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P.013. Chromatographic analysis of fatty acids and sugars in traditional pastry from Trás-os-Montes

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The Trás-os-Montes region of Portugal is rich for its tasty and varied gastronomy, namely pastry and deserts. Among them, the “económicos” (economicals), are small cakes made from wheat flower, olive oil, eggs, margarine, sugar and firewater. These famous cakes have never been adequately studied before, and our research group is about to start investigating this traditional food from this region of Portugal and incorporating bioactive and natural additives that will reduce the necessity of chemical ones, valorizing these foodstuffs. The first tentative approach was characterizing these “economicals” in terms of nutritional value and their profile in sugars and fatty acids immediately after manufacturing, at the end of the validity date of 2 days, and 3 days after expiring. The nutritional value was determined following AOAC procedures [1]. Soluble sugars were analyzed by High Performance Liquid Chromatography (HPLC) coupled to a Refraction Index (RI) detector. The fatty acids were analyzed by Gas Chromatography through a Flame Ionization Detector (FID) [2]. In terms of nutritional value, no statistically relevant differences were registered for the dates analyzed. The only detected sugar was sucrose. As for the fatty acids profile, slight variations were detected, but with no statistical importance. The main fatty acids found were linoleic and palmitic acids. These results prove that the nutritional value of the “economicals” is not lost within the validity date, postulating that it could be extended without any kind of loss. Future studies will also be conducted in order to incorporate natural preservatives to increase shelf-life and to maintain the profiles and quality of nutrients along the storage period.

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