Identifying rice plant diseases using Image Processing Techniques

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Abstract

Rice plantation plays a great role in Sri Lanka's economy. Rice has been the main food of Sri Lanka for ages and it's our national pride. Therefore, it is an opportune to explore the possibilities of exploiting Information Technology based methods and practices to develop paddy cultivation in the country. Currently the farmers are accustomed to use traditional methods and they seek the advice of regional agricultural officers on unknown diseases. Main objective of this study and research is to develop a web based system to diagnose paddy diseases through their visual symptoms so that appropriate disease control methods can be adapted in order to reap a good harvest in rice plantation. This research paper describes the process of identifying rice plant diseases through properly captured images of the infected area of a plant. The system applies image processing techniques to classify diseased rice plant leaves and identify the disease. The methodology includes image acquisition, image pre-processing, edge detection, feature extraction, and classification. The study reveals that the paddy diseases can be recognized with an accuracy of over 90%. The system allows user to interact with it through a user friendly web interface and upload each of infected plant's images as input to the system. The system identifies the name of the disease and suggests the solution to control it. This proposed solution is more precise and nimble to identify diseases through their visual symptoms.