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Simposio:

ALIMENTACIÓN: NUEVOS PROCESOS ALIMENTARIOS Y CALIDAD

Título:

Autohydrolysis extraction of bioactive compounds from pineapple waste

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Palabras Clave:

Polyphenols; glucose; fructose; DPPH; ABTS

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Abstract: The aim of this research was to evaluate the influence of temperature, time and mass/volume ratio on the release of sugars and polyphenols using an autohydrolysis procedure from pineapple waste and determine its antioxidant activity. A Box-Bhenken design was used with three factors (time, temperature and mass/volume ratio) at three levels. All treatments were performed in triplicate. For autohydrolysis treatments, an oil bath was used [1]. After extraction process, liquid phases or hydrolysates were analyzed for glucose and fructose concentration by high performance liquid chromatography (HPLC) [2]. The Folin-Ciocalteu assay was used to measure total polyphenols of hydrolysates [3] and HPLC to identify these molecules [4]. Free radical scavenging activity (DPPH assay) and radical cation decolorization assay (ABTS) were assayed [5].

Figure 1, shows the antioxidant activity obtained from experimental matrix Box-Bhenken design from autohydrolysis treatments of pineapple waste. It was observed most treatments have higher activity than control, this is due to the abundance of bioactive compounds present in the hydrolysates.

Conclusion: Autohydrolysis process is a good alternative for an effective extraction (using water as only reaction medium) of value-added compounds that can be used for alcoholic drinks enriched with natural antioxidants. In addition, this technology is an environmentally friendly extraction alternative in compared with traditional chemical process.

References:

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