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Document Title : *EFFECT OF SOME INSECTICIDES ON BIOCHEMICAL AND HISTOLOGICAL STRUCTURE OF THE BOLTI FISH Tilapia Spp. IN SAUDI ARABIA*

تأثير بعض المبيدات الحشرية على التركيب الكيموحيوي والنسيجي لأسماك البلطي Tilapia Spp في المملكة العربية السعودية .

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Abstract : The present study investigated one of the toxicity problems which affect fish in their water environment. This problems are caused by the insecticide of a mixture forms. The impacts of one of these insecticide which called Contra/insect 500/50 E.C. was photo metrically investigated on the liver , muscles , and gills , Acetylcolinestrease (AChE) , Lactate dehydrogenase (LDH) , and Succinate dehydrogenase (SDH) , and on the ultra structure of fresh water Oreochromis spilurus. Fish were exposed to three pre-estimated sub-lethal Contra/insect concentrations 0.015, 0.035, and 0.70 mg/L , for 36 , 72 , 120 , and 168 hours. The results obtained showed a significant alternations on the enzymes activities of the treated fish organs, when compared with the control group. There was a significant (P?0.05) decline in the AChE and LDH and elevations in the SDH activities in most cases of the studied organs. There were insignificant fluctuations in the results occurred under some insecticide concentrations or/and under certain exposure periods. These fluctuations could be interpreted as due to restorative phenomenon which may develop as natural mechanism of detoxification and defense . These may also reflect on the functional orientation of the tissue towards metabolic compensation to stress caused by the insecticide toxicity. However, the present results showed a strong correlation (R^2) between the Contra/insect insecticide of different concentrations & exposure periods, and its toxicity effect on the fish enzymes. Electron microscopy investigations revealed ultrastructure alterations in hepatocyte , nuclei appeared small in size and in some cases they disappear , and they were correlated to the insecticide concentrations and exposure periods. There were proliferation of SER and focal lysis of myofibrils and increase in the mitochondria size and glycogen amount of the treated muscles when compared to the control. In the treated gills there were different profiles of mitochondria, and the nucleus appeared small in size and disappear completely in the chloride cells in some cases.

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