CADMIUM BIOACCUMULATION IN TISSUES
OF FRESH WATER FISH CARASSIUS AURATUS GIBELIO BLOCH
(SILVER CRUCIAN CARP) AFTER CHRONIC CADMIUM EXPOSURE

Nicula Marioara, I. Gergen, Monica Hărmănescu, Despina Bordean, I. Gogoașă, M. Lunca, Laura Căpățână

*Faculty of Animal Sciences and Biotechnologies Timisoara, 119 Aradului Alley, Romania
**Faculty of Agrofood Products Technology, Timisoara, Romania
email: marianicula@yahoo.com

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SUMMARY

The contamination of fresh waters with a wide range of pollutants has become a matter of concern over the last few decades (Vutukuru S.S., 2005). Among animal species, fishes are the inhabitants that cannot escape from the detrimental effects of the heavy metal contamination (Olaifa F.G. et al., 2004). The toxic effects of heavy metals have been reviewed, including bioaccumulation (Adami G.M. et al., 2002). This paper focuses on the extent of Cd bioaccumulation in the different tissues of a cyprinid fish, namely the silver crucian carp (Carassius auratus gibelio Bloch), after a 21 days sublethal cadmium exposure. The experiment was performed on the two groups of silver crucian carps (first group serving as control and second group as experimental group), with a body weight of 36.40±1.2 g, that were collected from Cornesti’ Fishfarm (Timiș county) and aclimatized 2 weeks in laboratory conditions. The experimental group (20 fish) was exposed at a chronic cadmium intoxication in concentration of 1.625 ppm from a Cd(CH₃COO)₂ x 2H₂O stock solution. The sublethal treatment (25% of LC₅₀) was calculated from percentage mortalities of fish as described by Veena et al., 1997. Gill, kidney, intestine, skin, liver, brain, muscle and cord specimens sampled (from control and experimental group respectively) were collected and mineralized (calcined and solubilized in a 0.5N HNO₃ solution) after lethal anesthesia. A CONTRAA 300 atomic absorption spectrometer was used to determine Cd concentration in tissue samples of the fish. Ridings realized at the end of experimental period relieve large increases of Cd concentration in every tissue. Cd tissue accumulation was in order: intestine< kidney < liver< gill< skin<cord< brain< muscle.

BIBLIOGRAPHY