OPTIMALISATION AND POLYPHENOL PROFILING OF ENZYMATICALLY ASSISTED EXTRACTION OF VARIOUS APPLE VARIETIES

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Introduction: This study evaluated the efficiency of enzymatic assisted extraction (EAE) as a green alternative to conventional extraction for extracting phenolic compounds from apples[1]. Within the apple cultivation, there is a large annual waste stream in the form of surplus fruit. The aim of the present study is to look at the value of the extracted bio active molecules.

Material & Methods: EAE extracts derived from 9 different apple varieties, under the optimal conditions for the enzyme Pectinex, were subjected to spectrophotometric analysis for determination of the phenolic content and antioxidant activity [2]. HPLC-PDA was employed for the identification and quantification of the phenolic compounds.

Results: The phenolic content (varies from 2.50 ± 0.10 to 5.32 ± 0.04 mg GAE/g DM) and antioxidant activity was higher for EAE extracts in correlation to the corresponding extracts prepared without enzyme (blank). Next, EAE extracts contain a higher amount of marker compounds (62.7 ± 2.6 to 193 ± 8 mg/100 g DM) detected with HPLC-PDA when compared to the blanks (46.2 ± 1.4 to 152 ± 13 mg/100 g DM).

Conclusion: The results indicate that the enzyme proved to have a positive effect on the extraction efficiency of polyphenols with reducing ability.

References:

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