

# **Productive Performance of Different Duck Genotypes Reared at Regional Duck Breeding Farm, Sonagazi, Feni**



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# **Productive Performance of Different Duck Genotypes Reared at Regional Duck Breeding Farm, Sonagazi, Feni**



**This production report submitted as per approved style and content**

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**LIST OF ABBREVIATIONS**

<b>Abbreviations</b>	<b>Elaboration</b>
DLS	Department of Livestock Services
BLRI	Bangladesh Livestock Research Institute
Bd.	Bangladesh
Kg.	Kilogram
No.	Number
%	Percentage
Govt.	Government
RFLDC	Regional Fisheries and Livestock Development Component
NGO	Non-Government Organization
SLDP	Small Holder Livestock Development Project

## ABSTRACT

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The study was conducted at Regional Duck Breeding Farm in Sonagazi, Feni. The farming system of the farm is scavenging. The aim of the study was to understand the management practices and production performance of Jinding, Khaki Campbell and Deshi duck in scavenging farming system. The management conditions of the studied farms was observed by frequent visit the farms and egg production data were collected through a structured questionnaire and face to face interview of the manager. The egg production data was taken from the register book of the farm. Total egg production of the farm in the year 2014 was 287980. Average egg production of three genotypes of ducks was 230, 220 and 150 of Jinding, Khaki Campbell and Deshi duck, respectively. Better egg production percentage (63.01%) was observed for Jinding duck. The egg production performance of Jinding was 2.75% and 21.92% higher than Khaki Campbell and Deshi, respectively.

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**Keywords:** Management practices, duck genotypes, live weight, scavenging.

## CHAPTER - I

### INTRODUCTION

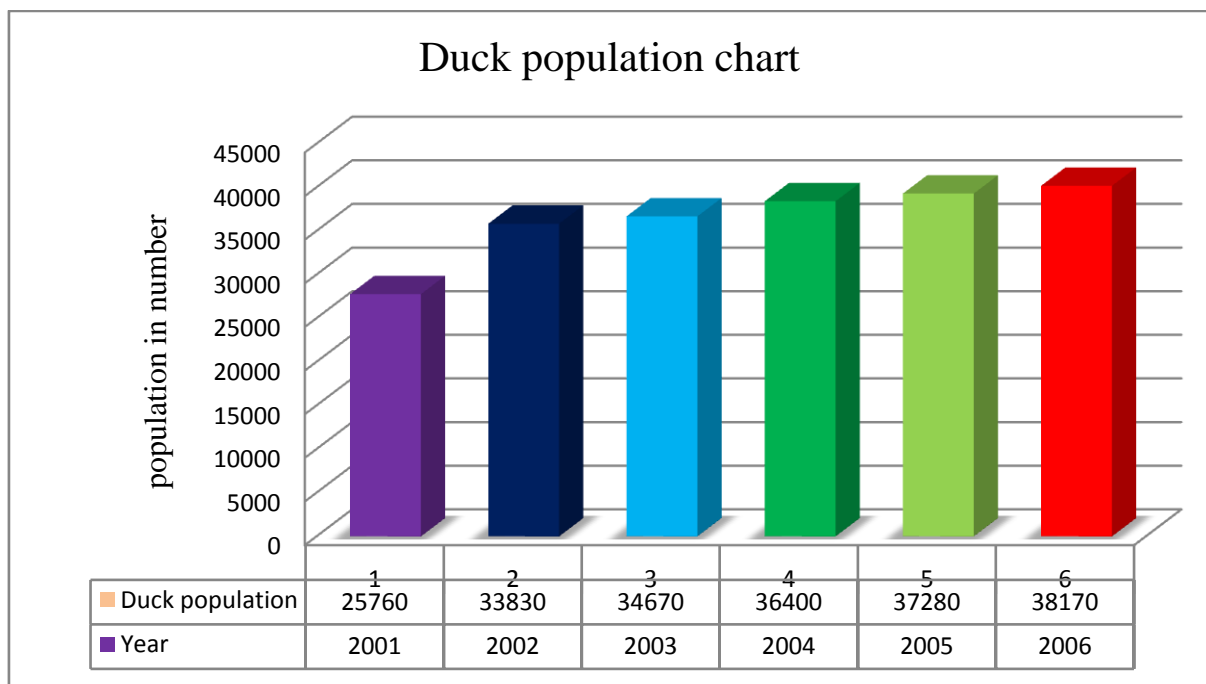
Poultry production is an effective tool to bridge the gap between supply and demand of animal protein in developing countries (Alders and Pym, 2009). Among the other species of poultry, duck can be a potential source of meat and eggs in rural area of Bangladesh (Hoque *et al.*, 2010). Chicken and duck or both rearing practiced are reported in Bangladesh. Majority portion of farmers raise 77.29% chickens and 84.41% duck respectively of the total population in Bangladesh (Huque *et al.*, 2001). However the duck production is increasing steadily in Bangladesh. It's increased from 25.8 million in 2001 to 38.1 million in 2006 (BBS, 2007).

Bangladesh has the third largest population of duck after China and Indonesia with a population of 41.5 million (Dolberg, 2008). Recent estimates of duck population are varying from 8% to 25% of the total population of chicken (DLS, 2012). The variation also clearly indicates the household and small scale duck production in Bangladesh. There are different types of duck rearing system is available in Bangladesh. It can be classified as house hold (scavenging), semi-intensive (semi scavenging) and intensive duck farming (Khan *et al.*, 2013). Majority of the population of duck are reared by the small holders in coastal and low-laying areas under scavenging system, with little or without supplementation.

The potential of increasing duck production under scavenging system is closely related with the development of better feeding system. Khaki Campbell and Jinding which are not yet recognized as breed but considered to be a valuable indigenous poultry genetic resource like native (Deshi) in Bangladesh with many attributes better than other available indigenous types. In Bangladesh 90 to 95% of the ducks reared by village farmers are of Deshi type, which are very poor in egg production. But now day the tendency of rearing highly productive indigenous ducks is increasing day by day in our

country in the rural sides. The preliminary studies showed that Jinding and Khaki Campbell are medium sized egg laying duck having potentials to survive well and giving very good production (Pervin *et al.*, 2013). Duck eggs are quite large compared to chicken eggs (1.4 times), which makes them easily distinguishable. The duck egg contains relatively less water and higher percentage of proteins and fats in the yolk, albumen and total contents of egg as compared to chicken egg. Because of higher percentage of fat, its energy value is also higher than chicken eggs.

Poultry population estimates differ depending on the source of information. According to numbers provided by the Government of Bangladesh's Livestock Department, the total chicken population is steadily increasing, from about 143 million birds in 2001 to 195 million birds in 2006. Over the same period the duck population increased from 25.8 million in 2001 to 38.1 million in 2006 (BBS, 2007) (Fig 1.1).



**Fig 1.1: Duck population in Bangladesh from year 2001 to 2006.**

Source: Government of Bangladesh's Department of Livestock Service's website: [www.dls.gov.bd](http://www.dls.gov.bd), 2008



A comparative study was therefore conducted at Regional Duck Breeding Farm Sonagazi, Feni with the following objectives:

**Objectives**

1. To identify the egg production performance of different genotypes of duck.
2. To select the best type of duck for rearing at rural level.

## **CHAPTER - II**

### **MATERIALS AND METHOD**

#### **2.1. Selection of the study areas**

Selection of study area is an important step for collection of data in accordance with the objectives set for the study. The experiment was conducted at Regional Duck Breeding Farm, Sonagazi, Feni.

#### **2.2. Feeding and Management**

The birds belong to three different genotypes were supplied with pellet feed. Each duck was supplied with 70g pellet feeds from laying stage, divided into two equal halves and were given twice daily; first in the morning at 07.30 hour and second time in the evening at 17.30 hours. Feeds were supplied in the plastic feeder and feeder was cleaned properly before each time of feeding. Sufficient clean drinking water was also supplied in each time.

There are three types of feeds has been provided. Feeds are bought from nearby market. Nutritional requirements of feeds are given below in the Table 2.1.

**Table 2.1: Nutritional requirement of duck pellet feed at different stages.**

Package no.	Name of goods	Standards
1	Duck starter pellet feed	CP - 19% (min) Crude fat - 4% (min) CF - 3% (max) Water - 12% (max) Pellet size - 1.5-1.8 mm.
2	Duck grower pellet feed	CP - 16% (min) Crude fat - 4.5% (min) CF - 5% (max) Water - 12% (max) Pellet size - 1.8-2.0 mm.
3	Duck breeder pellet feed	CP - 18% (min) Crude fat - 3.5% (min) CF - 4% (max) Water-12% (max) Pellet size - 2.0-3.5 mm.

### 2.3. Methods of data collection

Data was taken with questionnaire method to the manager of the farm and also from the register book. For this study 1309 ducks were selected from the farm among three genotypes. Jinding, Khaki Campbell and Deshi were 700, 509 and 100, respectively. Then all the data was gathered together and calculate for results.

#### **2.4. Egg production performance**

It should better to mentioning that the egg production performance of duck be varied on analyzing freshly or preserved eggs. The egg production performances are described of ducks including these characters.

- a) Total number of egg production (TNEP): Total amount of egg laid a type.
- b) Average no. of egg production (ANEP): Total number of egg / Total number of duck.
- c) Average egg weight (AEW): Total egg wt / Total no. of eggs.
- d) Total egg mass production (kg) (TEMP): Total egg wt in kg.
- e) Egg mass production (EMP): Total egg wt / Total no. of duck.
- f) Age at sexual maturity (days) (ASM): 1<sup>st</sup> laying time.
- g) Survivability: Total number of live duck / Total number of duck.

## CHAPTER - III

### RESULTS

The average no of egg production performance of Khaki Campbell, Jinding and Deshi was 220, 230 and 150 respectively. Age at sexual maturity was 157 for Jinding duck, which is less from other duck (Table 3.1). Among the results Jinding's performance was best. Yearly no of egg production of Jinding was higher than others. These are some beneficial feature that I have found in the study.

**Table 3.1: Production performance of three genotypes of ducks from January to December 2014.**

Parameters	Khaki Campbell	Jinding	Deshi
Total number of egg production	111980	161000	15000
Average no. of egg production	220	230	150
Average egg weight (g/egg)	65.20	64.30	58.70
Total egg mass production(kg)	34.67	34.19	31.69
Egg mass production (g/bird/day)	26.80	30.72	15.65
Age at sexual maturity (days)	168	157	194
Survivability (%)	94.70	97.48	96.60
Egg production % of TNEP	60.28	63.01	41.09

The age of sexual maturity of Jinding is 157 days, which indicates more productive performance of the duck than other species such as Khaki Campbell and Deshi 168 and 194, respectively.

Survivability of Jinding (97.48%) is higher than other duck breeds which is an indicator of less duck death in the farm. The egg production percentage of Jinding is also top position than others.

**Table 3.2. Difference of egg production % of TNEP**

<b>Egg % of Jinding</b>	<b>Egg % of Khaki Campbell</b>	<b>Egg % of Deshi</b>	<b>Difference %</b>
63.01	60.28		2.75
		41.09	21.92

The egg production performance of Jinding was 2.75% and 21.92% higher than Khaki Campbell and Deshi, respectively (Table. 3.2).

## CHAPTER - IV

### DISCUSSION

The production performance of duck varies from breed to breed due to its genotypic characteristics. The present study gives the information of the egg production of Jinding was 230. Liu *et al.* (2008) reported that, Jinding duck, which can produce more than 260 eggs per year, was developed in the southern coastal area. Age of the first egg laying is 100~120 days. Average egg number is 260~300 per year per duck. This is almost similar to present study. Though varies a little from the standard level due to environmental conditions.

The recorded survivability percentage of present findings is 97.48, which varies a little from standard level of work of Islam *et al.* (2012). They showed that the survivability percentage of Jinding is 79-87. It may be due to the bio-security of farm was better.

Huque *et al.* (2010) reported that the sexual maturity of Jinding duck is 152-155. The study gave similar result like Huque *et al.* (2010). Proper brooding, housing, feeding, minimum crowded tends to early maturity of the duck.

Brooks and Taylor (1997) found the egg production percent of Jinding is 58. But the present study indicates this percentage is 63.01. This is more than the previous study. The formulated ration containing proper amount of nutrients leads to more egg production in the farm.

The egg production performance of Jinding was 63.01 which are similar to the study done by Salahuddin (2005). Genetic inheritance, good living environment, proper bio-security are responsible for more performance of the Jindings duck.



Fig. 3.1: Regional duck breeding farm



Fig.3.2: Infrastructure of duck breeding farm



Fig 3.3: Discussion with manager about farm



Fig. 3.4: Khaki Campbell duck population



Fig.3.5: Jinding duck population in farm



Fig. 3.6: Deshi duck population in farm



## **CHAPTER - V**

### **CONCLUTION**

From the above result Jinding duck was the best for rearing in Bangladesh, due to its more productivity, early sexual maturity, and more survivability. Its egg production is moreover 21.92% higher than Deshi and 2.75% higher than Khaki Campbell. The villagers of Sonagazi may get benefit from rearing Jinding duck for better performance and improved their economic status. Due to higher survivability than other ducks, the farmer's loss has become less. They should start rearing Jinding duck at high scale to overcome poverty.

## **CHAPTER - VI**

### **LIMITATION**

There was insufficiency in keeping data from record book. Limited access of entrance in particular sections of the duck farm. Vaccination schedule is not well developed that leads to insufficient study. Most of the data was collected through interviewing. The authority showed their negligence to give accurate data of the study due to some rules and regulations for their jobs.

## CHAPTER - VII

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## **BIOGRAPHY**

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