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Automatic Detection of Vegetable Freshness Using Image Processing

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Abstract - Nowadays there are so many developing trend and ways of mechanization of vegetable, with analyzing the developing backgrounds and situations of vegetable analysis both at home and abroad. This paper study review of such system. In our proposed system we are interested in analyzing and detecting the quality of the leafy vegetable. By this approach we can give the greenness and quality of green leafy vegetable using image processing.

Keywords - Analysis, detection, greenness quality.

1. Introduction

Vegetable has been the most popular and healthy beverage around the world. Vegetable industry has stepped into a fast-developing period, with a more and more prosperous production What badly needs to be solved is the development of vegetable harvesting mechanization.

The paper points out the existing problems, the later developing ways and gives out some instructive suggestions by analyzing and studying the developing history and present situations of vegetable analysis. Nowadays, human life becomes more competitive and faster than the previous. Automation brought about by technology has saved human effort and time to a large extent. Plucking Vegetables are time consuming task in our busy life. This project is aimed at solving above stated problems by Introducing a special product named as Automatic detection of vegetable freshness using image processing. Its main features are easily portable and less Power consumption. To acquire the developing trend and ways of mechanization of vegetable, with analyzing the developing backgrounds and situations of vegetable analysis both at home and abroad. This Paper obtains the conclusion that there are several countries that have conducted a lot of studies on vegetable analysis, such as Japan, England, France, India, Australia and Argentina. Among Others, Japan goes ahead, where lots of researches have been conducted in the highest developing level. The article also analyses the reason why China has a poor mechanization of vegetable analysis and points out existing problems. Finally, some advices and measures for developing domestic mechanization of vegetable analysis are introduced. We have visualized that there are certain products or machinery available in market for various purposes such as cutting, chopping of vegetables. In the current scenario, though the technology has come up with plucker and cutter machine. But for the analysis of greenness and to check the quality of the vegetable Studies on small vegetable plucking machine are still being carried on. But there are very rare products with the feature of automatic vegetable analysis.

Hence we have come up an idea of developing such prototype model with a feature of automatic vegetable analyzer. The main objective is to check the quality and analysis of the green vegetables. Today, all these countries have, successively, also realized mechanization of vegetable harvesting. Now a days the green vegetable are not pure and they grow with the help of chemicals which harmful for the human being. To avoid these, in order to check the quality of vegetable and the greenness of the vegetable we have introduced these application. To check the quality of the vegetables and analyze its purity before consuming the vegetable up to 50% good. It will help one to identify the greenness of the vegetable.

2. Literature survey

A paper [1], proposed product design and development of gripper machine for the cutting of the vegetables. Different machines designed and developed for analysis and cost production id defined that gives the basic knowledge for the development of the machines. Depend on the type of machines the product cost varies.
Objective is to have a cost effective product and developed well-known gripper machine and various machines related to automatic detection and analysis of the vegetables in this era of visualization. A paper [2],

proposed Cotton is most important commodity in world and it cultivate by large areas in India. Cottons are pick from cotton ball by human hand which is costly and time consuming so automation of cotton picking is one way to Increase profit. In this paper a mechanism of cotton picking gripper is designed for automatic picking robot.

This gripper mechanism is design such that it can perform operation like holding cotton bolls stem, grasping cotton and plucking that cotton. The various dimension of gripper are obtained from virtual model. This designed gripper mechanism will used in various gripper parts design and assembly also it will use in fabrication of gripper. By this mechanism design various parameter of gripper are achieved by which dimension of cotton picking gripper can be known and also helpful in assembling and fabrication of cotton picking gripper.

3. Figures

Our proposed system consists of five phases. In these there are five phases:

1) Start phase
2) Capture phase
3) Check phase
4) Analysis phase

1) Start phase:

In these phase the user using mat lab software will open a window where the process starts. The user has to click on the start button and then it will further proceed to the capture phase.

2) Capture phase:

In these phase the user firstly has to place a green leafy vegetable in front of the web cam. The user has to click on the capture button and then it will automatically .Capture the image using image processing and then it will further proceed to the check phase.

3) Check phase:

In these phase after capturing the image automatically by the mat lab software using image processing the user has to click on the check button and then automatically check the greenness of the green leafy vegetable and then it will further proceed to analysis phase.

4) Analysis phase:

In these phase after capturing and detecting the greenness of green leafy vegetable it will automatically show the greenness and quality of the vegetable and then it will further proceed to led glow phase.

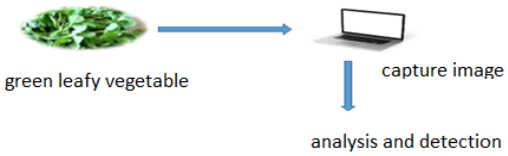

Figure. Overview of proposed system

1) Start phase

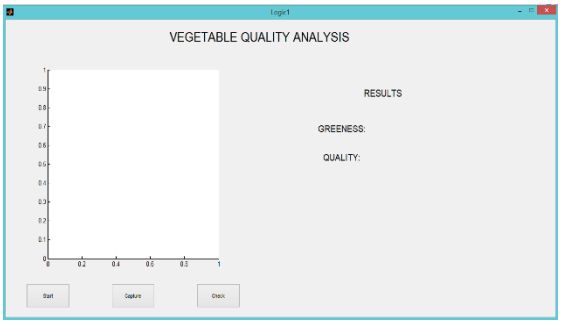

Figure. 2 (a)

The user has to click on the start button and then it will further proceed to the capture phase.

2) Capture phase

Figure 1. (b)

The user has to click on the capture button and then it will automatically Capture the image using image processing.

4. Future Scope

In future we can implement this system by using robotic arm to pluck the vegetable and depending on the greenness the robotic arm will automatically pluck and chop the raw part of vegetable.

5. Conclusion

In these paper we have developed the system in which we have analyzed and detected the quality and greenness of the leafy vegetable. By this approach we can give the greenness and quality of green leafy vegetable using image processing.

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