Changes of backscattering parameters during chilling injury in bananas

ABSTRACT

The change in backscattering parameters during the appearance of chilling injury in bananas was investigated. Bananas were stored at a chilling temperature for two days and the degrees of the chilling injuries that appeared were measured before, during and after storage using backscattering imaging and visual assessment. Laser lights at 660 nm and 785 nm wavelengths were shot consecutively onto the samples in a dark room and a camera was used to capture the backscattered lights that appeared on the samples. The captured images were analysed and the changes of intensity against pixel count were plotted into graphs. The plotted graph provides useful information of backscattering parameters such as inflection point (IP), slope after inflection point (SA), and full width at half maximum (FWHM) and saturation radius (RSAT). Results of statistical analysis indicated that there were significant changes of these backscattering parameters as chilling injury developed.

Keyword: Backscattering; Banana; Chilling injury; Fruit quality; Imaging