Bulk Paddy Grain Ageing Period Classification using RGB and HSI Color Features

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Abstract

Paddy (rough rice) grain age assessment is one of the requirements in the rice industry as it has significant effects on processing and quality of products. This paper presents a color based approach for the classification of fifteen leading paddy varieties and their ageing periods from their bulk grain sample images. Five different ageing periods are considered, namely, 1, 3, 6, 9 and 12 months. Since color changes are observed with ageing, the features from RGB and HSI color spaces are used in the classification. The performance based feature reduction technique is adopted for feature reduction. The average ageing period classification accuracies of 93.60%, 92.40%, 91.87%, 93.33% and 94.13% are obtained for ageing periods of 1, 3, 6, 9 and 12 months respectively across the varieties using BPNN. The work finds application in automated pricing and grading, decision on suitability for value added products in food industry, developing a machine vision system in agriculture produce market (APMC) etc.

References


Index Terms

Computer Science Pattern Recognition

Keywords

Rice, Age assessment, Husk color, stored food grains, BPNN.