

UNIVERSITY OF NIŠ  
Faculty of Technology, Leskovac

## **BOOK OF ABSTRACTS**

15<sup>th</sup> INTERNATIONAL SYMPOSIUM  
„NOVEL TECHNOLOGIES AND SUSTAINABLE  
DEVELOPMENT“

Leskovac, October, 20-21, 2023.

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## **ESTIMATION OF THE POSSIBILITY FOR FURTHER APPLICATION OF ETHANOLIC FRACTION OBTAINED DURING ALGINATE PRODUCTION FROM BROWN SEAWEED BIOMASS**

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The first stage in alginate production is the depigmentation and defatting of brown seaweed biomass using 70% (v/v) ethanol. The obtained ethanolic fraction is discarded from the further production process as a side product. Having in mind these facts, this study aimed to valorize the ethanolic extract generated during the alginate extraction from brown seaweed (*Laminaria digitata*). The possibility of valorization of the extract was estimated based on the determination of the total phenolic and flavonoid content, and the antioxidant activity. For the extract, the total phenolic and flavonoid content was 29.3 g gallic acid equivalent per 100 g dry weight and 1.49 g rutin equivalent per 100 g dry weight, respectively. The results of the DPPH assay showed that the extract exhibited antioxidant activity with the IC<sub>50</sub> value of 42.9 µg/mL. The antioxidant activity of the extract was almost the same as for synthetic antioxidant butylated hydroxytoluene (IC<sub>50</sub> = 36.6 µg/mL). The obtained results indicated that the brown seaweed extract represents the source of phenolic compounds that have an expressed antioxidant activity. This approach is important because it utilizes the extract as the secondary raw material for the recovery of valuable compounds that can be significant as a starting raw material in various branches of industry.