Intelligent Robot for Agricultural Plants Health Detection Using Image Processing

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Abstract— *In this discussion, present a general recursive approach for image segmentation by thresholding method. The new acercar has been implemented in the scope of document images. In that segments the brightest homogeneous object from a given image at each recursion, leaving only the darkest homogeneous object after the last recursion. The major steps of the new technique and the experimental results that illustrate the most importance and the useful of the new one approach for the specified class of document images of plant health detection.*

Keywords— *Threshold method, Grey-scale images, image enhancement, image segmentation.*

I. INTRODUCTION

In many applications of image processing using threshold method, the gray levels of pixels belonging to the object are different from the gray levels of the pixels appartenance to the background. Threshold becomes then a simple but effective tool to separate objects from the background. The examples of threshold applications are document image analysis where the goal is to extraction logos, graphical content ,printed characters, map processing where lines, legends, characters are to be found, scene processing where a target is to detected, quality inspection of materials. The output of threshold operation is a binary image having two levels, one is gray level of 0 (black) will indicate a pixel belonging to a print, drawing, or target and a gray level of 1 (white) will indicate the background. The thresholding method use to detect the disease on leaf if it is more the take action. By using this method it is easy to detect the disease accurately and data share on the monitor for user friendly observation. In thresholding method there are two tyle one global and local thresholding method. Out of these use use global thresholding method and there again three type traditional, interative and multisage.

II. SYSTEM DESIGN

In this discussion we design the intelligent Robot for plant health detection and also which will sense the data in real time. In this, monitor the environmental parameters such as temperature, humidity, soil moisture etc. and disease also.
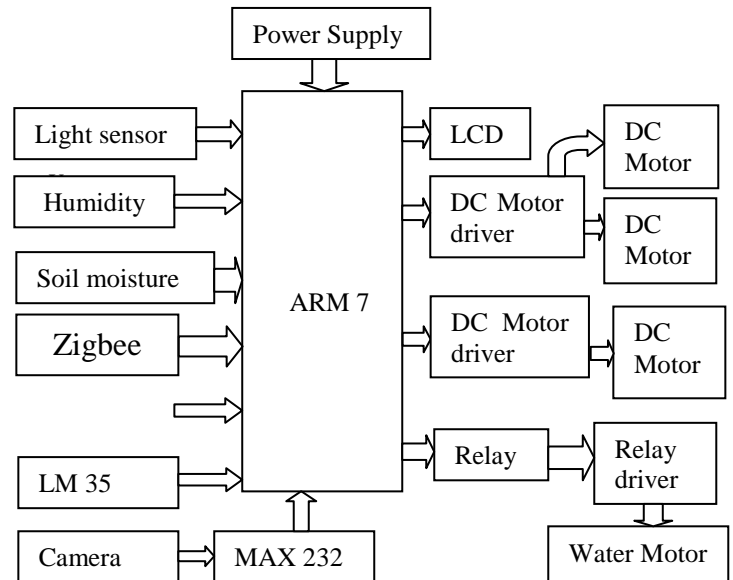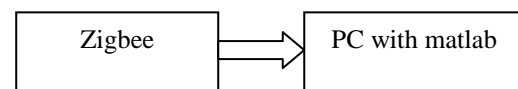

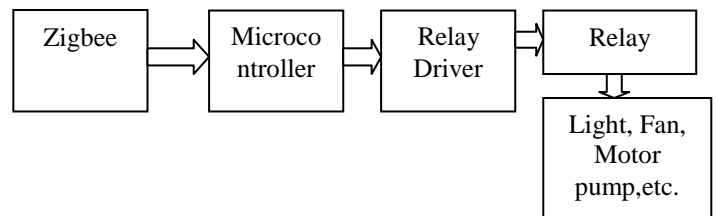
Fig. 1. Propose system.

Fig. 2. Control unit.

Fig. 3. Contorl system.

III. LEAF DISEASE DETECTION WITH FIELD PARAMETER MONITORING

In this project discussion first capture the image of plant by using Global thresholding method. When there the intensity distribution between the objects of foreground and background are very intelligible then gobal thresholding method. When the differences between foreground and background objects are very intelligible, a single value of threshold can simply be used to differentiate both objects apart. Otsu method are most common in global thresholding entropy based thresholding,

etc. Traditional Thresholding (Otsu's method). In image processing, segmentation is most important and the first step to pre-process images for extract objects of interest for further analysis. In the segmentation techniques there are generally categorized into two frameworks, one is edge-based and second one region based approaches. As a segmentation technique, Otsu's method is used in pattern recognition, document binarization, and computer vision. Otsu's method is used in segment as a pre-processing technique for further processing such as feature analysis and quantification. Otsu's method searches for a threshold that minimizes the intra-class variances of the segmented image and can achieve good results when the histogram of the original image has two different peaks, one along to the background, and the other belongs to the foreground or the signal. The definition of Otsu's method is more profoundly determined by the class that has the larger variance, be it the background or the foreground. As such, Otsu's method may create suboptimal results when the histogram of the image has more than two peaks or if one of the classes has a large variance. The camera the photo as shown in below figure 4.

Fig. 4. Image of plant.

The image received by the controller then process take place on that and find the number of s of disease on leaf. In software according to incoming data it display on monitor screen as shown in figure 5.
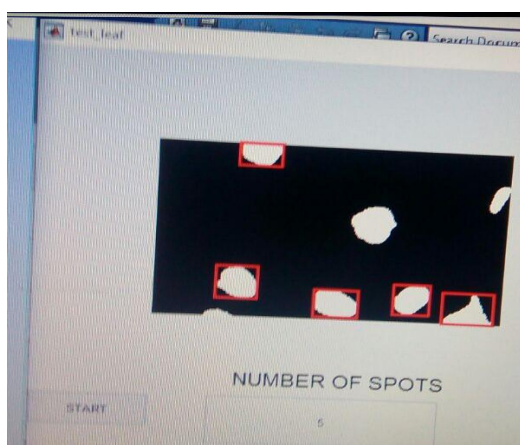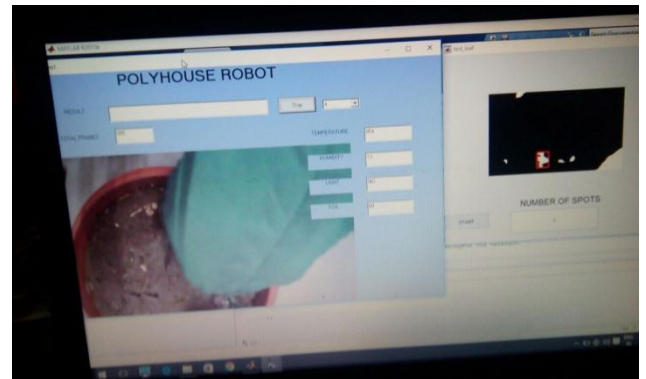

Fig. 5. Test the leaf.

Fig. 6. Data of polyhouse monitoring.

IV. CONCLUSION

In the image processing on leaf disease detection of plant health detection and monitor the field parameter, with this technique crop production increases with less man power. This is done using different software such as matlab and visual basis. In this project is very useful for farmer to increase the crop production using intelligent robot with better sensing device and image processing method.

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