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A study on the length and breadth of thyroid gland of pati ducks (*anas platyrhynchos domesticus*) in Assam at various age groups

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Abstract
In the present study, a total of 42 *Pati* ducks were utilized. The ducks were randomly divided into seven (7) groups consisting of six (6) birds in each group. The seven groups of birds were sacrificed at 7 different age viz. day old, 2 weeks, 4weeks, 8weeks, 20weeks, 30weeks and 40 weeks. The location and relative topographic in-situ position of the thyroid gland was recorded. Both the thyroid glands were taken out and length and breadth of each of them were recorded. The paired thyroid glands in the *Pati* ducks were located on either side of the trachea close to the vascular angle formed by the subclavian artery and common carotid artery. Length and breadth of the thyroid gland also showed an increasing trend with age.

Keywords: Length, Breadth, Thyroid gland, *Pati* ducks.

1. Introduction

The thyroid gland is a unique endocrine gland which plays an important role in carbohydrate, protein, lipo-regulatory mechanisms etc.relevant to growth. It is a critical organ for maintaining general metabolic rate and controlling pre and post natal growth and differentiation of many organ systems. Literature on the weight of thyroid gland in duck is scanty and therefore, this work was undertaken to study the age related developmental changes of thyroid gland in *Pati* ducks.

Materials and methods

The experimental birds were sacrificed according to the method of Gracey (1986). After slaughter, the birds were placed on a clean dissecting table, mid-ventral incision was put ;clavicle along with breast muscles were cut and were reflected carefully without disturbing the organs of the region. The thoracic cavity of each bird was exposed by making a ventro-median incision and then the thoracic muscular layers and air sac of the clavicle were reflected. The location and relative topographic in-situ position of the thyroid gland was recorded. Both the thyroid glands were taken out and the different biometrical measurements *viz*, length and breadth of the right and left thyroid glands were recorded by Vernier callipers (Mc Cance, 1974). The data were analysed using the Statistical Analyses System version 9.3 (SAS 2012) for Microsoft Windows.

Results and discussion

The paired thyroid glands in the *Pati* ducks were located on either side of the trachea close to the vascular angle formed by the subclavian artery and common carotid artery. Similar observations were made by Raether (1964) in ducks. The thyroid glands were round, oval or elliptical and were reddish brown in colour. Similar findings were observed by Hodges (1974) in poultry. The average lengths of the thyroid gland were 0.2716± 0.0054 cm and 0.2750 ± 0.0050 cm for left and right respectively in day old ducks and 0.9833± 0.0021 cm and 0.9866 ± 0.0021 cm for left and right respectively in case of 40 weeks old birds. The average breadth of thyroid in day old ducklings were 0.2016 ± 0.0030 cm for left and 0.2016 ± 0.0040 cm for right , while in the case of 40 weeks old ducks the corresponding values were 0.7783 ± 0.0040 cm and 0.7783 ± 0.0040 cm for left and right thyroid respectively. Similar increasing trend was observed in all the three morphometric parameters during postnatal growth was observed by Balasundaram (2000) and Firdous *et al*. (2012). The length and breadth of right and left thyroid glands from day old to 40 weeks age groups of *Pati* ducks are shown in table 1.

Table 1: Length and breadth of the thyroid glands in *Pati* ducks at different age groups

Experimental groups	Age		Length (cm)	Breadth (cm)
I	Day Old	Left	0.271±0.005^{g}	0.201 ±0.004^{g}
		Right	0.275±0.005^{g}	0.2016±0.004^{g}
II	2 Weeks	Left	0.420±0.002^{f}	0.260 ± 0.002^{f}
		Right	0.426±0.003^{f}	0.265 ± 0.003^{f}
III	4 Weeks	Left	0.476±0.014^{e}	0.388 ± 0.005^{e}
		Right	0.473±0.004^{e}	0.380 ± 0.005^{e}
IV	8 Weeks	Left	0.568±0.003^{d}	0.438 ± 0.004^{d}
		Right	0.566±0.003^{d}	0.438 ± 0.004^{d}
V	20 Weeks	Left	0.653±0.003^{c}	0.576 ± 0.004^{c}
		Right	0.651±0.003^{c}	0.576 ± 0.004^{c}
VI	30 Weeks	Left	0.776±0.003^{b}	0.636 ± 0.004^{b}
		Right	0.776±0.003^{b}	0.636 ± 0.004^{b}
VII	40 Weeks	Left	0.983±0.002^{a}	0.778 ± 0.004^{a}
		Right	0.986±0.002^{a}	0.778 ± 0.004^{a}

Means with different superscripts are significantly different from each other.

Conclusion

The present study concluded that the gross morphometrical measures viz. Length and breadth of the thyroid gland of both side increases with the advancement of age.

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