

POTENTIAL OF ENZYMATIC EXTRACTION OF SOY PROTEIN AS GREEN ALTERNATIVE TO ALKALINE EXTRACTION

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Abstract

In recent time, growing global population together with changes in socio-demographics has driven the search for new, sustainable protein sources based on plants which will be able to complement/replace animal proteins in various food applications (Henchion *et al.*, 2017). Among different plants, soy occupies a prominent place because soy protein is a complete protein that contains all essential amino acids required for normal human growth and development (Singh *et al.*, 2008). The aim of this study was to investigate the efficacy of cell wall degrading enzymes in green extraction protocol in recovery of protein from defatted soy grit. Effects of different commercial enzymes (cellulase, pectinase and xylanase used alone or as combinations, as well as commercial enzyme cocktail) were determined by measuring protein extraction yield. In addition, aqueous extraction of protein was performed and put as a control. Applied green protocols resulted in increased protein yield up to 118% compared with control. Furthermore, enzymatic extraction with Enzyme complex (as a commercial cocktail) enabled protein extraction with yield in the same amount as conventional 1 h alkaline extraction. In conclusion, enzymatic extraction with commercial enzyme preparations exhibited highly positive effect on recovery of protein from soy grit. Our findings showed that enzymatic extraction enabled production of soy protein isolate in amounts corresponded to alkaline extraction but through *green* and environmental-friendly *protocol*.

Reference

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