

عنوان مقاله:

Plasma enzymatic, biochemical and hormonal responses to clove oil, 2-phenoxy ethanol, and MS-222 exposed to Caspian brown trout (*Salmo trutta caspius, kessleri*)

محل انتشار:

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خلاصه مقاله:

The effects of three anesthetics, clove oil (CO) (30 mgL⁻¹), 2-phenoxy ethanol (2-PE) (0.3 mL⁻¹), and MS-222 (100 mgL⁻¹) were examined on blood enzymes including lactate dehydrogenase (LDH), creatine kinase (CK), alanine aminotransferase (ALT), aspartate aminotransferase (AST), albumin, glucose, and cortisol levels in the Caspian brown trout. Blood parameters were evaluated in the control (no anesthetics), and three other treatments 10 min and 24 h after the end of anesthesia. Significant increases were seen in blood albumin, ALT, AST, glucose, and cortisol levels in the treatment 24 h following anesthesia by MS-222 compared to the control ($p < 0.05$). Significant increase in blood glucose was also observed in the treatment 10 min after anesthesia with CO. Post-anesthesia cortisol levels significantly increased in 2-PE treatment after 10 min, in CO treatment after 10 min and 24 h, and in MS-222 treatment following 24 h compared to control. CK activity was significantly decreased only in 2-PE treatment in comparison to control. Except for the treatments of 24 h after anesthesia with MS-222 and 10 min after anesthesia by 2-PE, ALT enzyme activity did not show significant differences in all treatments compared to control ($p > 0.05$). As results, MS-222 is less stressful than both 2-PE and CO in short term. The long term stressing effect of 2-PE was detected to be lesser than both MS-222 and CO. So, based on the enzymatic and hormonal responses, MS-222 can be effectively used to reduce severe instantaneous stress such as surgery and spawning.

کلمات کلیدی:

Caspian brown trout, 2-phenoxy ethanol, clove oil, MS-222, Blood enzymes

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