Discrimination of Halloumi cheese samples regarding species’ origin.

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**Abstract**

Halloumi cheese belongs to the category of white brined cheese, and it is originated from Cyprus.The traditional cheese of Cyprus has become known throughout Europe and internationally with a significant economic interest, without obtaining any PDO or PGI status yet. To enhance the protection of authentic and high-quality Halloumi cheese is crucial.

Therefore, the development of a method, capable of determining and identifying the adulteration of Halloumi cheese due to mislabeling regarding species’ origin of milk was the target of our research, and the first publication was in 2020 (Tarapoulouzi et al., 2020) with a database of various Halloumi cheese and milk samples.

Today, we present a model produced based on Halloumi cheese samples only. Spectra were taken using Fourier Transform Infrared (FTIR) Spectroscopy. Prior to the spectroscopic measurements, all the samples were pre-treated with lyophilization (freeze-drying). The spectra were analyzed with SIMCA by applying Hierarchical Cluster Analysis (HCA), as well as Orthogonal Projection to Latent Structures - Discriminant Analysis (OPLS*-*DA).The final model has been validated to ensure that the utilized chemometric methods do not predict randomly.

Future studies include the establishment of a novel approach with sensor application for more rapid control, of course based on the method proposed here.

**Keywords:** Halloumi cheese, spectroscopy, FTIR, chemometrics, OPLS-DA, species’ origin.

REFERENCES

Tarapoulouzi, M., Kokkinofta, R., Theocharis, C. R., 2020. Chemometric analysis combined with FTIR spectroscopy of milk and Halloumi cheese samples according to species’ origin. Food science & nutrition, 8(7), 3262-3273.