

MONITORING RICE BROWN SPOT IN AGRICULTURAL CROPS USING REMOTE SENSING

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KEY WORDS: Remote Sensing, Object-based Image Analysis, classification, rice, brown spot, reflectance, accuracy assessment

Abstract: It is well known that rice is an important world crop, particularly in Asia. The population of Asia accounts for approximately 60% of the global population, about 92% of the world's rice production, and 90% of global rice consumption. With such a large population and high levels of rice consumption, an effective rice crop monitoring tool is needed. Currently monitoring on rice disease is becoming important through Remote Sensing technology especially in Thailand. Due to the structure and composition of various substances in rice area, reflection characteristics of the spectrum presented in various forms (mixture). Large mistaken on pixel-based classification and interpretation has been still occurred. Then, specific classification approach, object based image analysis (OBIA), is going to be developed in order to achieve higher accuracy with confidential level. By experiment, the result of pixel based classification reported in accuracy of 73.3% and 86.67% for unsupervised and supervised classification. However, when OBIA classification was applied, it was found that the percentage of accuracy increased to 93.33% for unsupervised classification. There were based on texture, shape, and context consideration. This is very useful to identify disease of crops. This study demonstrates that the object-based classifier is a significantly better approach than the classical per-pixel classifiers. However, the spatial resolution of this study was in middle level, Landsat. Regarding this coarse resolution, it caused some error after OBIA was applied. This could be a major concern when the middle level of resolution is manipulated. By result, very high spatial resolution is suggested to be implemented through OBIA concept.