Design and develop a nondestructive infrared spectroscopy instrument for assessment of mango (mangiferaindica) quality.

Abstract

A portable infrared spectroscopy system has been designed and developed for assessment of quality of mango fruit. This paper describes the design and development of a fruit quality-grading device using reflectance mode optical sensor. The experiment was conducted to obtain the best results from the system and the device was correlated according to the measured output. In the experiment, several samples of mango fruits have been monitored for six days to study the relation how fruit quality increases with time as fruit ripens. Between the unripe mango fruit and the ripest one, a range of 3.5 V to 4.2 V was measured by the developed system. The rate of quality increase was calculated as an average of 6.7 mV per day. These results were used to correlate the final hardware and software development of the device. The results demonstrate that, portable near infrared spectroscopy is feasible for evaluating mango quality non-destructively.

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