

**IMAGE RECOGNITION SYSTEM FOR
PADDY LEAF DISEASES IN SRI LANKA**

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by

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Abstract

Rice is the single most important crop occupying 34 % of the total cultivated area in Sri Lanka. But rice is attacked by a number of diseases. Although some diseases are of minor importance, others cause serious economic damage. The classification and recognition of paddy diseases is one of the major technical and economical important in the agricultural industry. Consideration of the spread of specific color range of each infected leaves, shapes, textures are very important to automate this activities. The goal of this research is to develop an image recognition system that can recognize paddy diseases. Three major diseases commonly found in Sri Lanka, Rice blast (*Magnaporthe grisea*), Rice sheath blight (*Rhizoctonia solani*) and Brown spot (*Cochiobolus miyabeanus*) were selected for this study.

Image processing starts with the digitized a color image of paddy disease leaf. Then color features of color image of disease spot on leaf were extracted and many mathematical operations was introduced to segment these images according to range of a specific color that early defined. That color ratio value is used to identify the rice disease. This approach yields excellent results by using many images of infected leaves. Use of powerful RGB camera would allow higher precision of the image color and segmentation. The proposed system is based on the JavaCV library and image processing methods.