

Toxic element bioaccumulations in exotic fishes of Upstream of Sakarya River Basin (Turkey): Nile Tilapia (*Oreochromis niloticus*) and African Catfish (*Clarias gariepinus*)

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ABSTRACT:

The Sakarya River that was known as Phrygia in ancient times is the third longest river in Turkey and was exposed to intensive agricultural, domestic and industrial pollution. In the present study, some toxic element concentrations (zinc, copper, manganese, cadmium and lead) were investigated in muscle, gill and liver tissues of *Clarias gariepinus* (Burchell, 1822) and *Oreochromis niloticus* (Linnaeus, 1758) caught from the Upstream of Sakarya River Basin. Cluster similarity and distance analysis and matrix plot distribution diagrams were applied to the results to evaluate the data properly by using the past package program. According to the data observed, cadmium, copper and lead levels recorded in liver tissues and manganese levels recorded in gill tissues of two exotic fish species were significantly higher than the other tissues. Lead concentrations detected in the muscle tissues of fishes were significantly higher than the limit value specified by the Turkish Food Codex.

Keywords:

Sakarya River Basin, Heavy metals, *Clarias gariepinus*, *Oreochromis niloticus*