

**Title** Internal quality sensor of fruit jagged edge: preliminary study of bitter gourd (*Momordica charantia* Linn)

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### **Abstract**

Recent research has concentrated on developing nondestructive measurement methods for detecting internal quality of fruits. Most of these studies use Near Infrared Reflectance Spectroscopy (NIRS) were conducted on fruits that have a more or less flat edge at which the sensor was positioned., such as apples, orange, peach, tomato, grape, mango, kiwifruit, banana, and melon. The objective of this research was to investigate NIR capability to predict internal quality of fruit with a jagged (uneven) edge. Bitter gourd (*Momordica charantia* Linn) was used in this research, using a portable Near Infrared Reflectance Spectroscopy unit, at the University of the Ryukyus, Japan. The wavelength range of NIRS used in this experiment was 600-1100 nm, utilized for detecting soluble solid content, moisture content, chlorophyll a and chlorophyll b content. The results showed that NIR Spectroscopy has potential application for prediction of internal qualities of fruit with jagged edges.