البحث رقم (١)

الملخص الانجليزي

Potential of Multispectral Imager to Characterize Anisotropic French PDO Cheeses: A Feasibility Study

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Abstract: The present study was aimed to investigate the potential of multispectral images coupled with chemometrictools (PLSDA and PLS-R) for: (1) discriminating different French blue veined cheeses belonging tofour brand products *(Fourmed'Ambert, Fourme de Montbrison, Bleu d'Auvergne, and Bleu des Causses)*and (2) predicting some of physicochemical (pH, ash, dry matter, total nitrogen, water soluble nitrogen,Ca^{2+}, Na^{+}, Cl^{-}, and P) and rheological properties (softening and dropping points). The results obtainedshowed that multispectral imaging system applied to anisotropic blue cheeses succeeded to: (1) discriminatecheeses based on their blue veins features in spite of the visual similarity of their structureand appearance with percentage of correct classification varying between 30 and 100%; and (2) predictselected parameters (i.e., Ca^{2+}, Cl^{-}, WSN, dropping, and softening points) since R^2cv $\geq$ 0.62 andRPD $\geq$ 1.62 were obtained. Moreover, the predictive results suggested that the image texture of cheesewas strongly related to its physicochemical composition and rheological characteristics (softening anddropping points).

Keywords: Blue cheeses, Image texture, Discrimination, Prediction, Physicochemical properties,Rheological behaviour.