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Modelling the relationship between the Évora, Serpa and Nisa cheese casein fractions and their degradation products using linear regression analysis

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Some Portuguese and Spanish ewe's cheese are made with the aqueous extracts of *Cynara cardunculus* L. dried flowers. The renewed interest in vegetal coagulant prompted to the investigation of its proteolytic effect. Different *Cynara cardunculus* L. populations (Cynara 1, Cynara 2 and Cynara 3) were used in the cheesemaking of PDO Évora, Serpa and Nisa cheeses. Cheese samples were analysed by urea-PAGE to identify the casein fractions, enabling the evaluation of the extent of proteolysis. The casein fractions obtained were separated in four areas: β -caseins, α_s -caseins and their degradation products, γ -caseins and pre- α_s -caseins (CN), respectively. The aim of this work was to identify the relation of the caseins fractions and their degradation products through a simple linear regression method (LRM), regarding the effect of *Cynara cardunculus* L. coagulant, and the matrix of three PDO cheeses, during ripening process. Results showed significant correlations between the predictors variables (α_s - and β -CN) and the responses variables (pre- α_s -CN and γ -CN) in the three cheeses. Coefficients of determination (R^2) between α_s -CN and pre- α_s -CN in all cheeses was superior to 0.80, while the R^2 between β -CN and γ -CN was less than 0.80. These results suggest that α_s -CN can be a good predictor of pre- α_s -CN, providing viable information regarding the proteolysis process in DOP Évora, Serpa and Nisa cheeses.

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