



## FATTY ACID PROFILE IN SERRA DA ESTRELA CHEESE: AN OVERVIEW

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**Introduction:** Serra da Estrela cheese (SEC) is a Portuguese traditional cheese that bears a Protected Designation of Origin label, produced in a limited geographical region, using Raw ewe milk from “Churra Mondegueira” and “Bordaleira” autochthonous breeds; Wild thistle flower (*Cynara cardunculus* L.) and Salt.

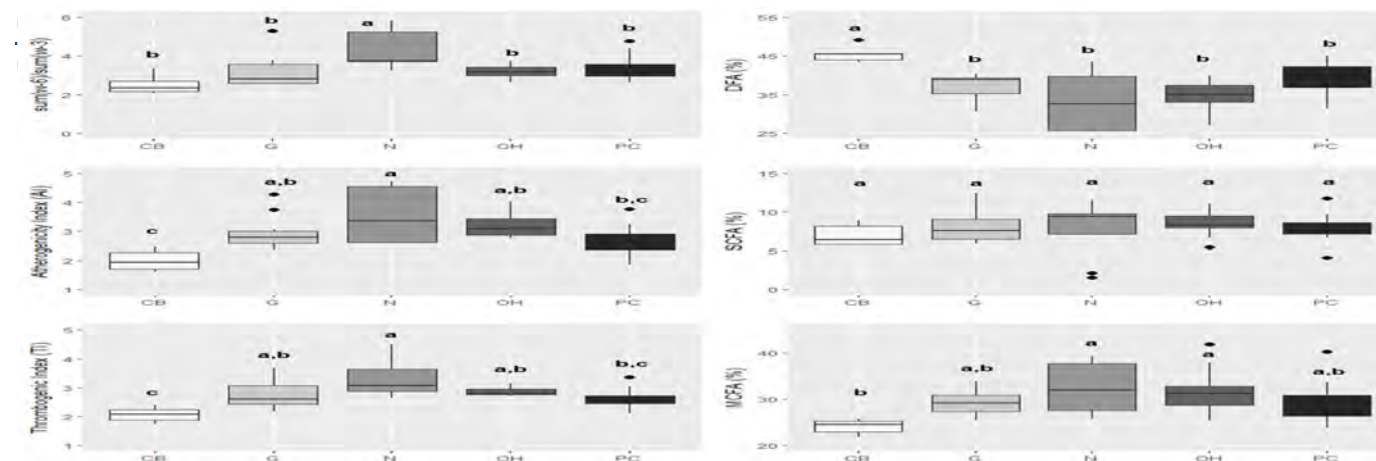
**Materials and Methods:** 24 SEC produced between November 2017 and March 2018, with approximately 45 days of maturation, were collected at selected certified producers and analysed by gas-chromatography (GC)

The nutritional quality of the lipid fraction of SEC was determined by examining the fatty acid profile and taking into consideration three indexes: atherogenicity (IA), thrombogenicity (IT) and  $\Sigma(w-6)/\Sigma(w-3)$  ratio. The atherogenic index (AI) and thrombogenic index (TI), linking fatty acid profile to cardiovascular risk, were calculated according to (Ulbricht and Southgate, 1991):

$$AI = \frac{4 \times C_{14:0} + C_{16:0} + C_{18:0}}{\Sigma MUFA + \Sigma PUFA} \quad AI: 2.92 \pm 0.73$$

$$TI = \frac{C_{14:0} + C_{16:0} + C_{18:0}}{0.5 \times \Sigma MUFA + 0.5 \times (PUFA-n6) + 3 \times (PUFA-n3) + \frac{PUFA-n3}{PUFA-n6}} \quad TI: 2.73 \pm 0.52$$

Finally, the  $\Sigma(w-6)/\Sigma(w-3)$  ratio, (Simopoulos, 2002),  $3.33 \pm 0.86$



**Conclusions:** The results indicated that the FA profiles of SEC were desirable from a human health standpoint. The fatty acid profile of cheese can be used to differentiate the producer which made the cheese and to some extent the different locations inside geographical origin that may give some insights into animal feed and production management.

