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# Performance of Vanaraja bird in Churachandpur district of Manipur

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**Abstract**

Backyard poultry plays an important role for sustainable livelihood especially for rural farmers. Majority of the people usually reared nondescript local indigenous birds in the backyard system which is low in production and productivity. Therefore, the present study was undertaken to assess the performance of Vanaraja, a high yielding dual purpose birds in the backyard system of Churachandpur district of Manipur under Front line Demonstration programme during the year 2016 and 2017. Parameters including body weight, age at first egg, annual egg production and egg quality parameters were assessed during the present study. The physical qualities of egg like egg weight, length, width, shape index, shell weight and thickness, albumin weight, height and index, yolk weight, height and index and Hauge index was also recorded. The results indicate that Vanaraja female and male birds attained average body weights of 2537.93±37.99gm and 2920.37±64.73gm respectively at 6 months age. The average age at first egg lay was recorded 160.00±1.49 days; Annual egg production per bird was 151.48±1.89. The egg weight, length and width of vanaraja bird under backyard were recorded as 55.26±0.68 gm, 5.24±0.12 cm and 3.62±0.11cm respectively. Shape index, Albumin index and yolk index were found to be 68.79±1.13, 0.11±0.00 and 0.46±0.02 respectively. Shell weight was 4.49±0.05g and Shell thickness 0.36±0.00 mm. Albumin Width and height were 52.54±0.66 µm and 6.00±0.03 respectively. Yolk Width and Height were recorded as 35.50±0.76 and 15.97±0.25 respectively. In the present study, the Hauge Unit was found to be78.51±0.34. The study revealed that the bird is well adapted to the local traditional managemental practices and has potential to perform well in terms of production under low investment.

**Keywords:** Performance, Vanaraja birds, backyard rearing, Manipur

## Introduction

Backyard poultry farming is an age old practice among the rural farmers of north eastern region and plays an important role for sustainable livelihood. Backyard poultry farming by and large was a low input or no input venture (Singh and Johari, 1990; Saha, 2003) [1, 2]. Besides income generation, backyard poultry helps in alleviation of malnutrition of the rural people through production of valuable animal protein and empowers rural women. Vanaraja, a dual purpose chicken has become popular among the rural people as one of the income generating activity especially for the rural women (Niranjan *et al*., 2008a) [3]. Churachandpur is a hill district that is situated in the south west part of Manipur. Most of the rural household (83 per cent) in the district rear nondescript local birds, which is low in productivity. They usually prefer the colour and hardiness of local birds compared to commercial broilers. Meat and eggs of vanaraja are preferred by the local consumers of the region and readily accepted by the rural farmers owing to its similarity of the typical appearance of the local birds and characteristically very low operational cost but significant returns and its potential to perform well under the agro-climatic condition of Manipur, Suresh *et al*. (2005) [4]. Therefore, the present study was undertaken to assess the performance of Vanaraja, a high yielding dual purpose birds in the backyard system of Churachandpur district of Manipur.

## Materials and Methods

Two hundred numbers of 21 days old vanaraja chicks were distributed to 8 farmers of four villages in Churachandpur district with an allocation of 25 chicks per farmer, for front line demonstration during the year 2016 and 2017. The selected farmers were given training on package of practices related to poultry management under backyard system. Body weight gain at 6months age was recorded. Time to time treatment of ailing birds was provided. Parameters including Egg weight, egg quality, Age at First Egg and annual egg production were recorded during the present study. The physical qualities of egg like egg weight, length, width, shape index, shell weight and thickness, albumin weight, height and index, yolk weight, height and index and Hauge index was determined as per standard method. The recorded data were analyzed statistically by using standard methods.

## Results and Discussion

The detail performance parameter results are given in Table. 1. Vanaraja female and male birds attained average body weights of 2537.93±37.99gm and 2920.37±64.73gm

respectively at 6 months age. Suresh *et al.* (2005) [4] recorded in an average, 2.24 kg 2.58 kg and 3.38 kg in female while 2.75 kg, 3.15 kg, and 4.35 kg in male, at 20, 40, and 72 weeks of age respectively. Sonia *et al.* (2019) [5] also reported comparatively higher body weight of vanaraja birds under backyard condition. The difference in the performance might be due to the difference in the managemental practices among the farmers.

The average age at first egg lay was recorded 160.00±1.49 days, which is more or less similar to the finding of Niranjan *et al.* (2008a) [3] who also reported age at sexual maturity of 164.79 days for Vanaraja. Annual egg production per bird was 151.48±1.89. Niranjan *et al.* (2008b) [6] also reported almost similar egg production of 149.47± 4.46 numbers for Vanaraja upto 72 weeks of age. Contrary to the present finding, Sonia *et al.* (2019) [5] reported egg production of 120-130 eggs for vanaraja birds. The present finding is in conjunction with the finding of Suresh *et al.* (2005) [4], who recorded average age at sexual maturity of 171 days, and the average egg production of 147 eggs /hen/annum.

**Table 1:** Performance parameters of Vanaraja bird under backyard system of rearing

| Parameters assessed | Mean±SE (n=200) |
|---|---|
| Body weight (gm) at 6 month age (female) | 2537.93±37.99 |
| Body weight (gm) at 6 month age (male) | 2920.37±64.73 |
| Age at first egg (days) | 160.00±1.49 |
| Annual egg production (numbers) | 151.48±1.89 |
| Egg Weight (gm) | 55.26±0.68 |
| Egg length (cm) | 5.24±0.12 |
| Egg width (cm) | 3.62±0.11 |
| Shape index | 68.79±1.13 |
| Shell weight (gm) | 4.49±0.05 |
| Shell thickness (mm) | 0.36±0.00 |
| Albumin Width (mm) | 52.54±0.66 |
| Albumin height (mm) | 6.00±0.03 |
| Albumin index | 0.11±0.00 |
| Yolk Width | 35.50±0.76 |
| Yolk Height | 15.97±0.25 |
| Yolk index | 0.46±0.02 |
| Hauge Unit | 78.51±0.34 |

The egg weight, length and width of vanaraja bird under backyard were recorded as 55.26±0.68g, 5.24±0.12 cm and 3.62±0.11cm respectively. Since egg weight is highly heritable trait, the difference among the groups might be due to utilization of exotic germ plasm for the development of Vanaraja bird, Sharma *et al*. (2006) [7]. Variations in the egg weight of vanaraja birds were reported by various workers (Chatterjee *et al*. 2007; Niranjan *et al*. 2008b; Deka *et al*. 2014; Kalita *et al*. 2015) [8, 6, 9, 10].

Shape index, Albumin index and yolk index were found to be 68.79±1.13, 0.11±0.00 and 0.46±0.02 respectively. Shell weight was 4.49±0.05g and Shell thickness 0.36±0.00 mm. The result is in agreement with Ramana *et al.* (2010) [11] who also reported an average Shell thickness of 0.39±0.007 mm. They also reported higher shape, albumin and yolk index of 74.2±0.08, 6.32±0.15 and 39.9±0.57 respectively in vanaraja birds. Albumin Width and height were 52.54±0.66 µm and 6.00±0.03 respectively. Yolk Width and Height were 35.50±0.76 and 15.97±0.25 respectively. Variations in the mean values of egg quality parameters may be attributed to the environmental effects and feeding behaviour (Kalita *et al.* 2015) [10], who also reported similar findings. In the present study, the Hauge Unit was found to be78.51±0.34, which is similar to those reported by Ramana *et al.* (2010) [11] in Vanaraja birds.

All the beneficiaries (100%) reared the birds under backyard system and provided with houses made of locally available materials like bamboo, thatch, shed net. Broken rice, maize, wheat bran, household wastes, kitchen and vegetable waste, crop by-products etc were used for feeding the birds with supplementation of small amount of concentrate feeds. Apart from domestic consumption, eggs and birds were sold within the village due to high demand and preference as the egg and meat simulates that of local indigenous birds.

## Conclusion

The present study summarized the production performance of vanaraja birds under backyard system of rearing in Churachandpur district of Manipur. The study revealed that the bird is well adapted to the local traditional managemental practices and has potential to perform well in terms of production under low investment. The birds can be reared especially by rural women and youths for income generation and to meet the protein demands of the population by managing egg and meat production.

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