

Artit Phaungsombut 2006: Determination of Internal Quality of Dragon Fruit Using Near Infrared Spectroscopy. Master of Engineering (Agricultural Engineering), Major Field: Agricultural Engineering, Department of Agricultural Engineering. Thesis Advisor: Mr.Siwalak Pathaveerat, Ph.D. 142 pages. ISBN 974-16-1792-5

The objective of this research was the study of possibility for determination of the total soluble solids content and titratable acidity in dragon fruit by near infrared spectroscopy (NIR). Dragon fruit number 100 cultivar was used in this research. Dragon fruit was scanned by near infrared spectrophotometer in wavelength range of 1100-2500 nm. All samples were determined for the total soluble solids contents and acidity. The Multiple Linear Regression (MLR) and Partial Least Square Regression (PLSR) were used for making calibration equations which focused on selection of the optimum wavelength and the accuracy was compared.

The results showed that NIR technique could be use to determine the acidity and the total soluble solid content in dragon fruit. The accuracy of the prediction could be improved by 1) selection of the optimum wavelength region 2) averaging both the chemical values and the absorbance spectra and deriving the calibration equation using PLSR 3) dividing the whole spectra with the absorbance related to the peel and using PLSR for creating the calibration equation.

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