【別紙２】

論文名 : Evaluation of Physiological and Microbiological Quality of Green Papaya Shreds（要約）
（千切りグリーンパパイヤの生理学的・微生物学的品質の評価）（要約）

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Physiological and physico-chemical changes in green papaya (*Carica papaya* L. 'Kaek Noul') shreds taken from the outer or inner mesocarp. The rapid rate of loss of flesh firmness in 'Kaek Noul' green papaya shreds from the inner mesocarp could be attributed to the larger and loosely arranged cells of the inner mesocarp compared to the smaller and more compact cells of the outer mesocarp. Moreover, inner mesocarp tissue was more physiologically active than the outer mesocarp tissue, as shown by the higher rates of respiration, ethylene production, and cellulase activity that caused softening of the fruit from the inner mesocarp outward. Our results explain the differential rate of loss of firmness between green papaya fruit shreds from the inner and outer mesocarp tissues, verifying claims that shreds from the outer mesocarp maintained their quality during cold storage with a shelf-life of up to 8 d in terms of FW loss and lower DMC.

Rapid detection of coliform bacteria in shredded green papaya using short wavelength near-infrared spectroscopy. We evaluated the use of SW-NIR spectroscopy to predict microbiological parameters in two different green papaya sample preparation methods. The results of the present study verified that NIR spectroscopy offers an alternative to the current analytical methods of microbial determinations in papaya. The *E. coli* and *S. typhimurium* counts detected in these experiments by NIR spectroscopy were relatively high. NIR spectroscopy represents an exciting opportunity to improve the quantitative microbial analyses of papaya washing solution. The results indicated that while the papaya washing solution had minimal influence on PLS model construction, homogenized shredded papaya had a more significant influence. In particular, vegetable and fruit washing solutions can be readily applied to evaluating spectra with sufficient accuracy for quality control and are applicable for bacterial screening at relatively high concentrations. However, further work is still needed to improve the calibration statistics, thereby developing robust NIR models with increased precision and accuracy. It is proposed that future NIR models could be used to determine the food safety of various freshly cut fruits and vegetables.