

Feasibility study on evaluation of internal quality of red pitaya using near infrared spectroscopy

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Abstract

A feasibility study was carried out to evaluate internal quality of red pitaya using interreflectance-type near infrared (NIR) spectroscopy. NIR spectra were obtained in the range of 800-1000 nm at 4 measuring points on each fruit. The original spectra and the second derivative spectra of each point were analyzed by a partial least square regression (PLSR) analysis. The correlation coefficients (r) and standard error of prediction (SEP) values for the prediction model, which were obtained using PLSR of the hue color value, chroma value, moisture content of the skin and pulp, acidity, and soluble solids content were 0.40 (0.22), 0.42 (7.3), 0.41 (1.2), 0.39 (1.66), 0.62 (0.025), and 0.69 (0.81), respectively. These results showed that the internal quality of red pitaya can be evaluated using NIR spectroscopy.