УНИВЕРЗИТЕТ У НОВОМ САДУ
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TOP ACHIEVEMENTS 2021

FACULTY OF TECHNOLOGY

Paper in a journal - Advance diversity of enzymatically modified arabinoxylan from wheat chaff (https://doi.org/10.1016/j.foodchem.2020.128093)

Journal Food Chemistry

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Hydrolysates of arabinoxylan extracted from wheat chaff were prepared using different enzymatic treatments with an emphasis on improvements in their anti-diabetic, antioxidant and functional characteristics. The extracted arabinoxylan was subjected to enzymatic hydrolysis using individual xylanase, arabinofuranosidase, and feruloyl esterase, and their combinations. In all obtained hydrolysates, peaks corresponding to molecular weight lower than 38 kDa were noticed, while non-hydrolysed arabinoxylan had only peaks corresponding to 580 and 38 kDa. Results indicated that applied enzymes could hydrolyse polymeric arabinoxylan while their synergistic actions successfully modified its structure reflecting in lowered viscosity. Besides, it has been observed that the synergistic actions of enzymes improved the biological activities of arabinoxylan more than twice. Chemometric classification analysis showed that synergistic enzymes' actions were predominantly responsible for the improvement of biological activities. It indicated that they might be a useful tool for diversification and enhancement of biological activities of arabinoxylan from wheat chaff.