

Effective Utilization of Pineapple Waste, Evaluation of Ferulic Acid, Micro Nutrients and Antioxidant Property †

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† Presented at International e-Conference on Bioengineering for Health and Environment (ICBHE 2020)

Received: 5.07.2020; Revised: 10.07.2020; Accepted: 12.07.2020; Published: 15.07.2020

Abstract: India is the second-largest producer of fruit and vegetable producers. Usually, after fruit intake, fruit peel is left as waste. The main bioactive components of pineapple are phenolic compounds, β -carotene, ascorbic acid, and flavonoids. Ferulic acid is a phenolic acid widely used in the nutritional and cosmetic fields. In this study pineapple peel was dried, powdered and vitamin content (A, B, B1, B2, B6, B12 & C), calcium, potassium, phosphorus, iron, manganese, zinc and food fiber were analyzed. Moreover, in the present study, traditional and non-conventional processes such as Soxhlet extraction, supreme fluid extraction, and normal solvent extraction was used for the extraction of ferulic acid, which is a precursor for vanillin synthesis. The quantification of ferulic acid was done by High performance liquid chromatographic (HPLC) method. After the above-mentioned extraction process overall phenolic and antioxidant activity were also evaluated and compared. The highest concentrations of ferulic acid (0.7696g/100 g), phenolic compound (2.365mg / GAE), antioxidant activity (45 percent), and yield (90.5 %) were obtained for Soxhlet extraction using methanol.

Keywords: Bioactive compounds; Secondary metabolite; Ferulic acid; HPLC high performance liquid chromatography.

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Funding

This research received no external funding.

Acknowledgments

This research has no acknowledgment.

Conflicts of Interest

The authors declare no conflict of interest.