

Title            An investigation into the determination of the maturity of pawpaws (*Carica papaya*) from NIR transmission spectra

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#### **Abstract**

The transmission spectra for pawpaws (*Carica papaya*) in various states of maturity ranging from immature green through to skin colour break were recorded over the wavelength range 500-1000 nm using a dual prism spectrometer with charge-coupled detector designed and constructed at the authors' institute. Features observed in the spectra were compared against the visually-assessed maturity of the fruit to investigate spectral changes associated with the ripening process. An apparent spectral signature of maturity was noted with a distinct change in the relationship of wavelength of peak transmissions at 720 nm to 815 nm between the immature green and ripe fruit, respectively. These results will allow the level of maturity of pawpaws to be classified into at least four categories using only these wavelengths with the possibility of using a small portable instrument.