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**Nutrient Deficiency Detection in Maize (*Zea mays*
L.) leaves using Image Processing**

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SUPERVISOR APPROVAL

NUTRIENT DEFICIENCY DETECTION IN MAIZE (ZEA MAYS L.) LEAVES USING IMAGE PROCESSING

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This thesis was prepared under the supervision of the project supervisor, Madam Nurbaity Binti Sabri. It was submitted to the Faculty of Computer and Mathematical Sciences and was accepted in partial fulfillment of the requirements for the degree of Bachelor of Computer Science (Hons).

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STUDENT DECLARATION

I am certifying that this thesis and the project to which it refers is the product of my own work and that any idea or quotation from the work of other people, published or otherwise are fully acknowledge in accordance with the standard referring practices of the discipline.

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ABSTRACT

Maize is one of the world's leading food supplies. When maize becomes more important, the crop's production must continue to reproduce. Maize is an active feeder, so as the plant grows, the soils need to be adequately supplied with nutrients. Plants must be in deep green color to indicate the adequate nutrient. This project is developed to solve the main problem of plant tissue laboratory testing to detect nutrient deficiencies that consume a lot of time. The purpose of this study was to help agriculturist, farmers and researchers to identify the type of maize nutrient deficiency. This Maize Leaves Nutrient Deficiency Detection uses image processing techniques to determine the type of nutrient deficiency that occurs on the plant leaf. In order to increase the accuracy model, random forest technique was used as a classifier and some combination of the texture of feature extraction. This application was checked for accuracy after analysing the percentage of the overall application. The result shows that random forest can produce accurate results with 78.35 percent of accuracy.

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