

EFFECT OF ZINC-CONTAINING WASTEWATER ON *SPIRULINA PLATENSIS* BIOACCUMULATION CAPACITY AND BIOCHEMICAL COMPOSITION

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Cyanobacteria *Spirulina platensis* due to its high biosorption and bioaccumulation capacity toward metal ions can be considered as an excellent candidate for environment bioremediation. The effect of Zn and Zn-accompanying heavy metals in different combinations on the accumulation capacity of *S. platensis* biomass and its biochemical composition was investigated.

Four Zn-containing systems with a different combination of metal ions (Zn; Zn/Cu/Sr; Zn/Cu/Ni; Zn/Cu/Sr/Ba) and different metal concentrations were modelled. Studied systems were introduced in the cultivation medium on the fifth day of biomass grow and experiments were performed in three variants, which differed by metal ions concentrations. Metal uptake by biomass was traced using neutron activation analysis.

S. platensis showed high accumulation capacity for all metal ions present in the analyzed system. Because the metals were added at the beginning of the stationary growth phase, and the contact with the biomass was only 24 hours, even at the highest metal concentration in the systems accumulation of *S. platensis* biomass was reduced by no more than 11.2%. *S. platensis* biomass grown in a mono-metallic system expressed two biochemical indicators of stress: decrease of phycobiliproteins content and increase of malondialdehyde content. In biomass grown in the presence of Zn-containing multi-metallic systems three indicators of stress were expressed: decrease of proteins content, reduction of phycobiliproteins content and increase of malondialdehyde content. *S. platensis* biomass can be considered as an effective accumulator for the treatment of Zn-containing industrial effluents.