

## **XYLANASE AND CELLULASE ASSISTED ACID EXTRACTION OF PECTIC FIBER FROM BUTTERNUT SQUASH**

**Maja Milošević\*, Milica Perović, Mirjana Antov**

Department of Applied and Engineering Chemistry, Faculty of Technology, University of Novi Sad,  
Novi Sad, Serbia

\*corresponding author: maja.milosevic@uns.ac.rs

Conventionally, pectic fibers are isolated from plant tissues by means of acidic extraction. As the demand for pectin continually grows it is necessary to enhance the isolation protocols in order to obtain higher yields and better characteristics of this fiber. The use of different cell wall degrading enzymes for the treatment of plant material prior to acidic extraction is suggested in the literature as a way to achieve these goals. On the other hand, butternut squash (*Cucurbita moschata*) is an unconventional source of pectic fiber. The use of this common cultivar for this purpose could additionally increase the quantities of pectin available on the market. This study aimed to investigate the effect of enzymes in a treatment prior to acidic extraction on the yield and characteristics of pectic fiber from butternut squash and compare it with the one extracted by acid. Commercial cellulase and xylanase were cell wall degrading enzymes applied together. The yield of enzyme-assisted and conventional acid extraction was 81.0 mg/g<sub>DW</sub> and 60.6 mg/g<sub>DW</sub>, respectively. The content of galacturonic acid was 2.3-fold higher in pectin polysaccharide obtained with the assistance of enzymes, while its degree of methoxylation was approximately 10% lower. Furthermore, pectic fiber isolated with the assistance of enzymes had a higher content of homogalacturonan in its structure, while the acid extracted one comprised more of rhamnogalacturonan-I. The results of this study revealed a considerable influence of enzymes' involvement in the extraction procedure on the yield and characteristics of pectin from butternut squash.

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