

**XX ENCONTRO
LUSO-GALEGO
DE QUÍMICA**

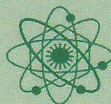
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Serra da Estrela Cheese: evaluation of the thistle ecotype on the physical, chemical and sensorial properties

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Serra da Estrela cheese is the most famous variety of farm cheese manufactured in Portugal. Its manufacture is artisanal, from raw ewe's milk of a native breed (Bordaleira da Serra da Estrela), which is coagulated using an aqueous extract of the wild thistle (*Cynara cardunculus*), without deliberate addition of any starter culture [1-2].

The study of microstructure in specialty cheeses is relevant to sensory features and to fundamental explanation of the changes observed throughout cheese ripening [3]. The objective of this study was to evaluate the physical, chemical and sensorial characteristics of Serra da Estrela cheese produced with different thistle ecotypes.

In this study 29 samples of Serra da Estrela cheese produced with 6 different thistle ecotypes in various dairies in the area demarcated for the production of Serra da Estrela cheese were analysed. The chemical properties assessed were moisture content, pH, chloride, ash and proteins; the physical properties evaluated were colour and texture; and finally a sensory evaluation was undertaken.

The results obtained showed values for moisture between 34.9% and 49.8%, for ashes varying from 3.4% to 5.5%, and for proteins varying from 21.9% to 13.0%. The chlorides ranged between 1.1% and 3.0% and pH between 4.8 and 5.7.

It was further observed that for longer ripening, and therefore lower humidity, the samples exhibited higher firmness and lower stickiness and adhesiveness. The values of hardness of the skin and flesh varied in the ranges 1.56-9.40 N and 0.4-3.4 N, respectively. The stickiness was quite high (-26.29 to -2.21 N.sec), which reflects the creamy character of these soft paste cheeses.

The colour coordinates were evaluated on the skin and the values obtained were 53.57 to 64.34 for L*, -4.53 to 1.29 for a* and 15.56 to 29.03 for b*, showing a clear yellowish colour.

The results of the sensory analysis did not show a noticeable variability between the different ecotypes, and it was further observed that, in general, the instrumental analyses eventually confirm the perception of panellists.

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