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Hyperspectral Imaging with Multivariate Analysis for Technological Parameters Prediction and Classification of Muscle Foods: A Review

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Abstract: Muscle foods are very important for a well-balanced daily diet. Due to their perishability and vulnerability, there is a need for quality and safety evaluation of such foods. Hyperspectral imaging (HSI) coupled with multivariate analysis is becoming increasingly popular for the non-destructive, non-invasive, and rapid determination of important quality attributes and the classification of muscle foods. This paper reviews recent advances of application of HSI for predicting some significant muscle foods parameters, including color, tenderness, firmness, springiness, water-holding capacity, drip loss and pH. In addition, algorithms for the rapid classification of muscle foods are also reported and discussed. It will be shown that this technology has great potential to replace traditional analytical methods for predicting various quality parameters and classifying muscle foods.

Keywords: muscle food, HSI, technological parameter, chemometrics, classification

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