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**ABSTRACT BOOK**



## Effect of Different Thistle Flowers as Milk-Clotting in Serra De Estrela Cheese

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### Abstract

Thistle flower (*Cynaracardunculus*) aqueous extracts, as rich source of milk-clotting peptidases, have been widely used for cheeses marketed under the Registry of the Protected Designation of Origin, as it is the case of Serra da Estrela cheese, manufactured from raw ewes' milk and without addition of any commercial starter culture.

This work was aimed at studying the influence of six different ecotypes of thistle flowers in cheese properties during the ripening, and at final products. The clotting time, weight and colour of cheeses, as well as texture properties and sensorial characteristics were evaluated.

The chemical composition of sheep milk was determined for all cheese batches, and it not change among them. The clotting time varied from 66 to 21 minutes, the loss of weight decrease slightly with the similar tendency but with quite different values. Generally, there was a little influence of thistle flower ecotype on L and b\* colour parameters, during the ripening process and in final product, but there was a significant influence on a\* parameter.

The textural analysis results of cheeses reveal significant differences between them, with the follow minimums and maximums, respectively: crust firmness 2.43 and 5.56 N; inner firmness 0.82 and 1.82 N; stickiness -0.5 and -1.60 N; adhesiveness -3.05 and -11.33 Nsec.

Serra da Estrela cheese produced with different extracts of thistle flower presented different sensorial properties, meaning that with a strong knowledge of the properties assign by these different flower extracts it is possible to produce a specific cheese attending to different consumer targets.

**Keywords:** Serra de Estrela cheese, thistle flower, colour, texture analysis, sensorial analysis.