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NIR Measurement of Specific Gravity of Potato

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Near infrared (NIR) spectroscopy was investigated as a method for nondestructive measurement of specific gravity of potato. A total of 250 potatoes of three cultivars, Irish-Cobbler, May-Queen and Kita-akari, were used as experiment samples. The NIR spectra (700-1100nm) of potato samples were acquired by the interactance method and partial least square (PLS) regression analysis was used to develop a predictive model for specific gravity. As a result, the model gave relatively good predictions of the specific gravity, with a correlation coefficient of 0.94 and standard error of prediction of 0.0044g/cm^3. The results show the potential of the NIR technique as a means for nondestructive measurement of specific gravity of potato with reasonable accuracy.

Keywords: near infrared (NIR) spectroscopy, specific gravity, potato, partial least square regression (PLS)

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