Computer Based Data Acquisition and Control in Agriculture

Determination of Moisture Content in Mangosteen Pericarp Using Near Infrared (NIR) Spectroscopy

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ABSTRACT

Pericarp hardening is the main problem found in mangosteen storage that is assumed related with moisture content. This study aimed to learn the ability of NIR spectroscopy in determining moisture content in mangosteen pericarp and to develop calibration and validation model with Partial Least Squares (PLS) method. Spectra of fruits was obtained from fruits at 27^oC, 13^oC, 8^oC storage temperatures with different shelf-life. Result of analysis indicated that moisture content in pericarp could be determined at 27^oC and 13^oC storage temperatures. At 27^oC, moisture content could be determined well by using NIR reflectance spectra at 1000—1281, 1515—1848, and 2083—2273 nm with value of r = 90.52 %, R2 = 81.93%, and RPD = 2.1. While at 13oC, moisture content could be determined well enough NIR reflectance spectra at 1111—2252 nm with value of r = 82.18%, R2 = 67.54%, and RPD = 1.5.

Keywords: *moisture content, mangosteen pericarp, NIR*