Abstract

Rice grains quality estimation is important in fulfilling customer requirements. Geometric features of grains are used to check the quality of rice grains. Mechanical classification methods are being used largely by local industry to grade different size of food grains on basis of geometric parameters. Image processing techniques can be applied to extract various features of rice grains and classifies the grains based on geometric features. This study proposed a method that processes the captured still digital image of rice grains. The program has been developed using MATLAB technology. The compiler of this technology was used to convert the program into standalone application. Application was embedded with MATLAB compiler runtime that enables the execution of compiled application on computers that do not have this technology installed. In this method seven geometric features of individual rice grain were extracted from digital images and then grains of particular varieties were classified into three different classes. Calibration factor was calculated to make the method independent of camera position. The method was tested on five varieties of rice grains and compared to experimental results by measuring the geometric features of rice grains using digital vernier caliper. The error
rate of measuring different geometric features between proposed method and experimental analysis was found between -1.39% and 1.40%.

References


Index Terms

Computer Science  Image Processing
Keywords

Rice grains, Classification, Feature Extraction, Image Processing