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Development of PHilMech computer vision system (CVS) for quality analysis of rice and corn

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Manual analysis of rice and corn is done by visually inspecting each grain and classifying according to their respective categories. This method is subjective and tedious leading to errors in analysis. Computer vision could be used to analyze quality of rice and corn by developing models that correlate shape and color features with various classification. The PhilMech low-cost computer vision system (CVS) was developed to analyze the quality of rice and corn. It is composed of an ordinary scanner as the image acquisition device and a computer with image-processing software. The performance of the CVS was compared to the traditional manual method being adopted by the National Food Authority (NFA) and the Agricultural Machinery Testing and Evaluation Center (AMTEC). The performance testing and evaluation showed that the accuracy of obtaining the results in classifying rice and corn using the CVS was comparable to the manual method of analysis. But, the processing time to complete the analysis using the CVS technology (6-7 minutes) was 5-8 times faster compared to the manual method (30-60 minutes). The developed CVS will automate the existing practice in determining the milling quality of brown rice, milled rice and yellow corn and minimize the tedious and subjective manual method of evaluation.

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