COUNTING FLOWERS IN DIGITAL IMAGE: A REVIEW

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ABSTRACT: This paper discuses and well us reviews the algorithms and the technologies which are available for detecting and counting the number of flowers from the flower images captured by digital camera. This paper reviews various research work done in this field and provides the complete overview regarding the work done in field of identifying the overlapping images. Precision agriculture is a management philosophy that meets spatial variability found in agricultural landscapes. Precision agriculture techniques could be used to improve economic and environmental sustainability in crop production and management [1]. Performance evaluation is an important task in the management of agricultural product. The current manual based performance assessment is time-consuming, labor intensive and inaccurate [2]. To address this challenge, we propose a computer vision based system for automated, rapid and accurate assessment of performance.
Keywords: Overlapping Images, Flower Detection, Image Processing, Image Detection.

I. INTRODUCTION

India is an agriculture based nation and it is an exceptionally solid wellspring of wage for the employment of Indian ranchers. Agrarian and agricultural items assume an essential part in Indian economy to the extent the outside income is concerned. The income depends on the classifying of the item. Data age, for the accumulation and dispersion of data handling the utilization and improvement in data and correspondence (ICT), has been tried and created in numerous nations. In post-reaping stage creation and cutting of good size and quality horticultural item, so that the rancher will get a decent return as far as cash. Cutting of item is done physically so far which is arduous as well as the bulky and tedious too [4]. Also, there are issues with the exactness of manual tally because of the higher measure of rural item and consumption of a nonstop and redundant work. Because of the extensive size of creation, even a 10% blunder in the assessment is a noteworthy misfortune to the business. On the off chance that overestimated, cash on pre-request for boats and trucks is lost and a vast venture is possibly hindered because of unnecessary pressing. On the off chance that belittled, gatherers are inadequate, packers, bundling material and absence of time to sort pontoons may require a mass offer of items at a much lower cost. It is the need of hour to build up a programmed calculation to facilitate the undertaking and do it quickly with more exactness and accuracy. Having a vigorous robotized tallying system encourages quick, predictable and helpful approach to have items. This recoveries considerably more cash spent on manual tallying, and in addition misfortune because of wrong

gauges. In the present study we are going to propose a choice emotionally supportive network that could create agriculture item yield data and serve as base for administration and arranging of showcasing. There are around 250,000 named flower species on the planet, consistently we can see numerous blossoming flowers in the roadside, garden, park, mountain way, wild field, green houses and so forth [1]. Presently a day the utilization of innovation in the field of agriculture is expanding step by step for decreasing the labor and expanding the creation limit. By and large the flowers generation is taken in nurseries and fields for the income reason by agriculturists. Delivered flowers sold in business sector by the ranchers as bundle. Be that as it may, in the business sector these flowers sold as units; henceforth the benefit pick up by the specialist is more than the agriculturist; in light of the fact that a rancher doesn't know what number of (in units) flowers are there in his nursery. So to beat this issue, picture preparing application can be utilized to naturally identify and check the quantity of flowers accessible in the greenhouse. Information is a primary requirement of precision agriculture. The lack of support systems has been found as a major obstacle for successful implementation of precision agriculture. In the information age, for gathering and distributing agricultural Information using advances in Information and Communication Technology. The task of detecting flowers for the cutting is done manually with human intelligence, which is time consuming and error pron. Also accuracy result of manual recognition and counting decreases over time [6]. The prime objective of the study is to design an automated system that can detect and count the gerbera flowers in the Polyhouse images, with the help of feature extraction and recognition technique.

A. Data Gathering
For the construction of this system, firstly the images were captured and then applying the preprocessing task as we don't required the date portion which already shown in the pictures of the flower. After this, the flower definition is odne which is carried out by the HSV space. As there are various color spaces like RGB, HSV, YUV, etc. which define the color of the flower. The color of the flower represents the main factor or we can say the main phenomenon of counting the number of flower as the field consisting of different colors of flower and if this factor is being neglected then it might cause false result.

B. Flower Definition
Distinguishing proof and detachment of flowers from the field pictures is performed with the assistance of picture division utilizing thresholding strategy. Thresholding

comprises of dividing a picture into two or more districts: article locales and a foundation area. For any dim scale picture the division procedure is spoken to as Basically, this procedure works by setting to 1-white all pixels that cross the dim level breaking point, called the edge, and setting rest of the pixels in the picture to 0-dark (1). The subsequent picture is alluded to as a paired picture. A HSV picture I can be spoken to as set of pixels Pi each having Hue, Saturation and perspective elements.

II. RELATED WORK

James Theiler and Lakshman Prasad [1] ,in this paper creators will give an account of investigations in which the objective is unspecified (it is an abnormality), and different division techniques are utilized, including a versatile progressive tree-based plan. They find that divisions that utilize cover accomplish better execution in the low false caution rate administration. Balvant V. Biradar, Santosh P. Shrikhande [2] ,This paper disks the conspicuous and proficient strategy for recognizing and checking the quantity of flowers from the flower pictures caught by computerized camera. The proposed strategy utilizes Gaussian low-pass channel and morphological operations for pre-preparing the flower pictures to evacuate the non flower locale and upgrade of fine points of interest. The flower locale from info picture is sectioned utilizing worldwide thresholding system utilizing OTSU's calculation. Trial is directed in MATLAB on two unmistakable databases of marigold flower pictures, the outcomes have demonstrated that the exactness is more than 92% to identify and check the quantity of flowers from flower pictures. Anuradha Sharma, Alok Bansal, Vijay Kumar Sharma [3] ,In this paper talk about on a few systems and operation for conquer this issue like shading picture division procedure, Image division, Using HSV shading space and Morphological Operations. A shading space model is intended to make, indicate and picture shading properties of a picture. A shading is by and large determined utilizing three directions, or parameters. These parameters depict the position of the shading in the shading space utilized. In this paper utilized two most mainstream shading space are RGB and HSV. HSV shading space decouples brilliance from chromatic part in the picture by which it give better result in the event that to impediment and covering. Neetika BairwaNavneet Kumar Agrawal [4] ,Flower including is utilized yield estimation of a specific product utilizing exactness agriculture (PA) . In created calculation they check yellow Gerbera flower caught under polyhouse. Identification and tallying of flower should be possible utilizing HSV shading space [4] and Circular Hough Transform (CHT). 15 pictures are handled and their reproduction results demonstrates that the tallying of flowers giving exactness of 95.01% utilizing created calculation which is vastly improved than calculation given by Sarkate, et. al. 2013. The created calculation is additionally connected on Marigold flower caught in open field having exactness of 94.66% and Coltsfoot flower which are taken from web having precision of 84.50%.

Neetika Bairwa, Navneet Agrawal,Suriti Gupta [5] In this paper an outline of past examination and frameworks to tally the quantity of horticultural items and the yield appraisal is led and their constraints are talked about. The PC vision procedures are exhibited to computerize the procedure of numbering. Another methodology for numbering of covered rural item is portrayed. The paper is finished up with results for numbering of gerbera flowers by method for HSV (shade immersion and quality) shading space and disintegration process which lessens the issue of covering and giving an exactness of 89.86% under polyhouse conditions.

III. CONCLUSION AND FUTURE SCOPE

This paper has presented a review on the technologies and algorithms for detecting and counting the number of flowers from flower images of a greenhouse. The farmer and agents can use this application to count and verify the number of flowers available in the greenhouse easily and quickly with affordable cost. This research is extended in future for flower counting ,removing flowers overlapping, classification between the buds and flowers for accurate estimation of production. Also this application can be extended towards the detecting and counting the mixed category flowers in a greenhouse by detecting and recognizing each flower category and its count.

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