

Kummachphon Pureepong 2007: Histopathology and Hematology of some Fishes in the Mekong River. Master of Science (Biology), Major Field: Biology, Department of Zoology. Thesis Advisor: Miss Kantimane Phanwichien, Ph.D. 113 pages.

A Total of 117 fish of both 52 cyprinids and 65 catfish were randomly collected from the Mekong River from 5 stations: Amphur Chiang San, Chiang Rai Province, Amphur Chiang Khan, Leoi Province, Amphur Bungkan, Nongkhai Province, Amphur Muang, Nakhon Phanom Province, and Amphur Kong Chiam, Ubonratchathani Province. The fish were collected for health evaluation in December and May that represented the winter and summer. The evaluation was done by histopathological study of liver, pancreas, kidney and spleen. Fish tissues from all stations showed the same pathologic appearance in the following characteristics. The vacuolar degeneration, cytoplasmic accumulation of brownish – green granules, necrosis of hepatocytes, granuloma formation and angiogenesis were observed in the liver tissues. In the pancreas, atrophy and necrotic acinar cells were observed. Glomerular degeneration, tubular epithelial accumulation of hyaline droplets and necrosis and renal tubule hyperplasia were observed in the kidney. In the spleen, there were hemorrhage, melanomacrophage center and necrosis of both red pulp and white pulp. Comparing the pathologic severity, the catfish was found more severe than the cyprinids, and the catfish collected in summer showed more severe than those collected in winter. These histopathological changes might be from their feeding habit on benthos which caused accumulation of toxic pollutants. The hematocrit of every species of fish revealed in the wide range. The lowest hematocrit value found in the cyprinid from Chiang Rai Province, was 13.0 whereas the catfish from Ubonratchatani Province, was 14.0. The activities of serum enzyme, GOT and GPT were markedly increased. The highest activity of GOT found in the cyprinid from Chiang Rai Province, was 364.90 U/L whereas the catfish from Nakhon Phanom Province, was 300.20 U/L. For the activity of GPT, the highest activity found in the catfish and cyprinid from Nakhon Phanom Province, was 388.77 and 202.70 U/L, respectively. Increase in the activity of both serum enzymes indicated the response of fishes to toxic pollutants which showed correlation to the histopathological changes of liver and kidney. According to the results from this study, catfish from Chiang Rai, Nakorn Phanom and Ubonratchathani showed more severe pathological changes than those of the other stations.

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