

Determining the Sugar Content of Immature Pear Fruits by Near-infrared Spectrophotometer

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Summary

Measurement of the chemical compositions for pear fruits by wet chemical methods can be used for evaluating the pear quality, but they are time-consuming, and polluting. A near-infrared reflectance spectrophotometer system, including an optical fiber probe, a spectrophotometer ranging from 400 nm to 2498 nm, and a computer were developed to calibrate sugar content in immature pear fruits, which can be employed to fruit's production, management and timing of harvest. The PLSR model based on the six principal components accounted for 86% of variation in sugar content data with first derivative pretreatment and root mean square error of cross-calibration (RMSECV) was 0.29 °Brix.

Key words: Near-infrared, fruit, sugar content.

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