Abstract

This study aimed at developing a procedure for evaluating milled rice color grades using instrumental measurements and visual assessment. Milled rice samples were subjected to instrumental measurements in CIEL*a*b* and RGB color spaces and classified into four groups by k-means clustering. Subsequently, four reference grades of milled rice color were identified and designated as slightly yellow, moderately yellow, intensely yellow and excessively yellow based on visual assessment. There was high correlation between the color measurement parameters of the milled rice samples classified by k-means clustering and visual assessment. Finally, a visual evaluation scheme using scanned images of the milled rice samples was developed to identify the color grade based on the minimum Euclidean distance between the sample measurements and designated class means. Results showed that milled rice samples could be classified into visually identifiable color grades by instrumental measurements with reasonable accuracy.