

MONITORING AND EVALUATION OF CONCENTRATIONS OF SULPHATES AND CHLORIDES IN THE WATER OF THE NATURE RESERVE ŽITAVSKÝ LUH

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ABSTRACT

Noskovič, J., Babošová M., Palatická, A.: Monitoring and evaluation of concentrations of sulphates and chlorides in the water of the Nature Reserve Žitavský luh

Over the years 2003 – 2004 the concentrations of sulphates and chlorides were evaluated in the water of the Nature Reserve (NR) Žitavský luh. Taking of water samples in the NR was realized in regular month intervals from 5 sampling sites. Obtained data showed that during the monitored period the regularity in seasonal dynamics of sulphates was not manifested. The highest mean value for the whole period was in January (65,15 mg.dm⁻³) and the lowest mean value was in July (43,86 mg.dm⁻³). In dependence on sampling site the highest mean SO₄²⁻ concentration (74,72 mg.dm⁻³) for the whole period was in the site of ending of the underground channel which transports the water from the river Žitava to the NR. The lowest mean concentrations for the whole period (51,83 and 53,79 mg.dm⁻³) were determined in sampling sites which are characterized with shallow standing water level and rich layer of organic sediments above the bed. The reason of sulphates fall in these sampling sites was probably, especially in summer season, creating of anoxic conditions suitable for the reduction of sulphates. In dependence on sampling time their highest mean concentrations for the whole period were recorded generally in autumn and winter season. The maximum mean value was in September (46,82 mg.dm⁻³) and the minimum in March (26,76 mg.dm⁻³). The increase of their concentration in September was probably caused by chlorides in applied potash fertilizers (KCl) on agricultural lands situating in the surroundings of the NR. In dependence on sampling site the highest mean concentration of chlorides for the whole monitored period (38,94 mg.dm⁻³) was in sampling site situating on the open water area near a floodgate controlling the water from the NR and the lowest mean value (35,18 mg.dm⁻³) was in the site of ending of the underground channel.

Key words: chlorides, sulphates, water quality, wetland