Abstract

Leaf area plays an important role in plant growth analysis and photosynthesis. Traditionally leaf area is measured by regression equitation, grid count method, gravimetric method and planimeter. In this paper a simple, fast and accurate algorithm for leaf area measurement using image processing is implemented. Image is acquired using digital camera and stored in JPEG format. RGB image is color transformed into CIELAB color space. Color transformed image is segmented using threshold technique. Threshold is calculated using OTSU's method. Holes in leaf region are filled using region filling technique. Number of pixels in square object and leaf region are calculated and leaf area is measured by number of pixels statistics. Accuracy of algorithm is above 99% which is confirmed by comparing the results of proposed
algorithm with grid count method.

References


Index Terms

Computer Science

Pattern Recognition
Keywords

Image Segmentation  Color Transform  Plant Leaf Spot Disease  Leaf Area Measurement