J Krishi Vigyan 2021, 9 (2) : 189-193 DOI : 10.5958/2349-4433.2021.00035.0

Rajasri Birds - A Source of Better Livelihood for Rural Farmers in Guntur District

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ABSTRACT

An improved variety for backyard poultry namely Rajasri bird was distributed to rural farmers belonging to SC community to improve their livelihood in the year 2020 in Guntur district. A total of 1250 day old chicks were reared under deep litter system at Krishi Vignan Kendra, Sri Venkateswara Veterinary University, Guntur district up to the age of 6 wk on balanced diet and vaccinated as per the recommended protocol. At the end of 6th week, a total of 900 birds were distributed to 45 identified SC beneficiaries free of cost. Each unit comprised of ten males and ten females (20 birds in each unit). In the present study, Rajasri birds achieved sexual maturity at the age of 165 d with an average body weight of 1300 – 1400 g. The average annual egg production/ bird was 160 – 170eggs per year with an average weight of 45 – 55 g, less mortality rate was observed in Rajasri birds. The results revealed a significant increase in income @Rs.8950/-per family per annum by sale of eggs and male birds and also a significant increase in consumption of eggs and meat among below poverty line (BPL) families.

Key words: Rural Women, Rajasri birds, Livelihood, BPL Families.

INTRODUCTION

Backyard poultry farming is an age old practice in rural India. Most of the backyard poultry farming comprises of rearing indigenous birds with poor production performance. The productivity of indigenous birds in terms of egg production is only 70 -80 eggs per bird/ year and meat production is also very less. However backyard poultry production can be easily boost up with improved varieties of chicken and can promise a better production of meat and egg. Raising of local poultry birds in backyard is an important source of livelihood for rural people of Andhra Pradesh. The most preferred quality chicken meat and egg come from backyard poultry sector, which is sold at a premium market price. Rearing of Backyard poultry has improved food security and the economic status of BPL families in India (Pica-Ciamarra and Dhawan,2010). The growing demand for indigenous poultry products andlow investment in backyard poultry sector provides opportunity for the rural farmers and women to have supplementary income generation for the family. However, the problems of low weight gain, less number of eggs per bird and high mortality of chick with indigenous birds are some of the hindrances in backyard poultry which need to be overcome through introduction of improved variety of birds with better performance levels. In order to improve the livelihoods and nutritional security of BPL families through backyard poultry rearing P. V Narsimha Rao Telangana Veterinary University, Rajendranagar, Hyderabad has developed a variety for backyard rearing named Rajasri which is medium in size with long shanks and colourful plumage resembling indigenous birds (Srinivas *et al,* 2017). Moreover, it is an egg type bird with laying capacity of 160-180 eggs per annum. Eggs are brown in colour similar to desi egg and these birds can withstand adverse climate conditions. The present study was undertaken to determine the

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performance of Rajasri birds and its impact on the livelihood and nutritional security of BPL families under the free range system in rural areas of Guntur district in Andhra Pradesh.

MATERIALS AND METHODS

A total of 1250 day- old chicks were reared under deep litter system at Krishi Vignan Kendra, Sri Venkateswara Veterinary University, Guntur district up to the age of 6 weeks on balanced diet and vaccinated as per the recommended protocol. At the end of 6thweek, a total of 900 birds were distributed to 45 identified beneficiaries from SC community belonging to BPL families of rural areas of Guntur district free of cost. Each unit comprised of ten males and ten females(20 birds in each unit). Before distribution a training programme was organized to educate the farmers on vaccination, management and disease prevention in the birds. The study was carried out from March 2020 to January 2021 and data on production performance of Rajasri birds were collected from the beneficiaries through semi structured interview schedule and statistically analyzed (Snedecor and Cochran, 1994).

RESULTS AND DISCUSSION

Age at sexual maturity

In the current study, the age at sexual maturity (ASM)ranged between 150 d to 180 d with a mean of 165 d in Rajasri birds under scavenging conditions (Table 1).Where as Sharma *et al* (2004) observed it to range between 167.3and 169.3 d. However some of the beneficiaries (24.44%) have reported that birds getting sexual maturity at more than 6months. which might be due to poor scavenging feed base resource (SFBR) in that area. The early age at sexual maturity 150 – 165 d(26.66%) and 165-180 d(48.88%)was observed in Rajasri birds might be attributed to the supplementary feeding (20%) of maize and broken rice and availability of good SFBR. In contrary, Dilip *et al* (2013) reported that age at sexual maturity in Rajasri birds was lower than Aseel (187.43±1.54) and Kadaknath (196.12±1.75) birds.

Body weight at sexual maturity

Majority of the beneficiaries (75.55%) observed the body weight of 1300 -1400 g at sexual maturity of birds (Table 1). Bhat *et al*(2007) reported that the body weights of Vanaraja birds were 3150 and 2550g for male and female birds, respectively at 190 d of age under free-range conditions. Gaining of low body weight at sexual maturity is a positive sign for getting more eggs.

Mortality

Rajasriwas found to be less prone to environmental stress and easily escapes from predators in the present study. The average mortality of the birds was 1 to 3 percent (66.66%) and 4 to 6 percent (33.33%)(Table 1). Similarly, reported 5.28 percent annual mortality and Bhat *et al*(2007) reported 3-5 percent mortality under field conditions. In contrary, Tom Pennycott (2004) observed higher mortality with scavenging at farmer's backyard. Orientation of the farmers regarding vaccination schedule, disease control and follow up by technical team might also one of the reasons for reduced mortality.

Egg production and Egg weight

In the present study, 55.55% of the beneficiaries got 15-18 eggs per bird per month and 24.44% beneficiaries got more than 18 eggs per bird per month. However, few respondents reported less than 10 eggs per bird per month(Table 1). These results were at par with Padhi *et al* (1999) reported 153 eggs per annum in Nicobari hens and Sumita *et al* (2019) reported that the egg production potential was found to be highest in case of Rode Island Red breed i.e. 194 eggs/bird/year. Vij *et al* (2006) reported that Brown breed of chicken produced only 60-80 eggs annually inPunjab. Similar results were reported by Sharma *et al(*2004) and Jha and Prasad(2013). Majority of the beneficiaries (48.88%) observed the egg weight of 45-55g under field conditions (Table 1). Similar results have also been reported by Wani *et al* (2007) and Kumari and Subrahmanyeswari (2014). Whereas Thakur *et al* (2016) reported that the mean egg production up

Table 1.Production parameters of Rajasri birds.

Sr. No.	Parameter	Number of Beneficiaries	Percentage n = 45	SEM
1.	Age at sexual maturity (days)			
	150 – 165	12	26.66	14.36
	165 – 180	22	48.88	
	>180	11	24.44	
2	Body weight at sexual maturity in (g)			
	1100 – 1200	11	24.44	25.00
	1300 – 1400	34	75.55	
	>1500	11	24.44	
3	Mortality percent			
	1 – 3	30	66.66	32.5
	4 – 6	15	33.33	
4	No. of eggs produced / bird / month			
	10 – 15	9	20.00	20.98
	15 – 18	25	55.55	
	>18	11	24.44	
5	Egg weight (g)			
	40 – 45	9	20.00	16.52
	45 – 50	22	48.88	
	50 – 55	14	31.11	

to 32, 40, 52 and 72 wk of age in Vanaraja were recorded as 32.13±0.11, 50.08±0.32 89.29±1.02 and 181.12±1.53 numbers, respectively and in case of Desi chicken, the corresponding values were recorded as 11.21±0.03, 25.82±0.18, 42.57±0.72 and 76.27±0.85, respectively. The mean egg weight of Vanaraja at 32, 40 and 52 wk of age was also significantly ($P \leq 0.05$) higher than Desi birds. Chaturvedani *et al* (2015) reported that the egg productivity of desi birds was 36.5±0.2 eggs.

Economics

Income through sale of adult males Rs.3200/- and sale of eggs Rs. 6750/- (@ 4.5/- per egg) was observed among majority of the beneficiaries (Table 2). The net profit /20 birds/annum was Rs. 8950/- and net profit / bird was Rs.447.5/- felt by the farmers as an economically viable enterprise (Table 2). Daida *et al* (2012) reported that income per day /beneficiary was Rs. 28.51 without bird cost. Pica Ciamarra and Dhawan (2010) calculated the net income as per hen basis under scavenging/ semi scavenging management, and reported that the income varied between Rs.570 to Rs.1662 on 2007 price basis. Praveen *et al* (2018) reported the net average income generated by tribal women farmer through backyard poultry per annum is Rs. 7454/-. The highest returns were mainly due to better returns from eggs sale as number of eggs produced was higher, besides due to low mortality. The average annual consumption of eggs per family increased from100 eggs/annum to 600 eggs per annum. Rearing of Rajasri birds revealed a significant ($p<0.05$) increase in egg production with high hatchability resulting in significant ($p<0.05$) increase in subsidiary income and nutritional security among BPL families (Kumari and Subrahmanyeswari,2014). It was concluded

Table 2. Economics of Rajasri birds.

Sl.No.	Parameter	Amount (Rs.)
1	Night shelter, feed grains, vaccines (Rs. 50/- per bird per annum)	1,000/-
2	About 1500 eggs from 10 females @ 4.5/- each (150 per annum per bird)	6,750/-
3.	By sale 2 males @ Rs. 320/- kg. (each bird 2 kg)	3,200/-
4.	Net income per annum	9,950/-
5	Net profit per annum	8,950/- $\pm$ 264.82
6	Net profit per bird	447.5/-

that the synthetic crossbred high yielding birds were suitable in backyard system of rearing and profit making (Padhi *et al.,*2003). Similar findings were observed by Chattarjee *et al* (2002). Rajbongshi *et al* (2020) reported that the backyard farming have the potency to improve the economic status of a large majority of tribal rural families as it is a low input or no input venture and revealed that the selected progressive farmer was able to earn an annual net profit of Rs. 1, 17600.00 from poultry rearing. Lok Prakash et al (2020) reported that the Kadaknath farming is like cash crop in livestock sector. Disease resistant, hardy nature, low input, fetches high price with more demand in market made Kadaknath rearing a profitable farming. The increased income over the rearing of indigenous birds might be due to better productivity and reproductive performance of the Rajasri.

CONCLUSION

From the present study, it can be concluded that Rajasri bird performs better under scavenging conditions to uplift socio economic status of BPL families belonging to SC community. A significant increase in subsidiary income (@ Rs. 8950/- per family per annum) by sale of eggs and male birds was observed. It was also noticed that there was significant increase in consumption of eggs and meat among beneficiary families. Besides the sale of eggs and meat, the farmers were also generating income by continuing the enterprise by reproducing the chicks by using local hens for brooding.

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Received on 15/04/2021 Accepted on 20/05/2021