XXII Encontro Luso-Galego

Química

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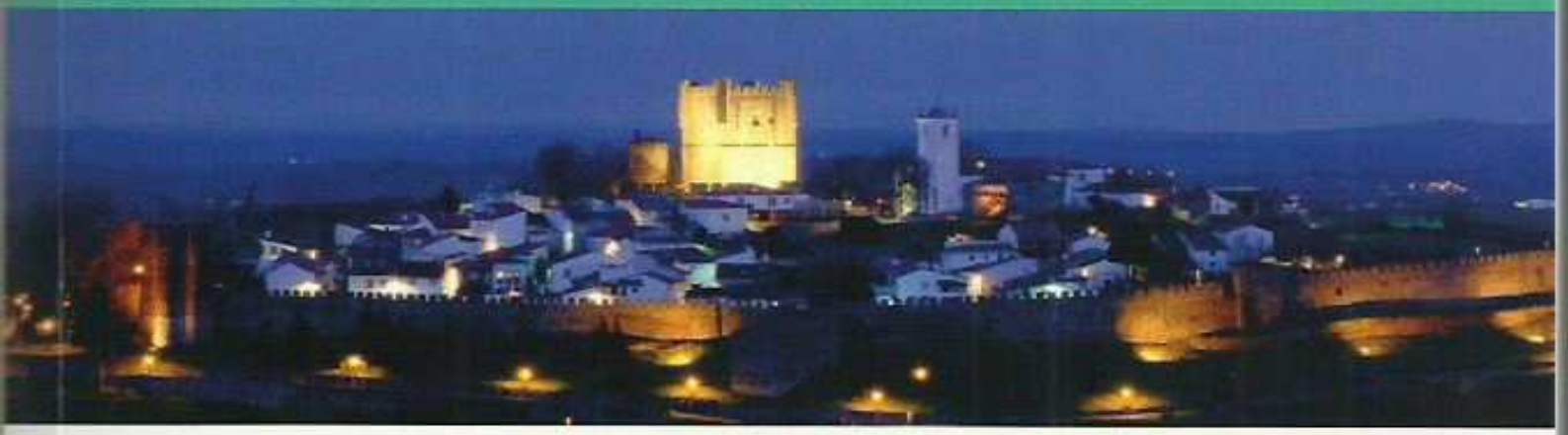

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Study of extraction conditions for phenolic compounds from Strawberry fruits

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Strawberries are an important source of phytochemicals, namely vitamins and phenolic compounds such as anthocyanins and tannins with antioxidant properties [1]. The yield and phenolic content of natural extracts are dependent on the conditions used for extraction [2].

In the present work three different types of extracting solutions (methanol, ethanol:water and acetone:water), two times of extraction (15 and 60 min) and three ratios of solid/solvent (5/25, 5/50 and 5/100 g/mL) were tested in order to evaluate the efficiency of the extraction of phenolic compounds. Phenolic compounds were determined by Folin-Ciocalteu method [3]. Each assay was performed in triplicate.

Regarding the extraction solution, it was possible to observe a slight tendency towards a higher efficiency of acetone:water (AcO:H2O, 60:40), but the differences might not be statistically significant. A longer time of contact, 60 min as opposed to 15 min, did not show advantages in the yield of extraction. Considering the factors under study, the results obtained showed that volume of extraction solution was the parameter that most influenced the values obtained. Using a higher volume lead to an increase in the amount of phenolic compounds extracted, in a more pronounced way for 15 min of extraction. For a volume of 25 mL the amount of phenolic compounds quantified ranged from 2.13-2.41 mg GAE/g, and increased 30-68% when it was used 50 mL of solution. Using 100 mL of solution, it was extracted twice as double of phenolic compounds. In case of 60 min, the amount of phenolic compounds quantified in samples obtained with 25 mL of solution ranged from 2.32-2.97 mg GAE/g, and increased for 2.43-4.27 mg GAE/g and 3.98-4.68 mg GAE/g when was used 50 and 100 mL, respectively.

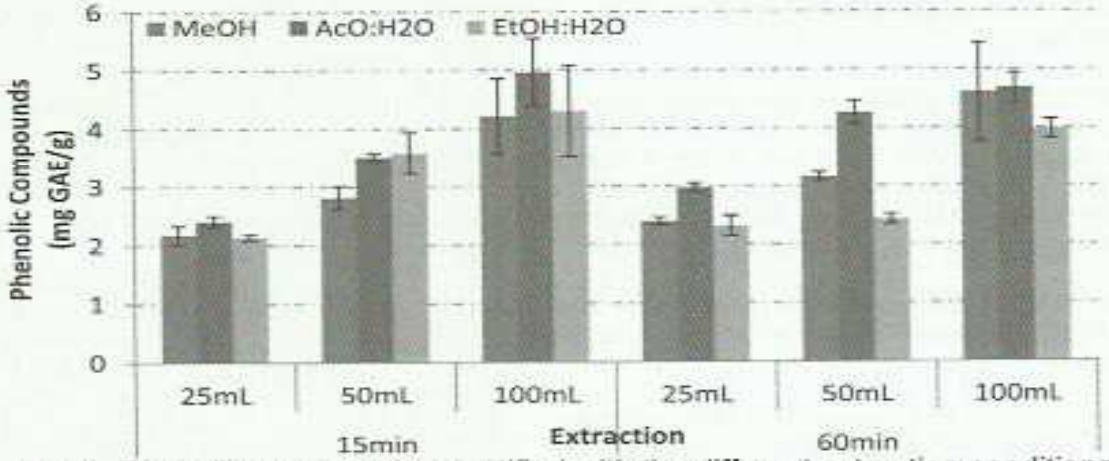

Fig. 1. Phenolic compounds quantified with the different extraction conditions.

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References
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