

Title Use of visible spectroscopy for quality classification of intact pork meat
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Abstract

Many quality characteristics of pork meat are associated with visible characteristics such as color. To develop an objective and nondestructive system to assess the quality of fresh pork meat, the potential of using visible spectroscopy to classify different quality classes of pork meat and to predict CIE L^* , a^* and b^* values was investigated. Four different qualities of meat were considered namely RFN (red, firm and non-exudative), RSE (red, soft and exudative), PFN (pale, firm and non-exudative) and PSE (pale, soft and exudative). Reflectance spectra were acquired with a Minolta CM 3500d spectrophotometer in the range from 400 to 700 nm. The data analysis showed that it was possible to separate pale meat from red meat. In addition, PFN meat was distinguishable from PSE meat. However, the visible spectral information is not sufficient to separate all the four quality groups. The classification accuracy of using the reflectance spectra was better than using the L^* , a^* and b^* values. The partial least squares regression was used to predict the L^* , a^* and b^* values from the visible reflectance spectra. In general, the prediction for L^* was better than for the a^* and b^* values.