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Investigation Acute Toxicity and Bioaccumulation Mineral Mercury in Rutilus frisii Kutum

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Abstract : Rutilus frisii Kutum was exposed to various concentrations of mercuric chloride in water to determine its acute toxicity and bioaccumulation. We carried out ten treatments with three replicates and one control for each of the chemicals using the static O. E. C. D. method in 55-liter-tanks each containing 14 fingerlings. During the experiments, the average pH was recorded as 7.8, total hardness was measured to be 255 mg/l, the average water temperature was 27±1 degrees centigrade and dissolved oxygen was 7.2 mg/l. Mean LC50 values of Hgcl2 for juvenile R. frisii kutum with mean weight 1±0.2 gr were 0.102 and 0.86 mgHg/l at 24h and 96h, respectively. The bioaccumulation values during 24h in tissue, kidney, and gill were 1.55, 16.1, and 22.7 mgHg/l, respectively. So, these values during 96h were 2.8, 16.8, and 26.65 mgHg/l, respectively. The bioconcentration factors in tissue, kidney, and gill during 24h were 14.75, 153.39, and 216.11 and so during 96h were 33.8, 198.1, and 313.5 times. These results show that bioaccumulation was highest in the gill and then kidney and tissue, respectively. This study suggested that between mercury concentrations of water with bioaccumulation in tissue more than kidney and gill.

Keywords : HgCl2, LC5096h, bioaccumulation, Rutilus frisii Kutum, Caspian Sea
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