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Liver and Kidney Histopathology: Biomakers of No. 1 Fuel Toxicosis in African Catfish, *Clarias gariepinus*

Abstract:

African catfish, *C. gariepinus* (mean total length, 31.49±5.45cm, sem; total length, 18.50±2.42g, sem) were exposed to grade levels of light fuel oil-No.1 fuel (0.75, 150 and 300 μL L^{-1}) in triplicates for 14 days The histology of the kidneys from the normal showed uniform morphology of the nuclei and areas with mild to moderate steatosis. Exposed fish showed an increased glomerular cellularity, degeneration of kidney tubules with infiltrate of few neutrophils. The inerstitia were infiltrated by inflammatory cells (neutrophils and and lymphocytes) which was concentration-dependent. There was extensive necrosis with the majority of the neoplastic tubules in the neophroblastoma stage at the highest concentration. The tubular cells were also hypertrophic and the lumina contained amorphous eosinophilic materials. The sections of the livers from the control fish had normal tubules, haematopoietic tissues and portal triad that contained dilated portal vein. There were some areas showing mild to moderate steatosis. In exposed fish, the there was degeneration of cords of hepatocytes and severe necrosis of hepatocytes, pycknosis and karyolysis of hepatocellular nuclei as well as hyalination of hepatocytes with narrowing of the liver sinusoids channels. The central veins were congested with nucleated erythrocytes, centrolobular necrosis with areas of ballooning degenerative vacuolation and steatosis particularly in the higher concentrations. There were focal areas of infiltration of the liver by inflammatory cells. Results from this study indicates that the pathology of the liver and kidney of *C. gariepinus* could be a good biomarker for the assessment of light fuel toxicosis.

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