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Research Article

Assessment of suitable Poultry Breeds for Backyard Farming System in Kanyakumari District

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ABSTRACT

Assessment of improved breeds viz., Gramapriya and TANUVAS Aseel in terms of egg production and feasibility for backyard rearing was conducted as on farm testing (OFT) by ICAR-KVK Kanyakumari during 2018-2019 to assess its suitability and performance under the backyard farming system. The improved breeds viz., TANUVAS Aseel and Grama priya were assessed for their performance on egg production and body weight with local desi breeds. Among the above breeds, egg production of Gramapriya was higher with annual egg production (175 eggs) when compared to TANUVAS Aseel (143 eggs) and farmers local desi breeds (75 eggs). The Body weight at 20th week was also higher in Gramapriya (1.70 kg) followed by TANUVAS Aseel (1.58 kg) and farmers local desi breeds (1.35kg). The performance of Gramapriya breed was better than TANUVAS Aseel chicken in terms of annual egg production and body weight under backyard system of rearing. The B: C ratio was higher for Gramapriya (4.27) compared to 3.80 for TANUVAS Aseel and 3.34 for local desi breed. The comparative analysis infers that Gramapriya breed is a suitable breed that can be promoted in large scale in the backyard poultry farming in Kanyakumari district.

Keywords: *TANUVAS Aseel, Grama priya, Egg production, Body weight, Backyard poultry.*

INTRODUCTION

Livestock and poultry rearing is an essential factor for improving the livelihood security of the rural people in India. Farmers usually rear desi type chicken having low egg and meat production potential. Most of the backyard poultry production comprises of rearing indigenous birds with poor production performances (Pathak & Nath, 2013; Chakravarthi et al., 2014; Reetha et al., 2016 & Patra & Singh, 2016). Backyard poultry production is an old age profession of rural families of India. It is the most potential source for subsidiary income for landless and poor farmers. It is an enterprise with low initial investment but higher economic returns and can easily be managed by women, children and old aged persons of the households.

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Poultry is one of the fastest growing sectors that support protein requirements for millions in India. Presently poultry meat and egg is one among the best and cheapest sources for meeting out the per capita requirement of protein and energy of people of India. Though India has shown a tremendous growth in poultry production over decades but poultry farming in individual household level is still lagging behind and always found neglected as they were rearing desi type chickens having low egg and meat production potential. The potentiality of desi birds in terms of egg production is only 50 to 60 eggs/ bird/ year and meat production is also very low (Patra & Singh, 2016). However, the backyard poultry production system can be enhanced by adopting improved breeds of chicken that can promise better production of meat and egg. Backyard poultry is a handy and promising enterprise to improve the socio-economic status of farmers in rural areas with low-cost initial investment and high economic return along with guarantee for improving protein deficiency among the poor (Chakrabarti et al., 2014). It is the best alternative for the landless, women and small farmers to enhance their income with low input which needs a breed upgradation with newly varieties of chicken. Improved breeds have been introduced by various Research and Developmental organizations. Gramapriya is a multicolored egg purpose chicken variety developed at Directorate of Poultry Research, Hyderabad for free range and rural backyard rearing. TANUVAS Aseel is a new variety of native chicken developed at Poultry Research Station, TANUVAS, Nandanam, Tamil Nadu.

Assessment of improved breeds viz., Gramapriya and TANUVAS Aseel in terms of egg production and feasibility for backyard rearing was conducted as on farm testing (OFT) by ICAR-KVK Kanyakumari during 2018-2019 to assess its suitability and performance under the backyard farming system.

MATERIALS AND METHODS

The present study was conducted in the Kurenthencode and Thuckalay blocks of Kanyakumari district during 2018-2019. The selected Poultry farmers were trained on all scientific Desi bird training techniques like brooding, deworming, Vaccination etc. Each farmer was supported with of 20 unsexed day old chicks which include 10 Gramapriya chicks, 10 TANUVAS Aseel Chicks. There improved breeds were compared with farmer's the local desi breed in this study.

The Scientist of Krishi Vigyan Kendra made periodical visit to farmer's field and recorded production parameters. viz., Body weight at 12 th week and 20th week age (Kg), Average age of first egg laying and Average annual egg production. The economic parameters viz., Gross cost, Gross return and Benefit cost ratio was calculated based on sale of eggs and live birds. Simple percentage analysis was used to analyze the data.

RESULTS AND DISCUSSION

The need for this on farm trial by Krishi Vigyan Kendra was conducted as rural landless people in the district used to get less egg production and low economic returns from local breeds and high mortality in native breeds. The two improved breeds viz., Gramapriya and TANUVAS Aseel were compared with the local desi breed in ten farmers household. Each unit comprised of 10 chicks, totaling to 300 chicks. The un-sexed day old chicks were procured from College of Poultry Production and Management, Hosur and distributed to the selected farmers rearing local desi breed in their backyard. Among the participating farmers, those having recently hatched chicks of local breed were used as control comprising of 10 chicks/unit for the comparison. Before the trial was initiated, the livelihood status of participant farmers were collected which formed the basis of selection and they were trained on various aspects of care and management of chicks in early life, required medication, feed supplementation, vaccination etc. In addition to that the participatory approach of the trial was also elucidated towards successful accomplishment. Upon implementation of the trial the KVK scientists visited the units at regular intervals and recorded the observations

on each parameters, provided further guidance and demonstrated vaccination technique to them for further use. The trial continued for a period of 12 months. The results of the trial are presented in Table 1.

Grama priya birds attained sexual maturity (age at 1st lay) at an average age of 150 days compared to 160days for TANUVAS Aseel and 190 days for local desi breeds. The body weight gain at 20th week was higher in Grama priya (1.70 kg) followed by 1.58kg in TANUVAS Aseel and 1.35 kg in local desi breed. Moreover, Grama priya breed proved to be a dual purpose bird with its superior egg laying capacity (175eggs/bird/year) compared to the 143 for TANUVAS Aseel and 75 for local breeds.

A comparative economic analysis of rearing poultry during the trial is presented below in Table 2. The economics of rearing Gramapriya poultry was found to be encouraging in terms of income generation as this breed achieved a better benefit-cost (B: C) ratio. In this OFT trail the B: C ratio with Grama priya was found to be 4.27 compared to 3.80 for TANUVAS Aseel and 3.34 for local desi breed. The gross return from Gramapriya breeds was Rs. 10695/-.comprising the sale of eggs and live birds which infers that the breed is better in terms of investment and returns. Farmers had a net profit of Rs. 8195/- in contrast to the gross return of Rs. 5616/- for TANUVAS Aseel and Rs. 3518/- from local desi breed. This economic analysis infers that Grama priya provides better income to the rural poultry farmers and helps in augmenting the production of nutritious food products from rural poultry sector. Studies from many states of India indicates that the improved breeds had significantly higher achievement than the local chicken in terms of body weight, egg weight, egg production and age at sexual maturity (Vetrivel & Chandrakumarmangalam**,** 2013**;** Mohanty & Nayak, 2011; Yadhav & Khan, 2011; Padhi, 2016 & Vinothraj et al., 2019). The comparative analysis infers that Grama priya is a suitable breed and can be promoted in large scale in the backyard poultry farming in Kanyakumari district.

Table 1: Comparative performance of Gramapriya, TANUVAS Aseel and Local desi breed under backyard farming system

Particulars	Gramapriya	TANUVAS Aseel	Local desi breed
Body weight at 12 th week	1.25	1.10	0.90
Body weight at 20 th week (Kg)	1.70	1.58	1.35
Average age at egg laying (Days)	150	165	190
Annual egg production	175	143	75
Average Egg weight at 40th weeks (g)	65	58	55
Colour of egg	Brown	Brown	Brown

Table 2: Economics of rearing Gramapriya, TANUVAS Aseel and Local desi in the backyard farming system

Breed/ Breed	Unit size	Mortality	Survival	Gross cost/ Unit (Rs)	Products	Revenue	Gross Return /Unit (Rs)	Net Return /Unit (Rs)	BCR
Gramapriya	10	1	9	2500	1050 eggs (Av. 175 eggs/hen from 6 hens)	8400 (Rs.8 / egg)	10695	8195	4.27
					15.3 kg live wt. (Av.1.70kg/bird from 9 birds)	2295 (Rs.150/kg)			
TANUVAS Aseel	10	2	8	2000	715 eggs (Av. 143 eggs/hen from 5 hens)	5720 (Rs.8 / egg)	7616	5616	3.80
					12.64 kg live wt. (Av.1.58kg/bird from 8 birds)	1896 (Rs.150/kg)			
Local desi strain	10	3	7	1500	450 eggs (Av. 75 eggs/hen from 6 hens)	3600 (Rs.8 / egg)	5018	3518	3.34
					9.45 kg live wt. (Av.1.35kg/bird from 7 birds)	1418 (Rs.150/kg)			

CONCLUSION

From the study, it can be concluded that Gramapriya birds performs better than TANUVAS Aseel in terms of annual egg production and body weight under backyard system of rearing. So, farmers from rural areas of Kanyakumari district can rear Gramapriya for their livelihood and nutritional security.

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