

Morphometric, Macroscopic and Microscopic Investigation of Glandulae Uropygiale in Turkeys (Meleagris Gallopavo)

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Abstract

This study was carried out to investigate the macro-anatomical, morphometric, histological and electron microscopic characteristics of the uropygial gland in adult male and female turkeys (*Meleagris Gallapova*). The glandula uropygialis of thirteen adult turkeys (6 males, 7 females) were used for this study. It was determined that this glandular structure located dorsal to the last caudal vertebrae was heart-shaped and consisted of two lobes and a papilla system. As a result of statistical evaluation, significant differences were found between the sexes in the parameters of lobe length, papilla width and papilla height ($P<0.05$). Also, PUI value had a statistically significant difference ($P<0.05$). Tissue samples taken to determine the histological structure of the gland were stained with Haematoxylin & Eosin, Crossman's and Periodic Acid Schiff. Histological examination revealed that the gland had a two-lobed structure surrounded by a capsule composed of connective tissue. It was determined that the gland had a tubuloalveolar-holocrine structure and the epithelial layer consisted of cellular layers as germinative layer, intermediate layer, secretory layer and degenerative layer from the periphery to the centre. In the scanning electron microscope examination, the lobe structure of the gland consisted of different shaped follicles protruding from the surface. It was observed that these glandular follicle structures were gathered together in different ways or mostly disorganised. As a result of the study, it was determined that the morphological and histological structure of the uropygial gland in turkeys was similar to that of other bird species, but showed some species-specific and habitat-dependent differences in general. **Research Highlights:** The uropygial gland consisted of a system of two lobes and one papilla in each of male and female turkeys. The glandular lobes consisted of follicles surrounded by connective tissue, while the follicles were connected to each other by interfollicular septae. The results obtained in morphometric measurements revealed statistical differences between male and female birds. Histological examination showed PAS (+) reaction in the basal membranes of tubule epithelial cells and secretion. Lymphoid cell communities were found in both connective tissue and intertubular regions.

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