

Comparative performances of hilly chicken and deshi chicken at Rangamati hilly areas of Bangladesh



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Abstract

The current study was carried out to compare between hilly chicken and indigenous chicken on the basis on their productive and reproductive performance . This study identified , characterized and described the performance of hilly chicken and indigenous chicken population . To evaluate the rate of survival of hilly chicken under semi intensive rearing system . The study was taken on a small scale population . A total of 3 hilly chicken (1 male chicken and 2 female chicken) and 6 indigenous chicken (2 male chicken and 4 female chicken) were reared in semi intensive system for 10 months periods to compare their productive and reproductive performances . The study was performed in Baghaichhari upozila under Rangamati district . The mean body weights of adult female and male hilly chicken were 897 g and 950 g and the mean body weights of adult female and male indigenous chicken were 1976 g and 2664 g . The age at first egg production of hilly chicken and indigenous chicken were 147 days and 159 days respectively and hand day production were 11 and 15 respectively . The average egg weight was 34 g and 41 g respectively . Both types of bird per day average feed consumption were 97.61 g and 102 g and mortality were 15.56 percent and 11.23 percent respectively . The hatching chick weight were 31.7 g and 38.9 g respectively . The body weight of growing hilly chicken and indigenous chicken after eleven weeks of age are 673 g and 979 g respectively and feed conversion ratios were 3.15 and 3.21 respectively . Those chickens have poor egg and meat production capacity compared to commercial broiler and layer farming but have high immunity and adaptability to their environment . Poor nutrition , lack of proper attention and insufficient health care are responsible to bird's mortality .

Key words : productive and reproductive performance , hilly chicken , indigenous chicken .

Introduction

Poultry sector is an inevitable part of agriculture that plays a substantial role in ensuring food security as well as facilitating poverty reduction . Bangladesh has a large and rapidly growing poultry sector in which chicken are considered as the most preferred poultry species for meat and egg purpose . Chicken meat and egg supply we get mainly from commercial broiler and layer in our country . But Now a days people are bored on the same taste of broiler meat and layer egg , they are finding for new taste . For getting change in the regular taste of regular poultry in this era of hybridization we can use natural source of poultry of our country, indigenous chicken . In Bangladesh, several types of indigenous chicken are found such as hilly, Naked Neck, Aseel, Yeasine, native dwarf, Frizzled plumage and common native birds of non-idiosyncratic typical type (Das *et al.*, 2008). Some dwarf chickens and Red Jungle Fowls can also be seen in the country. Hilly chicken are found in the deep forest in hilly areas of the Chittagong region and deshi chickens are reared in local for local consumption and its egg and meat has a unique taste, is regarded as a delicacy, and is popular among consumers. Indigenous chickens are characterized as dual purpose birds due to their ability to supply both meat and eggs for human consumption. Local non-descript coloured chicken is a vital source of tasty meat and eggs and more acceptable to rural people (Barua and Howlider, 1990). Ganabadi *et al.* (2009) reported that indigenous chicken is always thought to be better in term of carcass composition than commercial broilers due to its low fat content. The local people always try to find the indigenous (desi) cockerel for its tenderness and special taste (Ahmed and Ali, 2007). Indigenous chickens are considered very valuable in the rural communities because they fulfill major functions and benefits in the livelihood of rural families. Indigenous chickens are broody, able to take care of their own chicks (Horst, 1989). The deshi chicken has the ability to adapt, survive, perform and reproduce under weight gain. The heavier body size of the hilly chickens indicated that it can be used as slow growing meat type chicken in Bangladesh. Rahman *et al.* (2012) observed 937g body weight of Hilly chicken with 2.89 feed conversion efficiency at 10 weeks of age. As the market price of hilly chicken are much higher than commercial table birds, so benefit-cost can be analyzed to find their economic potentiality. Indiscriminate random breeding among native chicken and unplanned crossing with exotic breed have been eroding the original characteristics of native chicken. So the local genetic resources have been going to be under threat gradually.

Conservation and preservation of genetic resources as insurance against future needs has become a topic of mounting concern (Crowford, 1984).

There is little information and little observational studies has been done to know the productive and reproductive performance of hilly chicken and deshi chicken of hilly regions. Although few works has been done on hilly chicken but the productive potentiality of both chickens is not well documented. The local germplasm of hilly chicken and deshi chicken should be collected and conserved precisely for future use and selection for pure breeding is necessary for their development as a meat producing native bird. Therefore, this study was undertaken with the objectives of the Productive and Reproductive Performances of hilly chicken and deshi chicken and their conservation and improvement at hilly areas.

Materials and Methods

The experiment was conducted under semi intensive rearing system at my own house in Baghaichhari , Rangamati for 10 months period. A total of 3 hilly chicken (1 male chicken and 2 female chicken) and 6 indigenous chicken (2 male chicken and 4 female chicken)were placed in two separate semi intensive housing system . First I collect hilly chicken from deep forest by following the legal procedure . I kept them in a small aviary made by bamboo fence to avoid their escape because they have the tendency to go back in the forest . After two three months they became use to in locality then i transfer them in semi intensive system . The chicks were reared in a busket , littered with paddy straw. Sufficient number of feeders and drinkers were placed in the poultry house. Standard starter, grower and layer feed was offered adlibitum and there was a continuous supply of fresh drinking water during rearing period . Necessary hygienic measure was taken to ensure bio-security. Natural hatching was performed by mother hen reared on littered (paddy straw) conventional bamboo basket was used as hatching nest. Data on egg production, egg weight, fertility, hatchability, feed consumption, body weight and mortality were recorded regularly. The statistical analysis was done using 'SPSS' 2011 statistical programme to compute analysis of variance (ANOVA) for randomized complete block design (RCBD). Differences among the treatment means were determined by Duncan's Multiple Range Test (DMRT) (Duncan, 1955).

Figures



Hen (Deshi chicken)



Cock (Deshi chicken)



Hen and cock (Deshi chicken)



Hen and Cock (Hilly chicken)



Hen and Chicks (Hilly Chicken)



Eggs (Deshi Chicken)



Eggs (Hilly Chicken)

Results and Discussion

The average body weight of both type of adult birds were shown in Table 1, where up to 30 weeks of age. The adult body weight of hen and cock of hilly chicken were significantly lower than deshi chicken and they had the tendency to fly and stay on tree at night .

Table 1. Performance of hilly chicken and deshi chicken .

Parameters	Hilly chicken	Deshi chicken
	Mean \pm SE	Mean \pm SE
Body weight of adult hen(g) (30 wks)	768 \pm 134	1255 \pm 79
Body weight of adult cock (g) (30 wks)	814 \pm 68	1576 \pm 68
Egg production (H.D) %	6 \pm 1.4	15 \pm 3.3
Egg weight (g) Age	34 \pm 4	41 \pm 3.6
at 1 st egg (d)	147	159
Feed consumption (g/bird/d)	97.61 \pm 11	102 \pm 22
Mortality (%)	15.56 \pm 3.7	11.23 \pm 2.7

However, the egg production of hilly chicken was very less and there was no significant difference between hilly chicken and naked neck hilly chicken. Feed consumption of deshi chicken was slightly higher than hilly chicken but was no significant difference. There was no significant difference of the age at first egg and mortality among the breeds.

Hatching performances were summarized in Table 2. There was no significant difference of hatchability between hilly and deshi chicken hatched by broody hens.

Table 2. Hatching performance of hilly and deshi chicken as hatched by broody hens.

Types of Bird	Egg set (No.)	Egg weight(g)	Hatchability (%)	Chick weight (g)
		Mean ± SE	Mean ± SE	Mean ± SE
Hilly Chicken	7	34.28±3	57.5±10	31.7±3
Deshi Chicken	15	41.48±1	67±22	38.9±4
Level of Significance		NS	NS	NS

However, the lower hatchability in hilly chicken might be due to the reason of summer season affect on natural hatching process. The performance of hilly chicks and deshi chicks are shown in Table 3. There was no significant difference of body weight between hilly chicks and naked neck hilly chicks at day-old, 9 and 11 weeks of age.

Table 3. Performance of both growing hilly and deshi chicks reared up to 11 weeks of age

Parameters	Age (wks)	Hilly chicks Mean±SE	Deshi chicks Mean±SE
Body weight (g)	Day old	31.4±10	38.6±4
	2	55.9±1.7	60±5.3
	5	123.4±5	257.8±18.8
	7	250.1±7.4	426.3±36.2
	9	373.5±11.	550.6±77.9
	11	550.6±77.9	745±97.6
Feed Consumption (g)		2170	2960
Feed Conversion Ratio (FCR)		3.15	3.21
Mortality (%)		6.11±3.75	7.14±2.14

The body weight of Hilly chicks at 9 weeks of age was higher than that of Faruque *et al.* (2013) of 373 g at 8 weeks of age and lower than Rahman *et al.* (2013) of 636 g at 9 weeks, and Rahman *et al.* (2013) 503 g at 8 weeks of age. The body weight of deshi chicks at 9 and 8 weeks of age was higher than the hilly chicks . The average feed consumption per bird of Hilly chick was lower than that of deshi chicks up to 11 weeks of age. However, the feed conservation ratio of deshi chicks was slightly better than that of hilly chicks. The mortality of hilly chicks was slightly lower than that of deshi chicks up to 11 weeks of age.

Conclusions

From the results of this study, it was revealed that the hilly chicken and deshi chicken given an indication of meat type native chicken. It may be suggested that both type of chicken require reproducing to have large stock for undertaking conservation and further improvement programme.

Although Deshi Chicken performed better compared to Hilly Chicken , but Hilly Chicken are in much demand because of their unique meat quality .

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