

- Document Type** : Thesis
- Document Title** : *Effect of Potassium Bromate on Kidney, Liver and Gills Tissues of Tilapia (Tilapia zilli) Fish*
تأثير برومات البوتاسيوم على أنسجة الكلية والكبد والخياشيم في أسماك البلطي
- Document Language** : Arabic
- Abstract** : The toxicity of the nutritional supplement Potassium Bromate was investigated at various concentrations (700, 900, 1000, 1300, 1500 mg/l) for 96 hours on the cellular and biochemical properties of the hepatic, kidney and gills cells in Tilapia fish, (Tilapia zilli) after acclimatization to the above concentrations. The results showed that the average fish weight in treated and control groups was not significant, and that may be due to the short period of the experiment (96 hour), the lethal concentration (LC50) was found to be 1000 mg/l . Moreover, the Tilapia fish showed significant behavioral changes compared to controls during the period of the toxicity tests. Fish activity decreased and mouth movements increased for breathing air from the surface, in addition to the reddening of the operculum and falling of some scales and excretion of stools in spite of its fasting for 24 hours before the experiment. Histological studies on the investigated organs (kidney, liver and gills), showed that all the organs were affected by all the Potassium Bromate concentrations used and the effect was increased with increase in concentration. The sequential epithelial of gills filaments were peeled in all the concentrations used .Peeling increased as the concentration increased, accompanied with paleness of the gills plates and shortage of blood supply as well as enlargement of gills filaments. The liver was affected, especially the central part. These margins of cells were removed and liver stripes became irregular, with cracking of blood vessels and appearance of inconsistence colored granules. Also, the pancreatic cells were gradually affected by losing their external boundaries, contraction of some cells and absence of secretion granules. The cells that lined urinary tubes of the kidney were affected; the cells aparted and lost their natural uniformity. Also, the nucleuses lost their central position, and the number of vacuoles increased. Circumference cells of urinary glomeruluss cells were degraded and were unable to stain as they lost their cellular components. In addition, the wall layer of Bowmans capsule was damaged. Biochemical examination s of hepatic and kidney functions showed that there were significant changes in the biochemical components of the livers and kidneys. These changes included increase in AST and ALT enzymes activity of the liver and increase of urea and creatinine in kidney, which indicated a damaging effect due to Potassium bromate.
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