

Morphometric characteristics and production performance of local duck of Andaman

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Received: 10 October 2004; Accepted:

Key words: Characteristics, Duck, Egg carcass, Egg production, Morphometric characteristics

Out of 923 502 poultry population (Anonymous 2003) of Andaman and Nicobar islands, duck population is about 70000. Majority of these ducks belong to non-descript desi and only few hundred ducks are of improved variety. Senani *et al.* (2001) studied these ducks and the rearing practices in Andaman. Present study was aimed at morphometric characterization and evaluation of production performance and carcass quality traits of these ducks under farm conditions.

Grower ducks (50) were collected from the field and their morphological characteristics such as length, height, plumage colour, shank and bill colour, size, posture and gait were closely observed and recorded. Eggs from these ducks were hatched to produce a population of local ducklings for further studies on growth, carcass characteristics and egg production performance. Duckling were wing banded and reared under brooder up to initial one month and later shifted to an open pan. Ducklings were offered balanced ration as slurry and water *ad lib*. Birth weight, fortnightly body weight, daily feed offered and residues were recorded to work out daily feed intake, growth and body weight gain of the ducklings.

Age and weight at the day of first egg were recorded for the birds. Daily egg production was recorded along with the weight of the egg. Egg quality parameters such as egg length, width, egg weight, shell weight, shell thickness, shape index, albumin weight, diameter of albumin and yolk, height of albumin and yolk and yolk index were studied. Six ducks and 6 drakes were slaughtered at 160 day of age and live weight, carcass weight, feather, skin, blood, head, leg and major cuts were measured and expressed as percentage. The data were tabulated and analyzed as per the procedure of Snedecor and Cochran (1989).

Average hatch weight of the desi ducklings was 25±1.87 and 30.6±2.61g in drakes and ducks respectively. From the first fortnight drakes recorded higher body weight as compared to ducks and this trend continued till 8th fortnight when drakes reached a body weight of 1460±18.7 as against 1250±92.2 g

for ducks. Local Andaman ducks were of medium size and adults weighed 1100–1500 g. The posture and gait is generally squat. Drakes have a plumage colour varying from gray-brown to blackish brown. Bill colour was orange and feet color bright orange. Head colour was lustrous black-green and tail colour blackish green and brown. Das *et al.* (2002) also recorded greenish bronze colour in the head of Khaki Campbell drakes. Plumage colour was predominantly light to dark brown and some times black in case of ducks. Head colour was blackish brown and tail colour was brownish black. Bill and shank colour were dull yellow and pinkish yellow. Drakes were slightly larger in length, height and girth as compared to ducks.

Age at sexual maturity was 183±4.25 days with a corresponding body weight of 1257.14±35.16 g. These ducks produced 110-eggs/annum with an average egg weight of 46.18±2.16 g in the initial stages of laying and 59.89±1.18 g at the later stage of laying period. Egg weights of Andaman ducks were comparable to the Nageswari duck eggs (Roy *et al.* 2002). Desi duck egg had a shape index of 72.011±0.97 and shell thickness 0.473±0.022 mm. These values compare well with the values reported by Roy *et al.* (2002) for the

Table 1. Egg quality parameters

Parameters	Values
Egg weight (g)	59.896±1.18
Egg length (cm)	5.81±0.104
Egg width (cm)	4.34±0.058
Shell weight (g)	7.661±0.2
Shell thickness (mm)	0.473±0.022
Shape index	74.949±1.86
Yolk weight (g)	24.252±1.35
Albumin height (cm)	5.22±0.42
Albumin diameter (cm)	4.57±0.18
Albumin index	0.864±0.033
Yolk diameter (cm)	4.45±0.1
Yolk index	0.761±0.04
Yolk pH	7.05±0.29
Albumin pH	8.45±0.13
Yolk height (cm)	3.4±0.18

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Table 2. Carcass characteristics of local ducks and drakes

Parameters	Drake	Duck
Live wt. (g)	1180±20	1010±10
Dressed (%)	58.475±0.14	66.815±1.81
Blood loss (%)	7.150.40	7.150.40
Head (%)	6.431±0.56	6.239±0.16
Skin and feather**	25.99±4.26	22.93±1.22
Giblet (%)	9.705±0.29	11.875±0.73
Leg (%)	2.955±0.37	7.150.40
Gizzard (%)**	5.645±0.35	5.775±0.065
Crop (%)	7.150.40	7.150.40
Wing (%)	7.150.40	7.150.40
Liver (%)	2.88±0.82	4.455±0.16
Heart (%)	7.150.40	1.485±0.05
Thigh (%)	15.06±0.65	14.685±0.39
Breast (%)	22.295±1.41	19.595±1.02
Back (%)	18.44±2.43	14.725±2.41
Neck (%)	7.150.40	6.955±0.18
Intestine (%)	3.3±0.03	9.705±0.09

**Significant at ($P<0.05$).

Negeswari duck eggs (73.90±0.59 and 0.475±0.004). Yolk and albumin percentage on weight basis were 40.49 and 45.50%, respectively, which are lower as compared to Kuttanad duck eggs (Jalaludeen *et al.* 2004). This difference could be due to the difference in weights of the eggs (51 vs. 65g). Albumin index and yolk index of Andaman duck egg was higher in comparison to the Negeswari duck of Assam (Roy *et al.* 2002). Yolk pH was 7.05±0.29 and albumin pH was 8.45±0.13 (Table 1).

Average live weight of drakes was slightly higher as compared to ducks at the age of 160 days. Carcass yields of 66.81±1.81 and 58.47±0.14 percent was recorded in ducks and drakes respectively. These values compare well with observations of 65-68% ready to cook meat in case of Kuttanad Ducks (Jalaludeen *et al.* 2004). On slaughter, dressing%, blood, head, giblet, leg, crop, wing, liver, heart, thigh, breast, back and neck cuts were not significantly different in ducks and drakes. However, carcass composition revealed significantly higher ($P<0.05$) skin and feather in drakes as compared to ducks (Table 2) and intestine and gizzard in ducks was higher as compared to drakes. The values for neck, back, breast, thighs cuts were slightly higher than the observations of Mahanta *et al.* (2000) in Pati ducks of Assam. Where as, wing % was slightly lower in Andaman ducks as compared to

Pati ducks (9.52±1.19 and 10.49±0.97). Among the in edible offals, blood, intestine, head, crop, skin and feather components were comparable to Pati ducks (Mahanta *et al.* 2000). Giblet percentage in drake and ducks was higher in Andaman ducks as compared to Pati ducks. This may be due to the fact that in hot and humid climate of Andaman and Nicobar islands birds are continuously exposed to the higher levels of aflatoxins and other toxins through the feed, which is responsible for the enlargement of the liver. By and large ready to cook meat was slightly lower in Andaman ducks as compared to Pati ducks which could be due to lower body weight of Andaman ducks as compared to Pati Ducks.

SUMMARY

Andaman ducks are characterized as medium sized, weighting of 1100-1500g with gray-brown plumage, white feathers or a white ring under side of the neck, greenish black head, brown-black tail and orange bill and pale shank. Andaman ducks lay about 110 eggs/annum with an average weight of 51.13±2.16g and carcass yield ranging from 58.4-66.8% at 160 days.

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