

Basal Stem Rot (BSR) detection using textural analysis of Unmanned Aerial Vehicle (UAV) image

ABSTRACT

Basal Stem Rot (BSR) disease is one of the most destructive diseases affecting oil palm plantation in Malaysia. The first critical step for a successful control of BSR is its detection and diagnosis. This study presents a new approach of high spatial resolution aerial Red, Green, Blue (RGB) image for BSR detection using a low-altitude remote sensing Unmanned Aerial Vehicle (UAV) platform. The co-occurrence measures for textural analysis were performed to the RGB band to determine the best parameter for BSR detection. Descriptive statistical as well as One way ANOVA were executed to indicate which bands are giving significant level ($p < 0.05$). Apparently, the test gave three significant properties which are Correlation taken from R, G and B band. The developed conditional statement of detection was tested for distinguishing between healthy and BSR-infected trees. Total accuracy acquired for healthy trees was 86.21% whereas for BSR-infected trees was 75.00%. Hence, average accuracy assessment was 80.61%.

Keyword: Image; Texture; Disease; Canopy