

SURVIVABILITY AND GROWTH PERFORMANCE OF VANARAJA BIRDS IN EXTENSIVE SYSTEM OF REARING

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Abstract: In this experiment to evaluate the growth performance and survivability of Vanaraja birds in extensive system of rearing, a total of 225 birds were randomly distributed on five units/ replicates and 45 birds in each replicate. Body weight and survivability was recorded weekly from day zero to 10th week of age. Data were analysed by one-way ANOVA using the GLM procedure (IBM, SPSS software 16). Body weight (g) from day zero to week 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th and 10th were observed as 36.7-38.2, 52.8-57.3, 118-128, 189-201, 263-278, 387-414, 525-542, 712-685, 765-796, 867-904 and 953-976 respectively among different five households/ replicates and survivability percentage up to 6th week was 91.1-95.6 and 10th week 88.9-95.6. In the present study we find that Vanaraja is hardy birds and has better growth performance as compare to local birds.

Keywords: Vanaraja birds, Extensive system, survivability.

Introduction

Rearing of local or indigenous breeds/ variety of poultry in backyard is a traditional activity of landless, marginal and small poultry farmers in Chhattisgarh state. The demand for local chicken and eggs is very high as compared to the broilers and layer eggs due to their better taste, texture and flavour as perceived by the local population (Sapkota et al. 2002). Indigenous and local breeds are well-adapted to the scavenging husbandry conditions and can be maintained with very low levels of input (Besbes 2009). Rural/backyard poultry farming with improved chicken varieties is slowly gaining popularity as a potential tool to alleviate protein deficit and provides subsidiary income among the rural and tribal people. Among synthetic varieties Vanaraja is a dual-purpose variety developed at Project Directorate on Poultry for backyard poultry production in rural and tribal areas (Reddy et al. 2002). This bird is multiplumage and attractive seen like desi and use for intensive and extensive farming in the rural area as a backyard rearing. Studies available with regard to growth performance and survivability of Vanaraja birds under backyard system are limited and therefore present study was conducted to evaluate the survivability and growth performance of Vanaraja birds under extensive system of rearing.

Materials and methods

An experiment was conducted in the collaboration of College of Veterinary science and Animal Husbandry Durg and household of rural people undertaken in block Dongargarh, district Rajnandgaon, western region Chhattisgarh state (India). In this study extensive system (backyard system) of rearing a total of 225 Vanaraja chicks of same hatch with uniform weight were distributed in 5 replicates (units) groups and 45 chicks in each household was taken as one replicate group. Birds were reared from day zero to 10th weeks of age by traditional rearing system. Chicks were brooded by traditional brooding system with watering and feeding facility available ad libitum up to 3rd week of age. All the protocol of medication and vaccination were followed as per schedule. The birds were fed by scavenging system and supplementation of commercial ration. Body weights of individual birds were recorded weekly and body weight gain were calculated accordingly. The weekly mortality of birds was recorded when it occurs and mortality percentage was calculated accordingly and on the basis of mortality survivability percentage was obtained. Data were analysed by one-way ANOVA using the GLM procedure (IBM, SPSS software 16). The Tuckey and post-hoc analysis was done to test the significant mean differences between the replicate groups with significant level defined at $P < 0.05$.

Result and Discussion

The result of present study pertaining to weekly body weight and body weight gain of Vanaraja birds are presented in table 1. The body weight (g) at day zero and at week 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th and 10th were observed as 36.7-38.2, 52.8-57.3, 118-128, 189-201, 263-278, 387-414, 525-542, 712-685, 765-796, 867-904 and 953-976 respectively among different five households/ replicates. In this study body weight gain (g) among five replicates at 0-3 weeks, 3-6 weeks, 6-10 weeks and 0-10 weeks were found as 151-164, 330-349, 426-447 and 915.5-939.1 respectively and there was no statistically significant ($p < 0.05$) among replicates groups. Contrast to our study the body weight of Vanaraja at 0 day, 1, 2, 3, 4, 8 and 12 weeks of age were reported higher in intensive system of rearing (Kundu et al. 2015). The body weight and gain were slow in extensive farming system due to less availability of scavenging feed (might not be balance diet) and more activity of birds taken more energy requirements as compare to the intensive system of rearing, as supported to (Islam and Nishibori 2010) the body weights and growth rates of indigenous birds are generally lower than commercial poultry birds, Haunshi et al. (2009) reported lower body weight from day

zero to 10th week in Grampriya and indigenous Miri type chicken of northeastern region in intensive system of rearing, however comparable body weight in Vanaraja.

Table 1: Growth performance of Vanaraja birds in extensive condition

Replicate	Body weight (g)										
	Zero days	1st wk	2nd wk	3rd wk	4th wk	5th wk	6th wk	7th wk	8th wk	9th wk	10th wk
R1	37.1	57.3	122	189	263	394	525	685	765	876	968
R2	37.5	55.2	120	193	274	405	542	702	777	867	953
R3	38.2	52.8	118	197	272	403	532	697	796	878	972
R4	36.7	58.3	123	201	269	387	538	688	788	904	964
R5	36.9	56.5	128	199	278	414	529	712	785	884	976
Pooled SEM	0.925	2.18	3.948	5.004	6.042	6.233	9.662	9.893	12.435	14.272	15.328

Replicate	Body weight gain(g)			
	0-3 wk	3-6 wk	6-10 wk	0-10 wk
R1	151.9	336	443	930.9
R2	155.5	349	411	915.5
R3	158.8	335	440	933.8
R4	164.3	337	426	927.3
R5	162.1	330	447	939.1
Pooled SEM	4.836	7.543	10.614	16.431

Values bearing different superscripts within the column differ significantly ($p < 0.05$)

Table 2: Survivability percentage of Vanaraja birds in extensive condition

Replicate	Cumulative weekly survivability percentage										
	Zero days	1st wk	2nd wk	3rd wk	4th wk	5th wk	6th wk	7th wk	8th wk	9th wk	10th wk
R1	100	95.6	95.6	93.3	93.3	91.1	91.1	91.1	91.1	91.1	88.9
R2	100	97.8	95.6	95.6	95.6	95.6	95.6	95.6	95.6	95.6	95.6
R3	100	97.8	97.8	95.6	95.6	95.6	93.3	93.3	93.3	91.1	91.1
R4	100	95.6	95.6	95.6	95.6	95.6	93.3	93.3	93.3	93.3	93.3
R5	100	97.8	95.6	95.6	93.3	93.3	93.3	93.3	91.1	91.1	91.1

The result of present study regarding survivability percentage of Vanaraja in extensive system of rearing are presented in table 2. From day zero to week 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th and 10th survivability percentage were found as 100, 95.6-97.8, 95.6-97.8, 93.3-95.6, 93.3-95.6, 91.1-95.6, 91.1-95.6, 91.1-95.6, 91.1-95.6, 91.1-95.6 and 88.9-95.6 respectively among five replicates. In our study the mortality of first week was more may due to traditional brooding system but overall mortality was optimum. In support to our finding Kundu et. al (2015) reported that mortality of all the genetic groups (Vanaraja, Nicobari and their crosses) was negligible during the period of study (day zero to 16th week of age). Reports regarding mortality of Vanaraja birds in extensive system of rearing are scanty in literature to compare the findings of the present work. The present experiment was concluded that the Vanaraja birds have better performance and survivability in the extensive system of rearing with less capital investment.

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