A simple polarized-based diffused reflectance colour imaging system

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Abstract

A simple polarized-based diffuse reflectance imaging system has been developed. The system is designed for both in vivo and in vitro imaging of agricultural specimen in the visible region. The system uses a commercial web camera and a halogen lamp that makes it relatively simple and less expensive for diagnostic research and teaching. The system has been used to demonstrate the difference between a yellow colour of a diseased cassava leaf and that of a senescence cas-sava leaf qualitatively using diffused reflectance images. Predicting the area of the sample using a method of counting dark pixels is presented. This method avoids complex and more computa-tional power required by edge detection algorithms. The performance of the suggested method can be seen for 50 samples of leaves. This suggest that polarized diffused reflectance image lends itself to extraction of physical information.