

## MACROELEMENT AND SODIUM ANALYSIS OF WILLOW (*SALIX ALBA* L.) IRRIGATED WITH EFFLUENT WATER OF AGRICULTURAL ORIGIN

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Water security is now a global issue and the irrigation utilization of wastewater and agricultural effluents can be an alternative solution. In our irrigation experiment with the effluent of an intensive African catfish farm, macroelement content of the short rotation willow clone at different irrigation water doses was determined. The effluent contains large amount of secreted metabolites, faeces, other organic matter and possibly chemicals. Due to the origin of thermal water, wastewater has a high total dissolved salinity and sodium concentration. The study was set up on a 3ha area at MATE IES ÖVKI in Szarvas in 2014. A candidate variety of the FRI, 'Naperti' (*Salix alba* L.) was used. Two types of irrigation water were used (effluent water and the local oxbow lake of the River Körös). Seven treatments were set up, with one non-irrigated control. Effluent and Körös River water was irrigated with 15, 30, 60 mm doses, respectively. Irrigation was performed on a weekly basis with a micro sprinkler system during the growing season. The sampling took place in 2016 after the irrigation cycle. Different plant parts (leaves, stems, roots) were collected. Nitrogen, phosphorus, potassium and sodium contents were determined. As a conclusion, type of irrigation water did not significantly affect the macroelement content of the plants. However, sodium content of the roots was significantly higher, especially in the case of 30 and 60 mm effluent irrigation.