

Summary of the MSc, Thesis No: **6138** Histology, Faculty of Veterinary Medicine, Urmia University.

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Title: Histological, histomorphometrical and histochemical comparative study of liver in adult male turkey and domestic chicken in the west Azerbaijan

Summary:

The liver is an accessory organ of the digestive system and the largest gland in the body. And it plays a role in a wide range of functions, including metabolism of fat, carbohydrate, protein, vitamins and minerals, removal of waste materials and detoxification. The liver is the main storage place for fat-soluble vitamins (A, D, K and E, as well as vitamin B12, glycogen, and some minerals (Fe and Cu). According to the less information about the comparative histology and the liver histochemistry of turkey and local male chicken, it was decided to conduct this research in Urmia city. After slaughtering and sampling from the liver of animals, and after fixing in 10% buffered formalin solution for 48 hours and preparing paraffin histological sections, the samples were examined in terms of histological parameters, histomorphometry and histochemistry. Hematoxylin-eosin staining to study histology and histomorphometry, PAS staining to show the storage of carbohydrate compounds in the cytoplasm of hepatocytes, Sudan Black to indicating the fat storage in hepatocytes, Masson's trichrome to show the dispersion of collagen fibers and toluidine blue staining were applied to show mast cells. Also, a histomorphometric study was carried out in relation to the different parameters of the liver. In the histomorphometric study regarding the parameters of the liver such as the mean thickness of the bilayer plates of hepatocytes, the mean number of hepatocytes, portal areas, central veins, it was shown that there is a significant difference between turkeys and roosters in all of the above cases, and this showing the histological difference in terms of histomorphometry is in the liver of these two animals. It was also shown that the mean number of Kupffer cells in roosters was significantly higher than in turkeys, and this probably indicates the high immunological capacity of this animal compared to turkeys. In this study, no significant difference was observed in terms of the average number of mast cells among the studied animals, however, the number of mast cells per unit area was higher in turkeys than in roosters. In general, it can be concluded that the studied histological parameters, except for the mean number of mast cells, had significant differences between turkeys and roosters ($p < 0.05$), and the distribution mode of glycogen storages in their hepatocytes was different.

Key words: Histology, Histomorphometry, Liver, Turkey, Domestic chicken