بحث رقم (5)

Research Title :	**Evaluation of Antioxidant Response and Histopathological Alterations in *Cyprinus carpio* and *Oreochromis niloticus* Infected with Zoonotic Bacterial, *Aeromonas hydrophila.***
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Abstract: *Aeromonas hydrophila* is one of the major virulent zoonotic bacterial diseases that adversely affect the health of farmed fish, inducing higher mortalities. The current study focused on comparing the resistance of the Common carp, *Cyprinus carpio*, and Nile tilapia, *Oreochromis niloticus*, to *Aeromonas hydrophila* infection by investigating the antioxidant responses and histopathological alterations. Juveniles of *C. carpio* and *O. niloticus* were randomly alienated into a control group (uninfected) and a challenged group infected with 100 µL of *A. hydrophila*. Samples of liver, kidney, and spleen were collected post-infection for 7 days to monitor antioxidant response, including glutathione peroxidase (GPX), superoxide dismutase (SOD), and catalase (CAT), and the assessment of the histopathological altera- tion in the vital organs. The antioxidant indicators showed significant alterations post-exposure to *A. hydrophila*. Meanwhile, *O. niloticus* has significantly regulated an active antioxidant response than *C. carpio*. Histological architecture showed that the liver is the most affected organ compared to the kidney and spleen and revealed severe aggregation of melanophores and macular degeneration. Based on the study outcomes, *A. hydrophila* is a highly virulent bacterium that induces noticeable alterations in the antioxidant mechanism and histopathological changes in the liver, kidneys, and spleen of *C. carpio* and *O. niloticus*. However, *O. niloticus* experiences an improved antioxidant response against *A. hydrophila* infection compared with *C. carpio*.