Research Title: Detection of hardening pericarp severity related to lignin and phenolic compound by NIR spectroscopy
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ABSTRACT

Mangosteen (*Garcinia mangostana* L.) is one of the most favorite fruits for Thai and foreigners. Although mangosteens have a thick pericarp but the pericarp can be hardened easily after impact. This defect makes quality of fruits poor. Mangosteens in the color stage of pink (stage 4) and reddish brown (stage 4) were dropped from the height of 100 cm in this research. The results showed that pericarp of fruits were hardened after impact. The objectives of the research were to study an application of near infrared (NIR) technique for evaluation lignin contents and total phenolic compounds. Prediction using NIR technique at 660-960 nm result showed that the calibration equations processed by partial least square regression (PLSR) method gave low accuracy. For intact fruit, the prediction of lignin contents and total phenolic compounds obtained the correlation coefficient (R) of 0.69 and 0.73 as well as the root mean square error of prediction (RMSEP) of 0.10 and 0.17, respectively.

Keywords : mangosteen, phenolic, lignin, pericarp, impact