of male and female in Intensive system of rearing

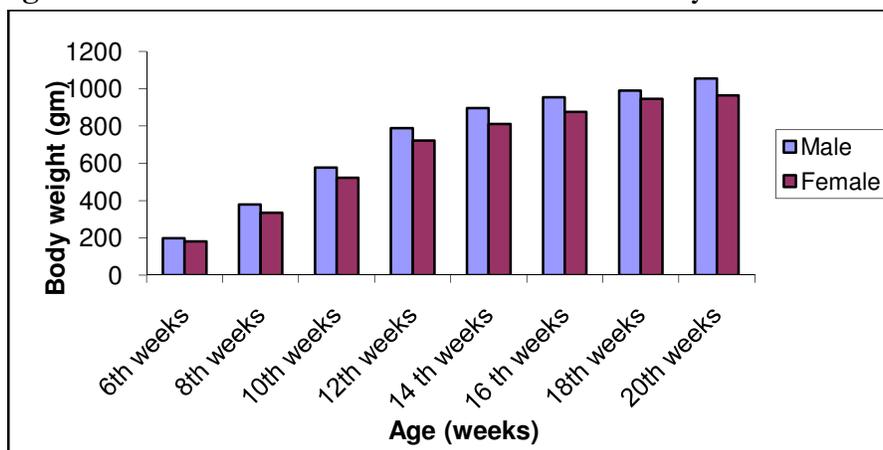


Fig 5: Growth rate of male and female in Backyard system of rearing

Conclusion

Intensive system of kadaknath breed rearing could attained 1kg body weight between 14th to 16th weeks, where as in backyard system rearing; it takes 18th to 20th week. The rate of increase in body weight was higher in male as compared to female in both system of rearing, thus showing clear sex dimorphism.

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