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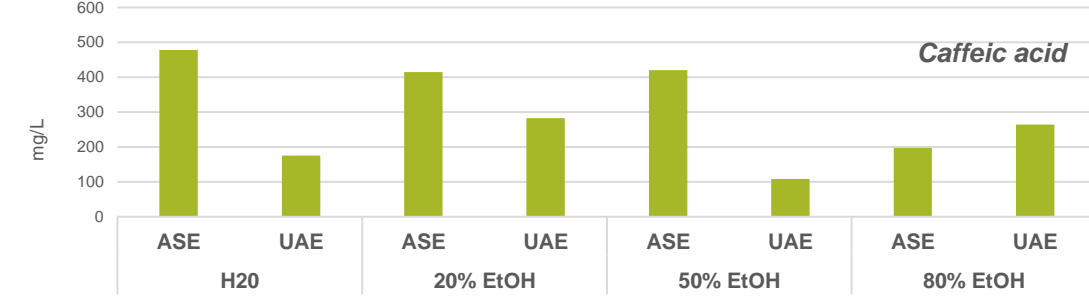
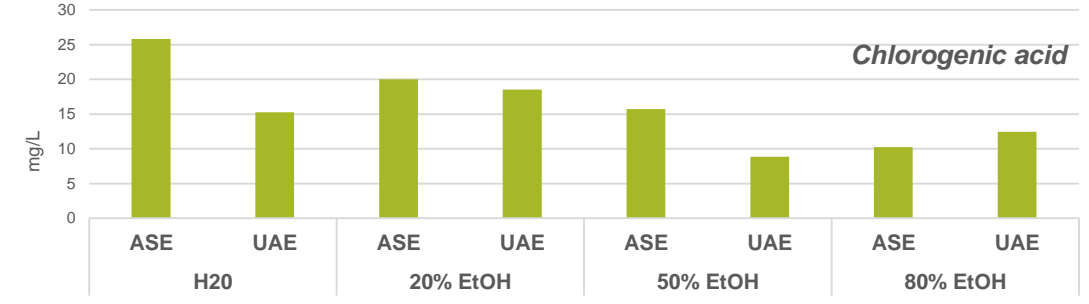
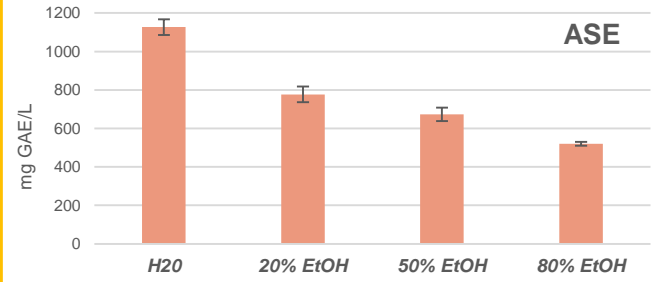
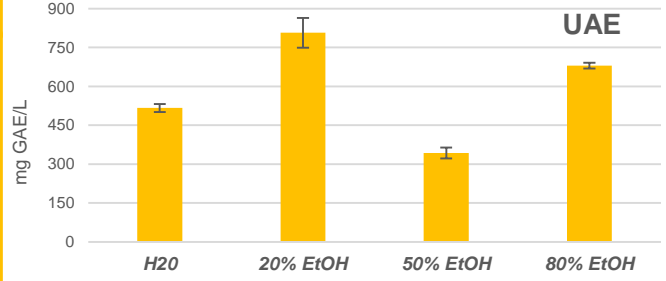
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## Introduction & Methodology

Coffee by-products such as pulp, husks and coffee grounds are rich in bioactive compounds, including phenolic acids. The efficiency of extraction of phenolic acids from these by-products can be significantly influenced by the extraction method and the choice of solvent. Current research focuses on green extraction principles.

The aim of this study was to investigate the effects of ultrasound-assisted extraction (UAE) and accelerated solvent extraction (ASE) as well as different water and ethanol solvent ratios on the total phenolic content and the dominant phenolic acids, caffeic acid and chlorogenic acid, in coffee husks left after roasting.

Total phenols (TP) were determined spectrophotometrically, while chlorogenic and caffeic acids were detected by high performance liquid chromatography (HPLC). The optimization of these parameters aimed to maximize the recovery of phenolic acids, improve the use of coffee by-products and promote sustainability in the coffee industry.



## Results and Conclusion

The results showed a significant TP content in all samples (343.3-1126.7 mg GAE/L), with caffeic acid being more dominant than chlorogenic acid (11- to 26-fold). The differences in the results were significantly influenced by the solvent used and the extraction method. In ASE extracts, TP decreased with decreasing water content in the solvent mixture, a trend that was not observed in UAE extracts. The influence of the solvent was evident in the levels of caffeic and chlorogenic acid, with ASE extracts showing higher levels than UAE extracts. This study provides valuable insights for the development of efficient extraction processes to produce high-quality extracts that can potentially be used as natural additives in the food industry.

