

NOTICE OF PUBLICATION



AQUAFISH COLLABORATIVE RESEARCH SUPPORT PROGRAM

RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

Title: Anatomical and histological characteristics of the intestine of the Topmouth Culter (*Culter alburnus*)

Author(s): X. J. Cao, W. M. Wang and F. Song
College of Fisheries, Key Lab of Agricultural Animal Genetics, Breeding and Reproduction of Ministry of Education, Huazhong Agricultural University, Wuhan, Hubei, 430070, China

Date: October 4, 2011 Publication Number: CRSP Research Report 11-277

The CRSP will not be distributing this publication. Copies may be obtained by writing to the authors.

Abstract: Topmouth culter (*Culter alburnus*), a freshwater carnivorous fish of the Cyprinidae, is one of the most popular fish species in aquatic market in China. The anatomy and histology features of fish intestine are very useful for understanding digestive physiology, diagnosing some intestinal diseases and formulating suitable feeds. Thus, here we first characterize topmouth culter intestine via light microscope, transmission electron microscope and scan electron microscope. The 'Z' shaped intestine can be divided into three parts (e.g. the anterior intestine, middle intestine and posterior intestine), with an intestinal coefficient of 0.68. The anterior intestine possessed the longest mucosa folds and thickest muscularis among the three intestinal parts, and microvilli were very well-developed whilst many mitochondria, endoplasmic reticulum and lysosomes were found in which. This indicated the anterior intestine was a main region for digestion and absorption of food in the topmouth culter. While the vacuoles observed in the posterior intestine may be closely related to the intracellular digestion. Neutral and acid mucus were strongly present throughout the intestine. This detailed descriptive paper will be very helpful for studies of topmouth culter related to its digestive physiology, intestinal disease control and feed nutrient.

This abstract was excerpted from the original paper, which was published in *Anatomia Histologia Embryologia: Journal of Veterinary Medicine* (2011) 40: 292-298.

CRSP RESEARCH REPORTS are published as occasional papers by the Management Entity, AquaFish Collaborative Research Support Program, Oregon State University, 418 Snell Hall, Corvallis, Oregon 97331-1643 USA. The AquaFish CRSP is supported by the US Agency for International Development under CRSP Grant No. EPP-A-00-06-00012-00. See the website at <aquafishcrsp.oregonstate.edu>.