**A REPORT ON**

**Farm Management and Weight of Different Body Parts of Zending Ducks under Different Farming Conditions**



**Report Presented in Partial Fulfillment of the Requirement for the Degree of Doctor of Veterinary Medicine**

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| **A Report Submitted by**  **Roll no. -06/19**  **Intern ID No- F-54**  **Reg. No- 257**  **Session:2005-2006** |

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**A Production Report Submitted as per approved style and content**

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**Abstract**

This study was conducted to study the management of duck farming and meat performance of Zending duck. Farm management data, of Zending ducks was collected. The housing, breeding, feeding and proper health care is important for duck farming. The live weight of Zending ducks was 1528 to 1610 g and dressing percentage was 59% to 61% of Zending duck in two farms, respectively. Weight of different external & internal offals and their percentage in respect of live weight was estimated and it was found that the offals are positively correlated with live weight.

**Introduction**

Ducks are considered as a second common poultry in the world. and are raised primarily for meat purpose. There are approximately 42.124 million duck populations in Bangladesh

(Bangladesh Economic Review 2012), of which most of ducks are reared in backyard system. They are easy to raise, hardy and less susceptible to many of the common poultry diseases (Ali and Islam 1995). Duck raising provides subsidiary income to landless, marginal and small farmers (M. M. Rahman *et at* 2009**)**. Most of the ducks in the country are indigenous type and are reared by the rural farmers under scavenging condition with forage in water bodies like ponds, ditches, tanks etc. we know that duck rearing is superior to deshi chicken rearing to some extent because duck provides more eggs than chicken(Isalm et al 2002). Furthermore,the weight of ducks egg is higher (average weight 57-60g) than that of chickens egg (average weight 55g) (Islam *et al.* (2002), Ravindran *et al.* (1984), Alam and Hossaion (1989).). In addition, duck can be reared in flood affected area where chicken rearing is not possible. The indegenous ducks are more habituated with the ordinary feeding, management provided by the small scale as well as landless farmers.

There are various duck breeds can be found in Bangladesh. These are deshi pati duck, Nageshwari, Sylheti mete duck, Bali, Penguin etc. Furthermore there are more egg type duck breed available in Bangladesh such as- Khaki Campbell, Zending, Indian Runner. The annual egg production of Khaki Campbell, Indian Runner is 250 egg/ year, over 300 egg/year respectively ( Central Poultry Development Organization, India). However Deshi white & black produce 100-115eggs/year ( Ghosh *et al* 2012) and Zending ducks produce morethan 150 egg/year( Ghosh *et al* 2012).

The body consitis of different parts some are edible (e.g. skin, liver, heart, gizzard, head, bones) and some are non-edible (e.g. feather, intestine, legs). The dressing persentage (Dressing percentage can be defined as the percent of the live animal thats ends up in the carcass weight & dividing it by the live weight and multiplying by 100- by Bruce Shank. ) of ducks meat depends on these different body parts. However, there are very limited research can be found on its. Therefore, the current study was design with the following objectves.

* **Objectives:**

1. To know the management of zending duck under intensive and semi-intensive conditions

2. To know the dressing percentage of zending duck under intensive and semi-intensive conditions

3. To know the proportionate of different parts with live weight and dressing percentage

**Review of literature**

The review of literature on duck management, egg production and dressing percentage are given bellow:

**Rahman *et al* (2009),** Duck rearing system in south costal area in Bangladesh. It is an important source of family nutrition and almost each and every family has at least 7 to 8 chickens (BBS, 2004). There are 39.08 million ducks in Bangladesh (DLS, 2007) with an average of 4.16 ducks per household (BBS, 2007), of which 95 percent are of indigenous (Hoque *et al.,* 2001; Ahmed, 1986). It was found 78 per cent of egg and 86 per cent of poultry meat are produced by the smallholders under scavenging condition (Alam, 1995). Rearing of ducks gives maximum return with minimum cost. Ducks are efficient converter of agricultural by- products; kitchen wastes, seeds, grains, garden left over, insects, green grasses and all other human refusal that would otherwise wasted. Ducks occupy second place in comparison with chicken in producing meat and egg in the country. Ducks are traditionally raised under scavenging (Salahuddin *et al*., 1991) by the smallholders in coastal and low-lying areas, with little or no feed supplementation. Duck production in the coastal districts (Noakhali and Lakshmipur) of Bangladesh provides self-employment for landless and small farmers. There is a great potentiality of improving the productivity of ducks in coastal and haors areas through supplementary feeding. Ducks, being an important poultry species, can contribute efficiently in increasing egg and meat production than chicken in the coastal or low lying areas in southern districts.

**Ali and Islam (1995)** the performance of khaki Campbell, Zending and KCXZ ducks in integrated duck cum fish farming system. One hundred eighty 90-days female duckling from khaki Campbell, Zending and crossbred were fed( 115gm duck- day) a common diet containing 17.5% available phosphorous up to 425 days to assess the performance and profitability of these three duck breeds in an integrated duck cum fish farming system. Re-result showed that the three were almost similar in feed consumption, body weight gain, mortality, hen-day and hen-housed eggs production (p>0.05). the cost for duckling, feed, fingerling & labour per duck did not differ among the breeds.

**Omojola, (2007)** Department of Animal Science, University of Ibadan, Ibadan, Nigeria. Carcass and Organoleptic Characteristics of Duck Meat as Influenced by Breed andSex, **:** Carcass and meat quality traits of three breeds of duck which include Rouen, Pekins and Muscovy were investigated. A total of thirty-six matured ducks with twelve ducks from each breed were used for the study in a 3×2 (breed×sex) factorial arrangement in a completely randomized design. The ducks were slaughtered in batches of six, properly bled, defeathered and dressed. The ducks were chilled at 2°C for 24 h immediately after dressing, prior to cutting up into primal cuts. Samples for cooking loss, shear force and taste panel evaluations were taken from the breast portion. The dressing percentage was highest in the Muscovy duck with values of 71.18 and 69.75% for male and female respectively while the least value of 65.28% was obtained from the female Rouen duck. The male Muscovy ducks gave the highest absolute values (p<0.05) in all the primal cuts while the female Rouen gave the least values for wing, breast, hind and for back respectively however, the female Muscovy duck gave the least value for thigh. The external offals were higher in the male Pekin and Muscovy ducks than their female counterparts while there was no noticeable (p>0.05) sex effect in the Rouen breed. The moisture content of duck meat evaluated ranged from 72.69 (female Muscovy) to 76.72% for female Rouen ducks. Apart from the male Pekin duck that gave the highest (p<0.05) water holding capacity (WHC) the others gave values that were statistically similar (p>0.05). Shear force values of 2.15 and 2.30 kg/cm3 were obtained from the male and female Rouen ducks respectively while higher values of 2.64 and 3.41 kg/cm3 were given by both male and female Pekin ducks. The highest shear force value (3.91 kg/cm3) was obtained from the female Muscovy duck. In terms of flavour, tenderness and juiciness, the taste panelist has higher preference for meat from the male Rouen duck. The result also revealed that sex and breed had no significant (p>0.05) effect on the texture and overall acceptability of duck meat.

**Bhuyan et al (2005),** The experiment was conducted with 40 Pekin, 40 Muscovy and 40 Deshi White day-old as hatched broiler ducklings under farmers condition to investigate the comparative performance of three breeds of ducks under farmer's management up to the 09 weeks of age. The final live weight in Pekin, Muscovy and Deshi White were 1763.0, 1225.0 and 1208.0 g/ducks respectively (P < 0.05 ). The total feed consumption up to the brooding period in three breeds were 2047.00, 1652.06 and 1430.05 g/ducklings respectively (P< 0.05) and the respective feed conversion ratios were 2.40, 2.91 and 3.05. Mortality was non- significant (P>0.05) among the breeds of ducks. The highest (70%) dressing yield was found from Pekin and the lowest (65%) from Deshi White. The highest production cost was found in Pekin and the lowest in Deshi White. The highest gross margin and BCR (Tk.34.93/duck and 1.66 respectively) were obtained from Pekin and the lowest (Tk. 11.45/duck and 1.23 respectively) from Deshi White. From the results it may be concluded that exotic breeds /improved breeds of broiler ducks rearing is possible at FSRD site, Sylhet and farmers can be benefited within short time. The breed of Pekin ducks is superior over Muscovy and Deshi White.

**Das and Haq (2000)**. Performance of Khaki Campbell, Zending and Indian Runner in integrated duck-cum-fish farming system. Bangladesh j. Amin Sci-2003 .Experiment was carried out to assess the performance of Indian Runner (IR), Khaki Campbell (KC), Zending (Z) ducks in an integrated duck-cum-fish farming system for a period of 15 months. Two hundred-seventy number 90-days-old duckling of Indian Runner, Khaki Campbell and Zending ducks fed (I l5g/duck day-') ona formulated feed containing 18.41 % crude protein and2720.50 NEE (kcal kg-') of energy for grower ration and16.68% crude protein and 2637.00 NM (kcal kg-') of energy for layer ration. The results showed that the three genotypes were almost similar in body weight gain, mortality, egg production, feed conversion and egg weight (P>0.05). Inrespective of breed, egg production (nos./ duck) was inversely correlative (r = -0.33. P<0.001) with fish production (kg/duck). The total income from egg, fish. Spent duck and net profit per duck were almost similar in three breeds (P>0.05)

* **Summary**

There are several duck farming system found in Bangladesh. Most of them are back yard farming. Furthermore, an integrated duck cum fish farming can be seen and which are more profitable. Performance of Khaki Campbell and Zending could be similar under **Bangladesh** conditions. Duck is an efficient converter of agricultural by product, kitchen waste, seeds grains, insects etc. The meat quality & dressing percentage is depend on the sex & breed of duck.

**Materials and Methods**

The study was conducted in two farm; those are in Begumganj, Noakhali and Rangamati Sadar. The data were collected from December 2012 to February, 2013 during the DVM internship placement period.

Six ducks were bought from this two duck farms; their live weight was taken and recorded. Then the ducks were slaughtered and taken weight of its different body parts (Head, gizzard, intestine, liver, feet) and are recorded. The Zending duck management under two different farms were observed and kept record. The management of different duck farms are describe as:

**Rangamati Duck Farm( Farm-1)**

The Govt. Duck farm located at Asambasti of Rangamati sadar is working as a attached organization of livestock department under the active guidance of Rangamati Hill District Council. Initially it was established in Kaptai upazila as duck insemination centre. In 1982, it was transformed as govt. duck farm and shifted at Rangamati sadar. There are 10 Sheds in this farm having 1182 sq. meters space for poultry rearing. One day aged chicks collected from Chittagong & Narayangonj are reared in this farm and about 60-70 thousands of chicks are being reared round the year. After rearing up to a certain age these are sold to the people at reasonable price.

* Recent information

Number of shed: 6

Breed: Zending

Stage of duck: Grower

Flock Size: 800

**Housing:** House was brick-build shed. There was a run space for duck and sufficient amount of water was provided to fulfill the demand. Total shed were 6 in number. The sheds were not east-west faced.

* **Brooding temperature**: They brooded Zending ducklings for 3 to 4 weeks. Hover space was 90 to 100 sq.cms. per ducklings under the brooder. A temperature of 29 to 32o C (85 to 90oF) was maintained during the first week. It was reduced by about 30oC per week till it reaches 24oC (75oF) during the fourth week. Ducklings were brooded in wire floor. A wire floor space of 0.046m2 (1/2 sq, ft.) per bird.
* **Feeding system:** Intensive system

Daily ration: Ducks were grown on dry mash, a combination of dry and wet mash or pellets. Ducks prefer wet mash due to difficulties in swallowing dry mash and supplementary green feed. 120gm feed were provide per duck. Feed ingredients for duck – crushed wheat, rice polish, fish meal, sesame oil cake, oyster shell, common salt etc. Ducks lay their egg before 9a.m. Daily two times feed were provided in the farm.

* Lighting: They provide light at least 12 hour at the stage of laying.
* Vaccine: Duck plague, Duck cholera vaccines are provided as:

**Table-1**VACCINATION SCHEDULE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name of the vaccine | Route | Stage | Dose | Age of duck |
| 1. DUCK CHOLERA  (PASTEURELLOSIS) | Subcutaneous | Duckling  Adult | 1ml  2ml | 3-4 weeks  After one month of last vaccination |
| 2.Duck plague | Subcutaneous | Adult | 1ml | 8-12 weeks |

**Allahar Daan Duck Farm( Farm-2)**

This farm is located at Begamganj in Noakhali district. This is a personal farm which stands on 40ft X 20ft of land.

Breeds: Khaki Cambell, Zending.

Number of ducks: Khaki Cambell-100(Grower), Zending-150(Spent).

They collect one day old duckling from government duck farm, Noakhali.

* Housing:

The house is made of bamboo and wood. The roof is made of teen. It’s floor is consist of wood which is above 2ft from ground level. It’s surface is neat and clean and they clean the house daily. They use CaO and detergents to disinfectant the house.

* Feeding:

Ducks are provided two types of feed-Natural and Artificial. Natural feeds are rice polish(40kg/250 duck), oyster shell(3kg/250 duck), maize etc. There is a pond near the shed. Ducks are grazed in pond and spend in water for 3hours daily.The number of daily worker is only two (2).

* Lighting: They provide light daily at least 13-14hours at the laying stage.
* Vaccination & treatment:

Regular vaccination is done in this farm. Vaccines are- Duck plague, duck cholera.Treatment is given in Sick ducks regularly. They get help from Veterinary hospital and NGO.

**Statistical Analysis**

The collected data was stored in the Microsoft Excel 2007 software. The averages, percentages with their standard error were estimated by using Microsoft Excel 2007 software. However, the mean differences were estimated using least significant difference test (LSD) (Steel et al., 1997) at 5% level of significance.

**Result & Discussion**

The live weight, carcass weight and dressing percentage of Zending duck are presented in table-2.

**Table 2**: weight and dressing percentage of Zending duck.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Traits** | **Farms** | | | **Level of Significance** |
| **Farm-1 (Rangamati)** | **Farm-2**  **( Noakhali)** | **Overall** |
| Live weight (g) | 1446.667 ± 70.94 | 1610±45.83 | 1528.33 ± 104.20 | Not Significant |
| Carcass weight (g) | 860 ± 45.82 | 986.66 ± 30.55 | 903.33 ± 58.88 | Not Significant |
| Dressing percentage (%) | 59.43 ± 0.27 | 61.28 ± 0.70 | 59.12 ± 0.60 | Not Significant |

**From the table.2** live weight, carcass weight & dressing percentage of Zending ducks was ranging from 1528 to 1610, 903 to 987 and 59 to 61% respectively. Overall live weight, carcass weight and dressing percentage also mention in the table-2. It can be seen the significant level.

It can be seen that the live weight, carcass weight, dressing percentage a duck in farm-1 were comparatively lower than farm-2. Live weight, carcass weight, dressing percentage of this study is more or less similar to the findings found by Omojola (2007).

They found live weight 1466.70gm to 1516gm and dressing percentage 65.30% to 68.78%.

The live weight & percentage of different body parts of Zending duck in respect of live weight are showed in table 3

**Table 3:** weight & percentage of external and internal parts of breed of Zending duck.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Item** | **Farm 1** | | **Farm2** | | **Overall** | |
|  | Weight (g) | % (in respect of body weight) | Weight (g) | % (in respect of body weight) | Weight (g) | % (in respect of body weight) |
| Blood | 57.66 | 4.11 | 61.33 | 3.81 | 59.50 | 3.89313 |
| Feather & skin | 253.33 | 17.51 | 252 | 15.65 | 252.67 | 16.53217 |
| Gizard | 38 | 2.63 | 49 | 3.04 | 43.50 | 2.846238 |
| Liver | 30 | 2.07 | 33 | 2.03 | 31.50 | 2.061069 |
| Intestine | 83 | 5.73 | 81.66 | 5.07 | 82.33 | 5.387132 |
| Heart | 10.33 | 0.71 | 10.66 | 0.66 | 10.50 | 0.687023 |
| Head | 57.33 | 3.96 | 59.67 | 3.71 | 58.50 | 3.827699 |
| Feet | 29.66 | 2.05 | 30 | 1.86 | 29.83 | 1.952017 |

From the table-3, percentage of blood, feather and skin, gizzard, liver, intestine, heart, head, feet in respect of body weight were 4.11, 17.51, 2.63, 2.07, 5.73, 0.71, 3.96, 2.05 respectively for farm-1 and 3.81, 15.65, 3.04, 2.03, 5.07, 0.66, 3.71, 1.86 respectively for farm-2.

Table-3 showed that the weight of different external & internal organs of duck and percentage of them in respect of body weight is slightly higher in farm-1 except percentage of gizzard weight in respect of body weight is slightly higher in farm-2.

Weight & percentage of head, feet, blood, heart, intestine, liver, gizzard, feather with skin in respect of live weight of this study is more or less similar to the findings found by Omojola (2007).

They found the percentage of head, blood, heart, liver, gizzard, intestine, feet 4.31, 4.88, 0.95, 1.48, 2.97, 9.2, 2.13 respectively.

**Conclusion**

Duck rearing may be more profitable than chicken rearing because of low disease susceptibility in case of duck. Farm management data is collected from different two farms. Carcass weight and dressing percentage of Zending were investigated. The ducks were collected 6 in number from the respective two farms and properly bled, defeathered and dressed. The dressing percentage was ranging from 59.43%to 61.28% in the Zending duck. The overall dressing percentage was 59.12%. We also measured the percentage of different body parts in respect of live weight. From the result, we come to know that the dressing percentage & carcass weight depend on the weight of different body parts and dressing percentage is very low in Zending ducks.

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