

عنوان مقاله:

Effects of organophosphate, diazinon on some haematological and biochemical changes in *Rutilus frisii kutum*

محل انتشار:

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خلاصه مقاله:

The acute toxicity and effects of diazinon on some haematological parameters of kutum (*Rutilus frisii kutum*, Kamensky, ۱۹۰۱) weighing 613.33 ± 157.06 g were studied under static water quality conditions at $15 \text{ }^{\circ}\text{C} \pm 2 \text{ }^{\circ}\text{C}$. These experiments were carried out based on the standard TRC, ۱۹۸۴ method over ۴ days, and controlled for the effective water physicochemical factors having pH ranges of ۷-۸.۲, total hardness 300 mg l^{-1} (CaCO_3), dissolved oxygen 7 mg l^{-1} . The results showed that the ۹۶h LC_{50} value of diazinon was 0.4 mg l^{-1} and that the maximum allowable concentration (MAC) value of this toxin was 0.04 mg l^{-1} . The second stage of experiments consisted of four treatments: LC₀: 0 as blank, treatment A with a concentration of LC₁: 0.107 mg l^{-1} , treatment B with a concentration of LC₅: 0.157 mg l^{-1} , treatment C with a concentration of MAC value: 0.04 mg l^{-1} . Male brood stocks of *R. frisii* were treated with these concentrations for ۴۵ days. The results showed that long-term exposure to diazinon causes a decrease in the erythrocyte count (RBC), haemoglobin (Hb), haematocrit (PCV), mean corpuscular volume (MCV), mean corpuscular haemoglobin (MCH), mean corpuscular haemoglobin concentration (MCHC), leucocyte count (WBC), lymphocyte, testosterone, iron (Fe), sodium (Na), lactate dehydrogenase (LDH) and cholinesterase (ChE) ($P < 0.05$). Diazinon also causes an increase in prolymphocyte, aspartate aminotransferase (AST), cholesterol, alkaline phosphatase (ALP) and adrenaline ($P < 0.05$). There are no significant effects on monocyte, eosinophil, magnesium (Mg), chloride (Cl), glucose (BS), urea (BUN), uric acid (U.A), triglyceride (TG), calcium (Ca), albumin (Alb), total protein (TP), cortisol, noradrenaline and high density lipoprotein (HDL) levels in *R. frisii* male brood stocks ($P > 0.05$). The results showed that long-term exposure to low concentrations of diazinon causes changes in some haematological and biochemical parameters of *R. frisii* male brood stocks.

کلمات کلیدی:

Diazinon, Haematological, Biochemical, *Rutilus frisii kutum*

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