



Backyard Poultry Rearing: An Effective Tool for Enhancement of Livelihood of Farm Family

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ABSTRACT

In the present study, a total of four different poultry breeds such as Vanaraja, RIR, Black Rock and Pallishree were evaluated for its suitability under rural backyard poultry rearing system. Out of these four, two breeds were dual purpose (Vanraja and RIR) and two were colour synthetic broiler breed (Black Rock and Pallishree). It was evident that the colour synthetic broiler variety Palishree birds attained the highest body weight of 3.09 kg in 16 wk period compared to that of other breeds, however the egg production potential was found to be highest in case of RIR breed *i.e.* 194 eggs/bird/yr and Vanaraja birds were performed well as dual purpose breed. Hence, it may be concluded that Rhode Island Red birds were best suited under the local agro-climatic condition for better egg production, Vanaraja birds serve better as a dual purpose and Pallishree birds for meat purpose. The backyard poultry system with improved birds provides a solution to food security to the rural masses thus, paving a way for sustainable livestock production.

Key Words: Backyard, Birds, Broilers, Eggs, Livelihood, Meat, Poultry.

INTRODUCTION

The secondary agriculture plays a vital role in the economic development of the farming community of the district. In this sector mostly enterprises like poultry, dairy, goatry, mushroom and fishery in particular serve as an additional livelihood option for the rural community in all the blocks of the district. The major livestock resources of the district are cattle, goat and poultry (chicken & duck) which act as an important source of additional income for the farm women. Backyard farming has over the years contributed to a great extent to the agrarian economy of different countries. In the same way, rural backyard poultry production plays a vital role in the rapidly growing economy. It provides livelihood security to the family in addition to securing the availability of food. Unemployed youth and women can also earn an income through poultry farming (Padhi, 2016). It require hardly any infrastructure set-up and besides supplementary and steady generation, rural backyard poultry can improve food sufficiency, can also unleash human productivity, encourage

women and unemployed youth, and bridge the gap between demand for production of eggs and meat (Priyadarshini, 2016). The role of backyard poultry farming in sustaining and enhancing poor peoples' livelihoods in developing countries is well recognized (Ahuja *et al*, 2008). However, backyard poultry farming is the cornerstone of poultry farming in the district but its growth is limited due to high seasonal mortality, low productivity and sub optimal management (Rawat *et al*, 2016). Hence, Krishi Vigyan Kendra, Angul is promoting backyard poultry farming in semi intensive system with improved rural type birds. The study was carried out to know the economic impact of backyard poultry farming in different agro-ecological situations of Angul district of Odisha in order to understand the role backyard poultry farming in sustaining poor people's livelihoods, its contribution to income, household nutrition, and empowerment.

MATERIALS AND METHODS

The present study was based on the front line demonstrations (FLD) conducted by KVK on

promoting backyard poultry in Angul district. The respondents of the study were the farm women who were involved in backyard poultry rearing in operational villages. Primary data were collected from the participating communities and secondary data pertaining to the demonstrations were collected from the Annual Reports of KVK and Veterinary department. The data were collected from 40 respondents of 6 villages comprising from 3 blocks through a pre-tested structured interview schedule and were subjected to statistical analysis. The data for the study was analyzed in 2018 by considering the works from 2013-14 to 2017-18. The observations were recorded for other parameters *viz.* total egg production, average live body weight of birds and B: C ratio.

RESULT AND DISCUSSION

In operational villages of KVK, a total of 860 poultry birds were provided among 40 beneficiaries and household wise backyard poultry distribution, mortality from backyard poultry farming system are depicted in Table 1. Utmost care was taken during the backyard poultry farming by the farm women but there were reports of mortality due to attack by wild animals and diseases like Coccidiosis, Marek's disease, RD and IBD.

For the purpose of egg and meat production, different improved birds were reared in small numbers (20-26) under proper brooding and feed management up to 6 wk and later released in free range after 6 wk of age. It was observed that when the chicks distributed after 28-30d after proper

Table 1. FLDs conducted by KVK on backyard poultry.

Year	Problem diagnosed	Intervention	Characteristics of Technology / Variety / Product / Enterprise	No. of trials	Duration of study (month)
2013-14	Low income from Desi breed	Demonstration on Backyard rearing of poultry for farm women var. Vanaraja	Dual purpose poultry bird, weigh in 5 m to 2.5-3kg/bird and egg laying was 150-180 eggs/yr.	10	18
2014-15	Low egg production in Vanaraja birds and high mortality due to disease incidence	Demonstration on Dual purpose high yielding backyard poultry rearing var. RIR	Rearing of dual purpose high yielding poultry breed weighing between 2-2.5 kg and laying more than 200 large brown shelled eggs.	10	18
2015-16	Low egg production in Deshi birds and high mortality due to disease incidence	Demonstration on colour synthetic meat type backyard poultry var. BlackRock	Weight gain in 7 wk-1.2 kg Egg/bird/annum-120 eggs	10	4
2016-17	Low egg production in Deshi birds and high mortality due to disease incidence	Demonstration on backyard poultry var. Pallishree	Weight gain in 7 wk-2 kg Eggs/bird/annum-95 eggs	5	4
2017-18	Low egg production in Banaraja birds and high mortality due to disease incidence	Demonstration on backyard poultry var. Pallishree	Weight gain in 7 wk-2 kg Eggs/bird/annum-95 nos	5	4

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Table2. Interventions undertaken by KVK.

Year	Poultry Breed	Number of Beneficiaries	Number of poultry chicks distributed	Age of chicks at the time of distribution	Mortality (%)
2013-14	Vanaraja	10	200	28 d	5
2014-15	RIR	10	260	28 d	8
2015-16	Blackrock	10	200	Day old	10
2016-17	Pallishree	5	100	Day old	10
2017-18	Pallishree	5	100	30 d old	5

brooding and vaccination, the mortality rate was less than the day old (Table 2). Low cost brooding materials like metal or wooden material, electric bulbs, guard for the purpose of brooding were not used by the beneficiaries and thus, scientific management with proper vaccination are very essential to reduce mortality.

In the present study, four different poultry breeds such as Vanaraja, RIR, BlackRock, Pallishree were subjected for a comparative study under rural backyard poultry. It was noticed that all the breeds performed better than that of local chicken, however there were variation in performances between these four breeds. It was demonstrated that the colour synthetic broiler variety Pallishree birds attained the highest body weight in 16 wk period compared to that of other breeds; however the egg production potential of this chicken variety was poor (Table 3). Hence, a farm family can rear these birds for meat purpose, so that they can maintain three batches/cycles of birds and earn more compared to other breeds. Similarly, the egg production potential was found to be highest in case of RIR breed *i.e.* 194

eggs/bird/yr and Vanaraja birds were performed well as dual purpose breed. It was also studied that a low mortality percentage was obtained in case of Pallishree birds in compared to other breeds. In a study, Singh *et al* (2018) reported that rural and tribal areas of Jammu province can rear Vanaraja and Gramapriya birds for their livelihood and nutritional security. Likewise, Khawaja *et al*,(2012) reported that RIR chickens performed better than Fayoumi and Desi chickens.

It was found that the backyard poultry production system in Angul district was traditional and poorly remunerative. Therefore, the present intervention of dual purpose improved breed and colour synthetic broiler birds under balanced feeding management laid more number of eggs and meat production in turn which improved the livelihood security among the tribal people.

As most of the poor and marginal farmers of tribal blocks of Angul district have very limited capital assets and depend on backyard poultry farming for their livelihoods, growth of the rural poultry sector can definitely contribute to poverty

Table 3. Results of the interventions on semi intensive backyard poultry rearing system.

Year	Breed	Av. wt. of birds in 16 wk / bird(kg)		% Change in weight	Av. Annual Egg Production/bird(No.)	
		FP	RP			
2013-14	Vanaraja	0.65±0.021	1.4 ±0.017	115	48	152
2014-15	RIR	1.4±0.036	1.6 ±0.023	14	170	194
2015-16	BlackRock	0.65± 0.021	1.6± 0.013	146	-	-
2016-17	Pallishree	1.2±0.017	2.75±0.024	129	-	-
2017-18	Pallishree	1.85± 0.026	3.09± 0.027	67	-	-

FP : Farmer Practices RR : Recommended Practices

Table 4. Economic analysis of the Interventions.

Year	Breed	Cost (Rs./Bird)		Gross Return (Rs./Bird)		Net Return (Rs./Bird)		B:C Ratio	
		Demo	Local	Demo	Local	Demo	Local	Demo	Local
2013-14	Vanaraja	120	40	395	85	275	45	3.29	2.12
2014-15	RIR	330	330	1186	1030	856	700	3.59	3.12
2015-16	Black Rock	36	24	208	76	172	52	5.77	3.16
2016-17	Pallishree	78	76	392	153	314	77	5.01	2.01
2017-18	Pallishree	133	137	471	261	338	128	3.54	1.93

alleviation and act as ATM at the time of need. It can not only give employment to them but can also play an important role in women empowerment. The threats in backyard poultry farming include outbreak of diseases, predators, theft and shortage of feed and housing problems at night. The farmer also must be given training on rearing of backyard poultry to equip them with relevant skills to merge scientific methods in poultry management for improving their productivity. Thakur *et al* (2016) concluded that capacity building of farmers was an effective tool to augment poultry production and such trainings should be organized at regular interval to sustain the enterprise.

CONCLUSION

It may be concluded that backyard poultry farming is an effective tool to strengthen the livelihood of resource poor farmers and landless labourers in rural area with low-cost initial investment. It provides eggs and meat for family consumption and additional income to the rural households. Improved variety and crosses of local birds with superior germ plasm are well adapted to local agro-climatic condition and should be incorporated in the farming system. Rhode Island Red birds were best suited with the local agro-climatic condition for better egg production, Vanaraja birds serve better as a dual purpose, and Pallishree birds performed well under backyard for meat purpose. Flocks vaccinated against Marek’s, Newcastle disease and Gumboro disease should be practiced for better performance.

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