

Title Optical Properties of Mangosteen Fruits
Author Phanida Pushpariksha, Bundit Jarimopas
Citation Proceedings: Abstract Summary, International Conference on Agricultural, Food and Biological Engineering & Post Harvest/Production Technology, Sofitel Raja Orchid Hotel, Khon Kaen, Thailand, 21-24 January 2007. 204 p.
Keywords Optical properties, Mangosteens, Nondestructive.

Abstract

Optical properties of mangosteen fruits were studied in order to provide information essential to the understanding of the response of mangosteens to visible light excitation. The light reflectance of mangosteens was measured in term of tristimulus values, X, Y, and Z. The different maturity stages and different types of fruit surface of mangosteens were used in this research. The corresponding chromaticity coordinates (which were calculated from tristimulus values), x and z of mangosteens depend on their maturity stage while y depends on the type of fruit surface. When mangosteen became more mature, its x decreased while z increased with respect to time. The y value for rough surface fruit was normally higher than that for gloss surface fruit. The average y was 0.393 for rough surface and 0.375 for gloss surface. Besides, the light reflectance of non-uniform color development mangosteen could be used to identify the internal defects occurring nondestructively. Then, the term of tristimulus ratio was proposed to test the ability of internal defects symptom prediction. Ninety-five non-uniform color development mangosteens were used. The highest percentage of correct prediction was found at the tristimulus ratio $X_1/X_2 > 1.25$ with 64.7%.