

ECONOMICS OF CHICKEN FARMING UNDER SMALL SCALE SYSTEM

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Received : 25.09.2012, Accepted : 20.04.2013

ABSTRACT

An investigation was undertaken with 55 units of poultry farmers and farm units for evaluation of small scale farm economics of 3 types of chicken i. e. Rhode Island Red (RIR), Vanaraja and Local (non-descript) under 3 systems of rearing viz. intensive deep litter, semi-intensive and improved free range system located at Deptt. of LPM, Kolkata; Namkhana & Gosaba block of South 24 parganas, West Bengal. Small scale farm economics were calculated in terms of Benefit Cost Ratio (BCR). It was observed that in the intensive deep litter system of management there was chance of loss in case of Local (non-descript) farming but it was comparatively beneficial for both of RIR and Vanaraja farming. Among them RIR birds showed good result (0.14 ± 0.05) than Vanaraja (0.05 ± 0.05) on BCR. In case of semi-intensive system of management it was revealed that Vanaraja birds were performed better (0.34 ± 0.05) than RIR (0.16 ± 0.05) and Local (0.10 ± 0.04). In case of improved free range system Vanaraja birds also were performed good (0.47 ± 0.05) than Local (0.38 ± 0.03) and RIR (0.24 ± 0.05). The BCR of 3 farming systems (0.094 ± 0.033 , 0.201 ± 0.024 and 0.363 ± 0.024) in intensive deep litter, semi-intensive and improved free range system respectively were significantly ($P < 0.05$) variable but between birds it was revealed that the Local birds (0.238 ± 0.024) were non-significant to Vanaraja (0.286 ± 0.026) & RIR (0.181 ± 0.027) but BCR of both RIR & Vanaraja were significantly ($P < 0.05$) different to each other.

Key words: Local non-descript chicken, Rhode Island Red, Vanaraja, intensive deep litter rearing, semi-intensive system, improved free range system, BCR.

In India, the rural backyard poultry is a major part of the activity portfolio of the majority of rural households. It contributes nearly 30 % of the national egg production² and improves household food security and income. Small improvements in backyard poultry production systems could directly contribute to rural development and accelerate poverty reduction in West Bengal⁵. West Bengal has a long tradition to Backyard poultry. Keeping the above facts in view, the present study is being undertaken with the objectives to find out growth performance of Local (non-descript), Rhode Island Red and Vanaraja under three systems of rearing.

The present study was conducted at the Department of Livestock Production Management, Kolkata and Gosaba & Namkhana of South 24 Parganas district of West Bengal. The study was conducted for a period from October 2007 to March, 2009. One hundred day old chicks of each type i. e. Vanaraja, RIR and Local Non-descripts were procured for rearing under deep litter, Semi-intensive and improved free range system. All the day old chicks were kept up to 6 weeks in brooding under uniform and standard managerial condition. However, Local Nondescript day old chicks under improved free range system were kept free for natural brooding up to 6 weeks of age. From 7th week of age, Vanaraja, RIR and Local chicks were kept free in improved free range system (local feed/home made feed given) and semi-intensive system (feed given at morning only). From the day old to till the end

1. Part of Ph.D. thesis.

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of experiment all the birds were given same health care practices including vaccination and deworming. Starter ration was offered up to 6 weeks and then grower ration was provided from 7-24 weeks. Weighted amount of feed was offered in two times morning and evening and refusal collected daily to calculate the total feed intake in intensive system. In semi-intensive and improved free range system, after 7th week onwards, feed was given only at morning. To assess the BCR in the study different types of inputs were given in different systems of management. The output also was estimated for the BCR. The breakups of inputs and outputs are presented in Table 1. The BCR was calculated as the ratio between the total gross receipt and total cost of inputs. The data obtained from the experiment were statistically analyzed and interpreted for types according to Statistical Package for Social Science¹⁰ and processed in software. Probability of $P < 0.05$ was described as significant.

The calculated Benefit Cost Ratio (BCR) was tabulated at Table 2. It was observed that in the intensive deep litter system of management there was chance of loss in case of Local nondescript farming, but it was beneficial for both of RIR &

Vanaraja farming. Among them RIR birds showed good result (0.14 ± 0.05) than Vanaraja (0.05 ± 0.05) so far as BCR was concerned. In semiintensive system of management it was revealed that Vanaraja birds were performed better (0.34 ± 0.05) than RIR (0.16 ± 0.05) & Local (0.10 ± 0.04). In case of improved free range system Vanaraja birds were highly acceptable (0.47 ± 0.05) than Local (0.38 ± 0.03) & RIR (0.24 ± 0.05).

The BCR of farms among 3 types of birds were significantly ($P < 0.05$) variable but between birds it was revealed that the Local birds were non-significant to Vanaraja and RIR but both RIR and Vanaraja were significantly ($P < 0.05$) different to each other.

The rearing of indigenous chicken by rural populace was generally considered low input and low output production system^{1 & 3}. However, rearing of local chicken with improved management, proper vaccination & disease control & selection of good one has yielded good results in tribal areas of Jabalpur, M. P. as reported by some scientists^{4 & 6}. Similar type of findings has been reported in Bangladesh⁷ or in South Africa⁹ or in China⁸ where the native chicken production has been potentiated by improved management and health care.

Table – 1 Input (in Rs.) and Output (in Rs.) parameters under rearing systems followed

Input		
Intensive deep litter	Semi intensive	Improved free range
Day old RIR @ Rs. 9.00/pc	Day old RIR @ Rs. 9.00/pc	Day old RIR @ Rs. 9.00/pc
Day old Vanaraja @ Rs. 16.00/pc	Day old Vanaraja @ Rs. 16.00/pc	Day old Vanaraja @ Rs. 16.00/pc
Day old Desi @ Rs. 12.00/pc	Day old Desi @ Rs. 12.00/pc	Day old Desi @ Rs. 12.00/pc
Feed @ Rs. 18.00/kg	Feed @ Rs. 18.00/kg	Feed @ Rs. 18.00/kg (Brooding) Local Feed @ Rs. 10.00/kg. (Growing)
Medicine & Vaccine - on the basis of MRP	Medicine & Vaccine - on the basis of MRP	Medicine & Vaccine - on the basis of MRP
Extra expenditure (Litter, Fuel, Feeder, Drinker)- 100/unit	Extra expenditure (Net, Fuel, Feeder, Drinker)- 100/unit	Extra expenditure (Net, Fuel, Feeder, Drinker)- 100/unit

Contd...

Intensive deep litter	Semi intensive	Improved free range
Egg @ Rs. 2.5/pc	Egg @ Rs. 2.5/pc	Egg @ Rs. 2.5/pc
Meat- Per kg live body wt RIR-Rs. 80.00 Vanaraja-Rs. 90.00 Desi-Rs. 90.00	Meat- Per kg live body wt RIR-Rs. 80.00 Vanaraja-Rs. 90.00 Desi-Rs. 90.00	Meat- Per kg live body wt RIR-Rs. 80.00 Vanaraja-Rs. 90.00 Desi-Rs. 90.00
Manure @ Rs. 6.00/kg	Manure @ Rs. 6.00/kg
Closing Stock- Laying birds & 10% depreciation of other expenditure	Closing Stock- Laying birds & 10% depreciation of other expenditure	Closing Stock- Laying birds & 10% depreciation of other expenditure

Table - 2 Least square mean \pm SE Benefit Cost Ratio (BCR) of three types of farming system, three types of birds.

OVERALL	Intensive deep litter (0.094 \pm 0.033)	Semi intensive (0.201 \pm 0.024)	Improved free range (0.363 \pm 0.024)
RIR (0.181 \pm 0.027)	0.137 \pm 0.05	0.164 \pm 0.045	0.243 \pm 0.045
Vanaraja (0.286 \pm 0.026)	0.05 \pm 0.045	0.337 \pm 0.045	0.471 \pm 0.045
Local Non-descript (0.238 \pm 0.024)	-	0.101 \pm 0.035	0.375 \pm 0.33

CONCLUSION

It was concluded that all the birds showed loss in the three systems of rearing. The BCR values were less than 1.00. The overall BCR value was significantly ($P < 0.05$) higher under improved free range system. The Vanaraja and Local chicken showed comparatively better BCR values under improved free range system than the RIR birds.

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