

Potential of near infrared spectroscopy for non-destructive estimation of soluble solids in growing melons

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Non-destructive determination of soluble solids(Brix) in harvested fruits using near infrared(hereafter, NIR) spectroscopy has been reported by many researchers. We have just reported on non-destructive estimation of Brix in harvested melons using a NIRSystems Model 6500 spectrophotometer(Ito *et al.*, 2000). There is a melon cultivar that is difficult to judge the harvest time from the external appearance. If we can determine Brix in growing fruits non-destructively in the field, immature fruits will not be harvested. A portable NIR spectrophotometer for field use has been just developed by Kubota Corporation. The spectral data of growing melons were measured by the portable spectrophotometer. A commercial program was used for multiple linear regression analysis. Brix in growing melons could be estimated by a multiple regression equation calibrated with harvested melons. Absorbances of 906 and 874 nm were included as the independent variables in the multiple regression equation, and these wavelengths are key wavelengths for non-destructive Brix determination.