عنوان مقاله:

(Anatomical, histological and histomorphometric study of the intestine of the northern pike (Esox lucius

محل انتشار:

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خلاصه مقاله:

BACKGROUND: The northern pike Esox lucius is a fresh waterspecies belonging to the Esocidae family. It is a carnivorousfish which mostly feeds on invertebrates and fishes. Themorphology of its intestine is very useful for understandingthe fish's digestive physiology, diagnosing some intestinaldiseases and formulating suitable feeds. OBJECTIVES: Thisstudy was designed to determine the anatomical, histologicaland histomorphometric properties of the intestine of E. lucius.METHODS: The intestines of five E. lucius were examined inthis study. After anatomical dissection, the histological specimenswere taken and fixed in 10% formalin. Then, tissuepassages were stained with hematoxylin-eosin, and Masson'strichrome. RESULTS: The anatomical examination showed theshort intestine with intestinal coefficient 0.68±0.09 in E. luciuswhich is a characteristic of the carnivorous species. The histologicalstudy revealed that the intestinal wall of E. lucius iscomposed of tunica mucosa, submucosa, muscularis, and serosa.The muscularis mucosa was not visible in the intestine. Thestratum compactum is present between tunica mucosa and tunicasubmucosa. The histomorphometric results differentiatedbetween three parts in the intestine of E. lucius namely anterior,middle and posterior. The maximum height of mucosal foldswas observed in the anterior intestine due to its role in nutrientabsorption. The mucosal fold's height then decreased towardsthe posterior intestine. The tunica muscularis is significantlythicker in the anterior intestine, and the circular muscle layeris thicker than the longitudinal muscle layer throughout theentire length of the intestine. The posterior intestine possessedlarge numbers of goblet cells in comparison with other parts ofthe intestine, to promote elimination of unabsorbed particles.CONCLUSIONS: The results of this study revealed adaptation forthe species feeding habits, so as to protect the intestine and increaseabsorptive processes.

کلمات کلیدی:

Esox lucius, intestine, anatomy, histology, histomorphometry

لینک ثابت مقاله در پایگاه سیویلیکا: