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Performance of Vanaraja vs. Kamrupa Birds under Backyard System

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Abstract

The present study was conducted at farmer's field to evaluate performance of Vanaraja and Kamrup crossbred poultry under backyard system. The day old chicks of both birds were kept in artificial brooding at the KVK farm complex to ensure uninterrupted power supply round the clock up to 1 month to reduce chick mortality. After one month, chicks were supplied to farmers of adopted villages to establish 28 numbers of units (one unit per household) with 14 numbers of birds unit^{-1}. Body weight gain at monthly interval upto 6 months of age and egg production parameters were taken accordingly. It was found that both Vanaraja and Kamrupa were found good by the farmers with slightly little edge of Vanaraja over Kamrupa. Depending on the observations, actions were taken by the KVK to popularize both the breeds equally in the district afterwards.

Keywords: Backyard, Kamrupa, Performance, Vanaraja

Introduction

The performances of local birds are very poor and thereby farmers do not get expected return under village condition. However, due to high feed cost, it is not possible to rear commercial poultry under intensive system. Therefore many farmers have come forward to rear crossbred birds under backyard system. Under backyard system people generally rear 10-20 numbers of birds household^{-1} (Bhattacharyya and Sarma, 2012). Although many crossbred birds are available, performance of all birds are not same under all agro ecological situations. Therefore, it is very important to test the crossbred birds under a particular situation. Vanaraja is a multi-coloured dual purpose bird with attractive plumage developed by ICAR-PDR. Kamrupa is a multi-coloured bird for rural poultry production developed under All India Coordinated Research Project on Poultry Breeding at Assam Agriculture University, Khanapara, Guwahati, Assam. Kamrupa is three way cross from Assam local ecotype (25%), Coloured Broiler (25%) and Dalhem Red (50%) population. This variety has coloured plumage, mediocre body weight and longer shanks with optimum egg production. The present study was conducted to evaluate performance of these two birds in climatic condition of the Dibrugarh district of Assam under backyard system.

Materials and Methods

The study area comprised of two rural tribal villages comprising of sent percent Mishing tribes having around 600 households and there was tremendous scope for introducing high yielding crossbred birds, since all existing birds are local type with low egg and meat production. Before introducing any variety, the needs of the farmers were evaluated through bench mark survey of the village. Hence only promising and established breeds were introduced by proper data recording system with an aim of enhancing production in a sustainable manner and also for large scale adoption by the farmers.

For the purpose, a total of 450 day old chicks comprising of 225 birds of each variety (Vanaraja and Kamrupa) were purchased during the month of March, 2016 and kept in the artificial brooding upto 1 month of age from 10th March to 8th April providing standard feed and ad libitum water.

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The routine vaccination and standard treatment protocols were followed. The average maximum and minimum temperatures in the one month period of artificial brooding were 28.68 °C and 15.97 °C with highest and lowest being 35.4 °C and 11.6 °C, respectively (Table 1). Mortality of the chicks during this one month was recorded as 6.67%. Body weight was taken on 15th day and on one month. After one month, birds were provided to the farmers and a total of 28 units were developed comprising of 14 units under each type of birds. In each unit 14 birds were kept with not more than one unit household^{-1}. The birds were reared completely under backyard system *i.e.*, keeping the birds in free range system with locally available feeds.

However, required vaccination and treatment protocols were followed. Live body weight was recorded at 2, 3, 4 and 6 month at farmer's field on random basis @ 5 birds from each unit and individual data was aggregated to calculate average body weight of the birds in the respective month. First egg laying period and total eggs laid per year (365 days) was also recorded.

Results and Discussion

The average live body weight gain has been shown in the Table 2. It was found that there was no significant difference between the body weight gains of two birds, although Vanaraja attained about 20 grams more body weight at 6 months of age. Sarma *et al.* (2017) recorded slightly more body weight in Vanaraja birds than our findings. However, Deka *et al.* (2014) recorded similar mean body weight of Vanaraja birds at 20 weeks of age. Singh *et al.* (2017) recorded more weight gain of Vanaraja birds and found 2.7 kg bird^{-1}, against body weight of 1.7 kg recorded in our finding at 6 months. This might be due to the fact that Singh *et al.* (2017) provided 50 gm of crushed maize, broken rice boiled rice daily to each bird. If cost of 50 gm feed is calculated from 4th week to 24th week, around 7 kg feed is required per bird, which may not be cost effective from farmers' perspective. However, in our study no extra feed was supplied to the birds by the farmers and birds had to collect feed from surroundings only. Pertinent to mention that farmers of the study area do not have the habit of providing extra feed in rearing of local poultry, which are purely reared in free scavenging system. Therefore, same protocol was followed in rearing of Vanaraja and Kaprupa birds also. Meat of both the birds was highly preferred by the farmers and also high demand in the local market because of its similar body colour to local poultry. As per as egg laying characteristics is concerned, Vanaraja birds started to lay egg about 15-20 days early. Data pertaining to first egg laying stage in Vanaraja birds of our study was similar to the report of Singh *et al.* (2017) in East and South Sikkim. The average egg size of Vanaraja and Kamrupa were 51.2 and 46.1 gm respectively. Sarma *et al.* (2017) recorded more egg weight in Vanaraja birds than our findings. However, Deka *et al.* (2014) reported similar egg weight in Vanaraja under backyard system. However, mortality rate was recorded less in our findings than that of Sarma *et al.* (2017). The size of the egg during 1st quarter of the laying cycle was less in both

Table 1: Daily Temperature and Relative Humidity of 1st month of artificial brooding

Day of 2016	Temperature (°C)		Relative Humidity (%)	
	Max.	Min.	Max.	Min.
10-03	29.4	13.5	94	31
11-03	31.2	14.4	95	25
12-03	31.5	13.5	92	24
13-03	28.3	13.2	94	28
14-03	24.8	16.9	94	46
15-03	29.3	14.7	97	36
16-03	26.7	13.8	93	38
17-03	29.6	11.6	94	23
18-03	31.1	13.1	87	20
19-03	32.8	12.0	95	21
20-03	33.1	13.5	96	24
21-03	29.1	19.2	88	38
22-03	20.6	18.6	98	84
23-03	25.7	18.6	98	59
24-03	32.5	15.7	98	24
25-03	33.7	15.8	95	27
26-03	32.5	16.9	95	37
27-03	22.8	18.1	96	71
28-03	23.5	17.2	98	67
29-03	25.9	16.4	99	62
30-03	24.3	18.0	90	56
31-03	33.3	14.5	95	26
01-04	34.2	15.1	97	25
02-04	35.4	15.5	97	21
03-04	34.8	16.6	94	25
04-04	31.1	19.0	95	40
05-04	23.5	19.0	97	74
06-04	23.8	18.5	98	72
07-04	25.7	17.7	97	58
08-04	20.3	18.4	97	83

Table 2: Body weight gain of Vanaraja and Kamrupa under backyard system upto 6 months

Birds	15th Day	1 Month	2 Months	3 Months	4 Months	6 Months
Kamrupa	80.4 g	255.0 g	428.00 g	738 g	1.050 Kg	1.41 Kg
Vanaraja	94.8 g	240.2 g	498.34 g	848 g	1.105 Kg	1.71 Kg

the birds in comparison to later egg laying cycle. Average size of egg in both the birds is given in Table 3. Numbers of egg laid per hen was found 2-2.5 times higher in both the birds in comparison to local poultry. More meat and egg production of Vanaraja and Kamrupa birds in comparison to local poultry resulted in more income earning by the farmers. High Benefit - Cost ratio from backyard Vanaraja farming in comparison to local poultry under Sikkim Himalayan region was also achieved by Singh *et al.* (2019). A comparison of production traits of Vanaraja, Kamrupa and local poultry is given in the Table 4.

Table 3: Average Egg size of Vanaraja and Kamrupa birds under backyard system

Egg laying period	Vanaraja (g)	Kamrupa (g)
1st two months	46.8	38.0
Next two months	48.0	43.5
Next two months	50.3	46.0
Next two months	53.0	47.2
Next Two months	54.0	50.4
Last two months	55.0	51.3
Average	51.2	46.1

Table 4: Comparison of Vanaraja, Kamrupa and Local Poultry under backyard system

Parameters	Vanaraja	Kamrupa	Local
Body weight at 6 months	1.71 Kg	1.41 Kg	0.70-0.75 Kg
First Egg laying stage	5.5 months	6.2 months	9-10 months
Egg weight (g)	51.2 g	46.0 g	50.0 g
Egg laid year^{-1}	120-140	110-130	50-60
Rearer's preference	Slightly less or good	Good	Good

Conclusion

From the study it was found that both Vanaraja and Kamrupa performed well under agro-climatic condition of the Dibrugarh in backyard system and their production potential was also found higher than local poultry. Therefore in the later stages emphasis from KVK was given in promoting both the varieties equally in the district.

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References

Bhattacharyya, H.K., Sarma, A.K., 2012. Backyard poultry farming in North Eastern Region: A boost to rural economy. *Arunachal Review* August, 1-4.

Deka, P., Sarma, M., Nath, P., Borgohain, J.R., Mahanta, J.D., Deka, B., Phukon, M., 2014. Production performance of Vanaraja bird under traditional system of rearing in Assam. *International Journal of Livestock Research* 4(2), 81-85.

Sarma, M., Islam, R., Borah, M.K., Sharma, P., Mahanta, J.D., Kalita, N., Bhattacharyya, B.N., 2017. Comparative performance of Vanaraja, Srinidhi and Desi chicken under traditional system among tribal community of Assam. *Indian Journal of Animal Research* 52, 1-3.

Singh,M., Islam, R., Avasthe, R.K., 2019. Socio economic impact of Vanaraja Backyard Poultry farming in Sikkim Himalayas. *International Journal of Livestock Research* 9(3), 243-248.

Singh, R.K., Islam, R., Avasthe, R.K., 2017. Production performance of Vanaraja birds under traditional tribal production system of Sikkim Himalayan region. *International Journal of Livestock Research* 7(7), 153-157.