

**Some hematological and biochemical changes in blood serum of Grass carp  
(*Ctenopharyngodon idella*) vaccinated with *Aeromonas hydrophila* following exposure  
to sublethal concentration of diazinon**

ABSTRACT

.Diazinon is commonly used for pest control in the agricultural fields in north of Iran. This study was conducted to determine the chronic toxicity of organophosphorous pesticide (Diazinon) in vaccinated fish and its effects on some hematological parameters and biochemical blood plasma profiles of Grass Carp (*Ctenopharyngodon idella*). This experiment was carried out in three groups. The first group was vaccinated and exposed to diazinon (group A) while the second group was vaccinated and bathed with PBS bath (group B). The remaining fish were used as unvaccinated fish and were kept in clean water separately (group C). Diazinon was applied at concentrations of 2 mg/L for 12 hours since the experiments were initiated. The experimental groups (A and B) showed significantly lower values ( $p < 0.05$ ) of erythrocyte count, haemoglobin content, haematocrit, leucocytes, Lymphocyte, myelocyte and monocyte, as well as in alkaline phosphatases, alanine aminotransferase, aspartate aminotransferase and, lactate dehydrogenase compared to the control group (C). Values of MCV, MCH and MCHC of experimental species (A and B) were compared to the control group (C). The results of examinations of the biochemical blood plasma profile indicate a marked neurotoxic effect of diazinon in fishes. Changes in values of both erythrocyte and leukocyte profile after exposure to diazinon-based preparation may be referred to disruption of haematopoiesis as well as to a decrease on non-specific immunity of the fish

**Keyword:** Diazinon; Organophosphorous pesticide; Grass Carp; Hematological parameters