The Journal of Rural and Agricultural Research Vol. 18 No. 2, 39-41 (2018)
Received July 2018; Acceptance December 2018

Comparative Performance of Cari Nirbheek, Hitcari and Cari Shyama Bird under Backyard System of Rearing in Western Uttar Pradesh, India

D.K. SINGH, MANOJ KUMAR SINGH, P K SINGH[1], AMIT KUMAR AND AHMAD FAHIM
College of Veterinary and Animal Sci., Deptt. of Livestock Production and Management, Sardar Vallabhbhai Patel University of Agriculture and Technology, Meerut- 250110, Uttar Pradesh

Abstract

For developing the rural poultry farming, improved backyard poultry birds rearing is of very important. The present study has been undertaken to evaluate comparative production efficiency of three types of improved chicken varieties (Cari Nirbheek, Cari Shyama and Hitcari birds 100 each) upto 60 weeks of age from September (2006-2007) at Krishi Vigyan Kendra, Hastinapur, SVPUAT, Meerut Uttar Pradesh. The improved variety of Cari Nirbheek had significantly (P d" 0.01) higher body weight compared to Cari Shyama and Hitcari chicken. Age of first egg was lower (P d" 0.05) in Cari Shyama (169± 10.11 day) as compared to Hitcari (175.00± 8.59 days) and Cari Nirbheek birds (171± 9.19 days). Cari Shyama were considerably (P d" 0.05) more consistent layer among three, while Hitcari was better (P d" 0.05) than Cari Nirbheek. Overall 65% hatchability was recorded. During the study period 11.11, 8.63 and 7.67 per cent mortality were recorded in Cari Shyama, Hitcari and Cari Nirbheek birds respectively. The backyard poultry systems with improved birds provide a solution to food security to the rural masses paving a way for sustainable livestock production in India.

Keywords: Cari Nirbheek, Cari Shyama, Hitcari, backyard system, Egg production, Body weight, Hatchability, Mortality

Introduction

Poultry farming is one of the fastest growing segments of agriculture in India. It carries a pivotal position in current Indian economy and has evolved as an extremely business oriented enterprise Sreenivas et al., (2013). According to the Livestock census 2012, out of 729.2 million of total fouls, 217.5 million poultry birds are reared under backyard poultry farming. The backyard poultry farming contributes 19.8% of total egg production in India. However, our country is blessed with a variety of poultry breeds which have the potentiality both for poverty alleviation and food production, especially for 30.3 million families of rural poor farmers who are directly involved in rural poultry. Different poultry stocks developed for backyard poultry farming are being tried for their suitability to local agro climatic conditions for their further promotion in backyard farming. High environmental temperatures during summer months significantly reduce feed intake and causes slower growth rates of poultry Bonnet *et al.,* (1997).Heat stress depresses body weight and is generally accompanied by suppression of feed intake leading to decline in production. A choice of dual purpose coloured bird which have significantly contributed to the overall economy of the rural people in terms of eggs and meat (*Bhattacharya et al.,* 2005). Cari Nirbheek, a improved variety developed for free range chicken production in rural and tribal areas. Rural people of Western Uttar Pradesh keeping poultry for their livelihood and nutritional security. Majority of the farmers are still keeping 10-15 numbers of low input indigenous fowls at their backyard for both egg and meat production to meet their day to day petty expenses and nutritional security. However, the productivity of native indigenous fowls is very low due to their inherent low genetic potential. Cari Nirbheek, Cari Shyama and Hitcari, an improved high yielding chicken developed by Central Avian Research Institute, Izzatnagar, Bareilly, Uttar Pradesh and successfully introduced in various parts of our country is giving promising

[1]Directorate of Extension, Sardar Vallabhbhai Patel University of Agriculture and Technology, Meerut-250110, Uttar Pradesh

productive and reproductive performance under backyard system of management. However, information on systemic studies on the productive and reproductive performance of Cari Nirbheek, Cari Shyama and Hitcari birds under backyard system in Western Uttar Pradesh is very scanty. Keeping in view, the present study has been undertaken to assess various economic traits of Cari Nirbheek, Cari Shyam and Hitcari birds under scavenging system of rearing in Western Uttar Pradesh.

Materials and Methods

The present study has been undertaken at Krishi Vigyan Kendra, Hastinapur, Sardar Vallabhbhai Patel University of Agriculture and Technology, Meerut, Uttar Pradesh and its adjoining blocks of Meerut district to evaluate production efficiency of three types of improved chickens varieties (Cari Nirbheek, Cari Shyama and Hitcari100 each) upto 40 weeks of age during September (2006-2007). In the backyard system the birds were reared under extensive as well as semi intensive care. The birds were kept in locally made house of available material for night shelter. There were lots of similarities in feeding habits of all these birds like forage and scratch feed from vast backyard with green leafy vegetables, insects and grains of grass. Sometimes the birds were offered with chopped kitchen waste, and other household vegetable waste. These birds were fed with these feeds both morning and evening. Except offering supplementary feed at various percentage level, no extra care was given to them. The birds were vaccinated against Ranikhet and Gumboro diseases by following standard vaccination method. Body weight of birds and age of the birds at first egg stage was recorded. Observations were also recorded for other parameters viz. total egg production, first egg weight and mortality of birds. Performance of these birds was evaluated using various tests. Means and standard errors of various traits were calculated using standard statistical procedures (Snedecor and Cochran, 1989).

Results and Discussion

Both the improved varieties of Hitcari and Cari Nirbheek had significantly (Pd"0.01) higher body weight (Table 1) than Cari Shyama. Among improved varieties considered, Cari Nirbheek was heavier (Pd"0.05). Age of first egg (Table 2) was significantly lower (Pd"0.05) in Cari Shyama (169± 10.11 days) in comparison to Hitcari (175.00± 8.59 days) and Cari Nirbheek (171± 9.19 days).

All the backyard improved varieties Cari Nirbheek got better body weight than other two varieties and thus proved its better genetic potential to convert available feed into quality animal protein.Singh et al. (1997) also reported almost similar body weight of indigenous chicken at 40 weeks of age. All previous studies have reported that Cari Nirbheek was heavier than Hitcari and Cari ShyamaSingh et al. (2000).

Cari Shyama is predominantly a dual purpose variety developed at CARI, Izatnagar, Bareilly, Uttar Pradesh, and thus lower age of sexual maturity was justifiable. However, Mahapatra et al. (1988) reported that age at sexual maturity was 171 days for Kadaknath chicken. In the present investigation, relatively higher age of first egg was observed in Hitcari and Cari Nirbheek when compared to Cari Shyama. Relatively lower body weights and higher age at sexual maturity of improved varieties observed in studies may be attributed to the environmental reasons prevailed to the study area.

The study revealed that the Hitcari was considerably (Pd"0.05) more consistent in laying compared to other two groups, while Cari Nirbheek was better (Pd"0.05) than Cari Shyama. The present result on total egg production was much lower than the reports of (Singh et al. (1997) who found 165 eggs, 158 eggs and 168 eggs numbers of total egg production at 40 weeks of age in Cari Shyama, Cari Nirbheek and Hitcari chicken, respectively. In contrast to the present findings, Singh *et al.,* (*1997*) recorded higher

Table.1 Mean body weight (g) of birds at different age (wks) of birds

Age in weeks	Cari Shyama (n 100)	Hitcari (n 100)	Cari Nirbheek (n 100)
10	370.00±0.31	776.75± 6.33	954.50 ±10.23
15	646.50±9.52	954.50 ±10.23	1227.00± 14.82
20	1068.00±25.64	1499.50± 21.55	1748.50± 31.92
25	1347.00±14.46	1734.50± 23.00	2107.00± 30.52
40	1579.50±19.59	2031.75± 26.14	2280.00 ±35.06
60	1697.50±28.21	2177.50 ±30.67	2422.50± 30.24

Table.2 Average age of first egg, egg production and egg weight

Parameters	Cari Shyama	Hitcari	Cari Nirbheek
Age of first egg (d)	169± 10.11	175.00± 8.59	171± 9.19
Total eggs upto 40 weeks of age (No.)	15.33± 0.54	30.40 ±1.06	22.20± 0.88
Total eggs upto 60 weeks of age (No.)	63.27 ±1.60	100.87± 2.51	77.60± 1.74
First egg weight (g)	36.87 ±0.70	42.47 ±0.97	43.07 ±0.75
Egg wt at 40 wks of age (g)	53± 3.13	62± 2.69	53±3.41

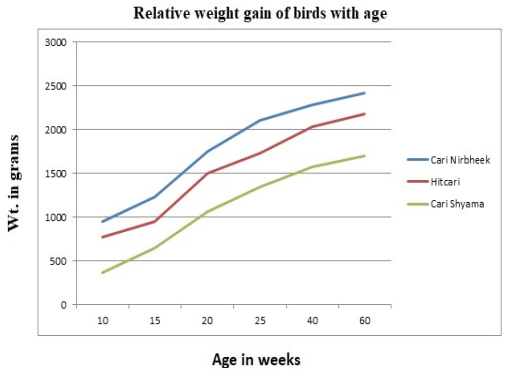

Fig. 1: Relative weight gain with age of the birds

body weight of Cari Nirbheek birds at different ages under scavenging system of management. The higher body weight in scavenging system might be due to the incorporation of supplement diet and other proper management care.

According to survey data 30 to 35% eggs were sold, 40- 45% ware consumed and rest were set for hatching by local broody hen. Overall 65% hatchability was recorded. During the study period 11.11, 8.63 and 7.67 per cent mortality were recorded in Cari Shyama, Hitcari and Cari Nirbheek birds respectively (Fig. 1).

The average weight of first egg and egg weight at 40 weeks of age were significantly low in Cari Shyama and Cari Nirbheek birds (Table 2).

The performance of Cari Nirbheek and Hitcari was much better in comparison to Cari Shyama birds in rural areas. The birds had adaptability in the local climatic conditions of Western Uttar Pradesh.

It can be concluded that performance of Cari Nirbheek and Hitcari in terms of egg production and body weight was much better in comparison to Cari Shyama birds under backyard system of poultry rearing in Western Uttar Pradesh. So, farmers from rural areas of Western Uttar Pradesh can rear Cari Nirbheek and Hitcari birds for their livelihood and nutritional security.

References

Bhattacharya, M., Buragohain, R., Ahmed, F.A., Pathak, P.K. and Ghosh, M.K. (2005). Laying performance of Vanaraja birds in high altitude areas of Arunachal Pradesh under backyard system of rearing. Proceedings of XXIII IPSACON on Indian Poultry Production in changed global scenario: Challenges and opportunities. Hyderabad. Pp 198.

Bonnet S, Geraert PA, Lessire M, Carre B, Guillaumin S. (1997). Effect of high ambient temperature on feed digestibility in broilers. Poultry Science; 76(6):857-863.

Mahapatra, C.M., Panda, B., Maitra, D.N. and Pandey, N.K. (1988). Physico-chemical evaluation of egg quality of native and farm-bred chicken. . Indian J. Anim. Sci. 59 (7): 865-870.

Malik, S. and Singh, N.P. (2009). Rural Poultry Production in N.E. Region- Promotion of Backyard Poultry with Local and Improved Birds BYP Workshop/papers/SMalik.pdf.

Singh, D.P. (1997). Evaluation of local poultry resources for creating genetic stock with improved adaptability, productivity and diseases resistance in tropical environments. Final Scientific Report EEC Project No TS3*-CT92-0091

Singh, M., Singh, U. and Gurung, B.S. 2000. Evaluation of egg weight and its various measurements attributes in indigenous Aseel breed of chicken. Indian J. Poult. Sci. 35 (3): 312-314.

Singh, D.P. and Shiv Prasad. (2005). Egg production curves of Kadakanath and its crosses with CARI Red. http://www.poulvet.com/poultry/articles/family_farming/egg_production.php

Snedecor, G.W. and Cochran, W.G. (1989). Statistical Methods, 6th edn., Oxford and IBH Publishing Co., Kolkata, Bombay and Delhi, pp 168-81.

Sreenivas D, Prakash MG, Mahender M, Chatterjee RN, Dasari S. (2013). Genetic analysis of egg quality traits in white leghorn chicken. *Veterinary world,* (5): 263-266.