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FAST AND GREEN METHOD FOR THE ANALYSIS OF SERRA DA ESTRELA CHEESE

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Serra da Estrela (SE) cheese is a regional product making part of the gastronomic and sociocultural heritage of Portugal. It has several aspects that make it unique, namely the manufacturing by the coagulation of raw sheep milk using the thistle flower of *Cynara cardunculus* L., obtaining a final buttery texture with an exclusive typical flavour. The aroma compounds of Serra da Estrela cheese result partially from the action of indigenous microorganisms and enzymes on lactose, lipids and proteins.

Although SE cheese production is very ancient, there are few studies concerning its nutritional composition, which assumes importance because nowadays consumers demonstrate interest in understanding the global composition of cheese, since it's a product highly appreciated. In the last decades the use of near infrared spectroscopy (FT-NIR) has become comparable with those of the classical methods, with advantages such as minimum sample preparation, fast, green (without using toxic reagents) and multiparametric.

To perform the present study a total of 26 SE cheeses were evaluated, originating from six representative producers, being analysed with a FT-NIR Master 500 standalone spectrometer with a Spectral range of 800–2500 nm and compared with reference analysis.

Cheese samples were evaluated in terms of salt, moisture, protein and fat content. In all the cheeses studied the moisture varied between 42% and 53%, the fat content between 19.6 and 33.3%, the protein content between 18.6 and 26.7% and the salt between 0.7 and 2.2%. The results showed a significant agreement between the values of the replicas obtained for the studied parameters.

Keywords: Serra da Estrela cheese, FT-NIR spectrometry, moisture, protein, fat

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