عنوان مقاله:

Research Article : Accumulation of heavy metals in different organs of the Caspian kutum, Pikeperch, and their intestinal parasites from the southern Caspian Sea

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نویسندگان:

A. Sadrinezhad - Ayatollah Amoli Branch, Islamic Azad University

L. Golestan - Ayatollah Amoli Branch, Islamic Azad University

H. Khara - Ayatollah Amoli Branch, Islamic Azad University

A. Ghorbani-Hasansaraei - Lahijan Islamic Azad University

M. Ahmadnezhad - - Inland Waters Aquaculture Research Center, Iranian Fisheries Sciences research, Agricultural Research, Education and Extension (Organization (AREEO

خلاصه مقاله:

This study aimed to determine some heavy metal concentrations in the tissues of the Caspian kutum (Rutilus kutum) and Pikeperch (Sander lucioperca) as well as their parasites. The fish samples were collected from the coasts of Guilan province, Anzali port for ۶ months in ۲۰۲۰. The fish muscle, gonad, liver, and intestine organs and their intestinal parasite samples of both fish species were collected and analyzed for Cu, Pb, Cd, and Zn concentration using the tissue dissolution technique and an absorption spectrophotometer. The results confirmed that the concentrations of Zn and Cu in the intestine and liver tissues were significantly higher than those in the muscle and gonad. Cd was not detected in the S. lucioperca tissues and its parasites, but it was detected in the liver and intestine of R. kutum. The mean concentration of Zn in Anisakis simplex parasite of R. kutum was ۲۹.۲۳ times higher than in the host intestine and ۱۵.۸۲ times higher than in the host liver. Also, Zn concentration in Rafidascaris acus (male) and Eustrongylides excisus (female) nematodes of S. lucioperca was ۲۲.۴ and ۶.۰۱ times higher than in the host intestine, respectively. The absorption rate of the four heavy metals in the muscle of R. kutum and S. lucioperca was lower than all international standards and risk index target hazard quotient (THQ) for adults and children. Pb, Cd, Cu, and Zn were not detected in the fish samples. In the contaminated fish with heavy metals, measuring the level of heavy metals in their parasites (nematodes) can also be used as an indicator for heavy metal contamination. Also, the accumulation of metals in the muscle of both fish species was lower than the world standards.

کلمات کلیدی:

Toxic metals, Risk assessment, Rutilus kutum, Sander lucioperca, Anzali port, Caspian Sea