



BOOK of ABSTRACTS

5th INTERNATIONAL CONFERENCE ON PLANT BIOLOGY

(24th SPPS Meeting)

3-5 OCTOBER 2024
SREBRNO JEZERO
SERBIA



Serbian Plant Physiology Society

**Institute for Biological Research "Siniša Stanković" – National Institute
of the Republic of Serbia, University of Belgrade**

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Salix L. clones grown in habitat with heavy metals for use in co-combustion with coal

PP5-8

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Purpose and background: Bioenergy is one of the possibilities that can be obtained from different sources of biomass. One of the sources is the cultivation of fast-growing short-rotation deciduous trees, which give a large amount of biomass per hectare. The purpose of the research is the plantation of 4 clones of willows, namely 3 clones of *Salix alba* and 1 clone of *Salix viminalis* to improve the caloric value of coal. Material and work method: The experiment was set with clones: *Salix alba* - clone B-44; clone 347; clone NS 73/6 and *Salix viminalis* contaminated with a mixture of heavy metals (As, Cd, Cr, Cu, Ni, Pb). Adequate methods were used to investigate the chemical properties of the soil, heavy metal content and the energetic efficiency of the obtained biomass (in the proportion of 5%, 10%, 15% and 20%), to improve the caloric value of coal. The obtained data were statistically processed using adequate statistical methods. Obtained results: The obtained results indicate that there are differences between the clones. Based on the data, it can be concluded that the improvement of the caloric value of coal (13686 kJ/kg) with willow biomass (18124 kJ/kg) depends less on the genotype, more on the sample of coal and the proportion of biomass. The economically profitable share of willow biomass is up to 5-10%.

Keywords: willows, metal content, energetic efficiency

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