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# Smart Agricultural System Using Visual Basic Language

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**ABSTRACT:** In this paper we interpret about smart agriculture system. India is agricultural country and 70% of people are in farming so if we want to be developed country we need to focus on agriculture and so our project will assist farmers for agriculture production. Most of the rural farmers are not aware of the diseases that happen to the crops so it's important to give them a proper information about pesticides and fertilizers. Here we are using the visual basic language which has GUI so by utilizing that user that is farmer will enter the crop name and the land area. According to the entered information the farmers who are from rural areas or the people who don't know much about the diseases and prevention could get the information about crop diseases and even they can prevent their crop from insects and other factors.

**KEYWORDS:** Plant Disease, Crop, Fertilizer, Pesticides, Agriculture

## I. INTRODUCTION

Electronics is playing a big role altogether fields we found today in most sectors there's an enormous use of electronics and it's helpful in increasing the productivity. Agriculture field is additionally behind in electronics automation means in India actually it's needed because almost 70% people as a main occupation they're doing farming. the bulk of the world's poor people sleep in rural areas, and agriculture growth has proven effective in lifting rural families out of poverty and hunger. Managing the relation between agriculture, poverty and nutrition is critical as we glance towards providing children with a chance to succeed in their full potential. The new agenda should even have a goal that explicitly emphasizes on improving agricultural systems and addresses rural development in an integrated manner, as underscored also by the interim report of the Open working party. Agriculture must change to satisfy the rising demand, to contribute more effectively to the reduction of poverty and malnutrition, and to become ecologically more sustainable.

With the rise in atmosphere conditions there are several circumstances occur where there could also be attacks of some fungi, insects, etc. during this scenario with the assistance of pesticides and fertilizers this example are often controlled. Now in India there's a system of fertilizers through certain shops. during this case as a traditional buying user attend shop and purchases fertilizers. Several time it's observed the user that's farmers aren't conscious of the list of medicines which are used for particular disease or not. Again several companies after research of several products but as a user farmers aren't ready to get the sufficient information through the vendor.

during this case it's required that any normal farmer should be ready to get a correct fertilizer with an adequate quantity through an easy process. during a busy schedule a supplier of shop owner not be ready to give the knowledge regarding to all or any diseases and fertilizers and pesticides, but the farmer should get the right information aside from such sellers. And for an equivalent the concept is to supply correct fertilizers for particular crop with an adequate quantity. for instance, it's important for a farmer to understand herbicides which are used for weed control, which may be a very big issue for cereal crops like wheat, barley, corn, etc. For this weed control sulfonylurea herbicides like chlorsulfuron are used, this is often recommended by the system in local shops to the farmers.

Now we found ATM machines where money are often get after authentication then there's system like water distribution system where with the assistance of coins we are ready to get the water. within the same manner dispensing systems are utilized in various ways for distribution of varied products, during this case also the essential idea is developed a system which has automatic dispenser system user friendly graphical interface are going to be there where

the user will enter the crop information and approximate area to be covered and thereon bases system are going to be intelligently dispense the right fertilizer to the farmer. Such sorts of automations are needed in India to develop the agriculture production.

## II. RELATED WORK

### 1] Proposed work:

India has biggest percentage of land under agricultural use so it is necessary to look after it very carefully. And hence it is extremely essential to aware farmers about which fertilizers and pesticides should they spray on crop, in how much amount should they spray according to land area, crop which they are taking and season. This problem is resolved in our project. Here we have used GUI of visual basic language through which a farmer just needs to enter information related to his land area, a crop which he/she is taking and season. According to the entered information user will get suited pesticides and fertilizers.

### 2] As per review paper:

As per paper [1], [2] plant diseases, soil erosion and difficulties related to that are really major concern while thinking of agricultural field. Paper [3] tell us about the automation.

In paper [1] we get proficiency about plant diseases. Plant diseases can be caused by fungi, water bacteria, viruses, nematodes, phytoplasmas, or parasitic plants. Understanding the biology and symptoms common to these plant pathogens will help in identification and management of disease problems. Once a disease is properly detected, management options can be deployed to weaken disease impact.

The second paper deals with the problems of soil erosion and watershed [2]. This paper narrates a multi period non-linear programming model of agricultural production that comprises soil erosion and its end result on crop production within a small watershed. The motive of the model is to forecast the probable effects of different decisions taken by the regional people of the watershed on land uses, soils and incomes.

## III. METHODOLOGY

Smart agricultural system has various component such as microcontroller 89C52, 16X2 LCD display, power supply, MAX232, motor driver relay circuit, relays and motors. The total working of project is divided into two parts. I) Controller side II) Computer side.

In computer side there is database provide that contains several types of crops again per acre dose for particular medicine for particular problem that entire data base is fed in computer and here with the help of visual basic entire software is developed with the help of visual basic the graphical user interface is created in the back end database is created with the help of MS access. Here for any farmer with the help of GUI he will be able to select crop and he can enter the area (that is how much acre he is expected to give particular dose). In another part that is controller part display is interfaced again there is mechanism of dispensing of the particular medicines in this case we are planning to develop 4 racks through which dispensing can be possible of 4 types of fertilizers.

They are arranged in vertical manner. In this case for dispensing there is use of screw mechanism that is for a screw motor is interface for forward direction or for clockwise direction a moment of motor the screw conveyer will be in motion and as the motor takes several turns it will give displacement and that will push a particular bottle means as per the controller command which is received through computer the dispensing of a particular pesticide will be possible. Here in order to establish the communication MAX232 is interfaced which gives serial communication on RS232 standard. Again for the motions of motor, relays are used and for driving the relay 112003 relay driver IC is used. Thus simply system works like user will enter the crop type he will give area again based on the inputs, system will decide which type of crop related pesticide it will give the list that is user that is farmer will select from the list that command will be given through serial communication to controller with corresponding dispenser the controller will immediately activate the relay and with motion of dc motor dispensing for particular pesticides bottle will happen.

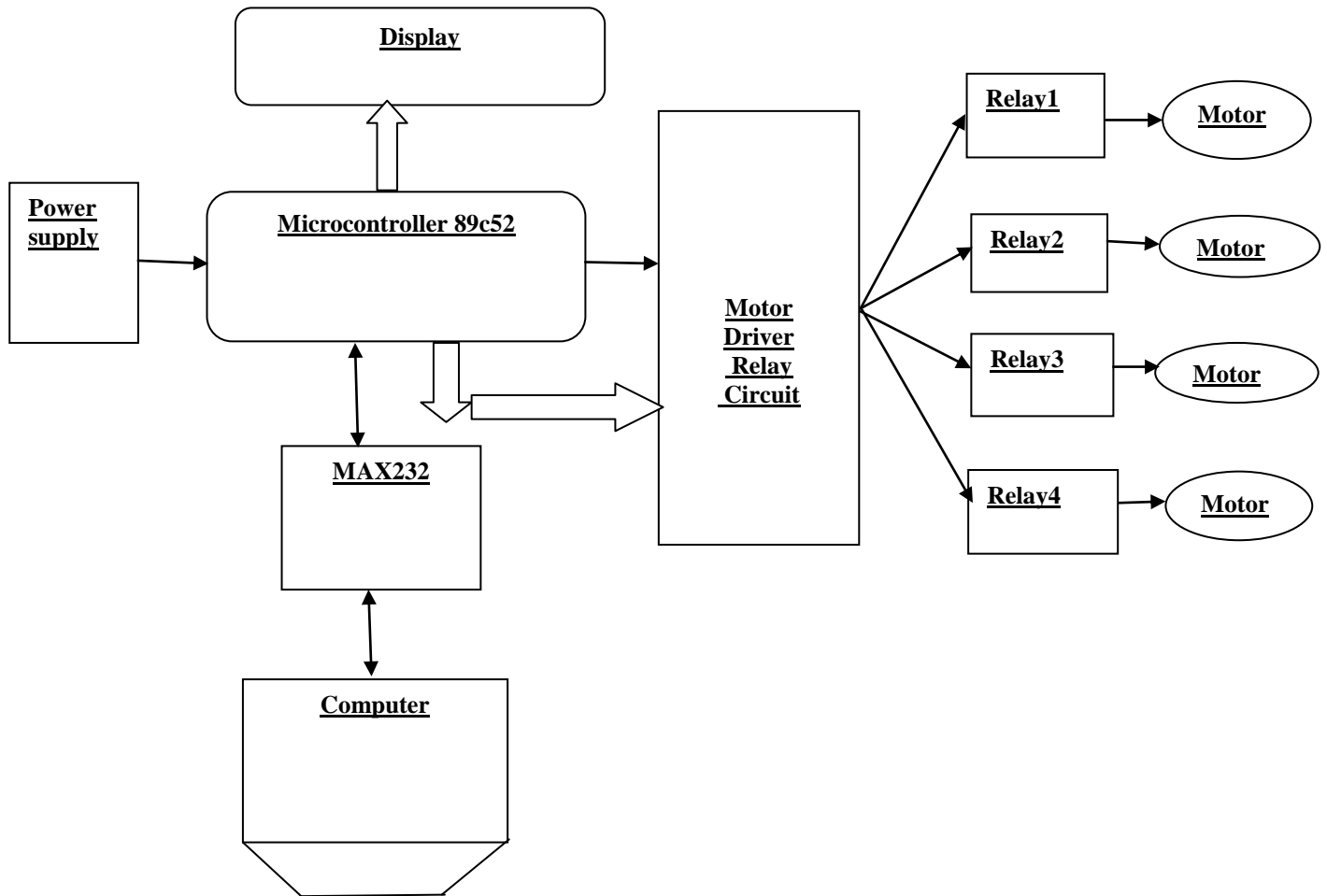


Fig 1:Block Diagram

#### IV. EXPERIMENTAL RESULTS

Figure 2 shows the GUI part of visual basic language where farmer will enter information corresponding to his/her land area ,crop and season and according to the entered information system will provide suited pesticides and fertilizers . Also, it makes farmer knowledgeable about the diseases happening to the crop ,how will it look and quantity i.e in how much amount should they spray pesticides and fertilizers.

Figure 3 shows the interfacing part where microcontroller is interfaced with MAX232 and 16X2 LCD display.

Figure 4 shows the hardware part of the project. Here we have willed 4 racks. Each rack has two sliders and bottles of pesticides and fertilizers and as per the entered data user will get that much quantity of bottles.



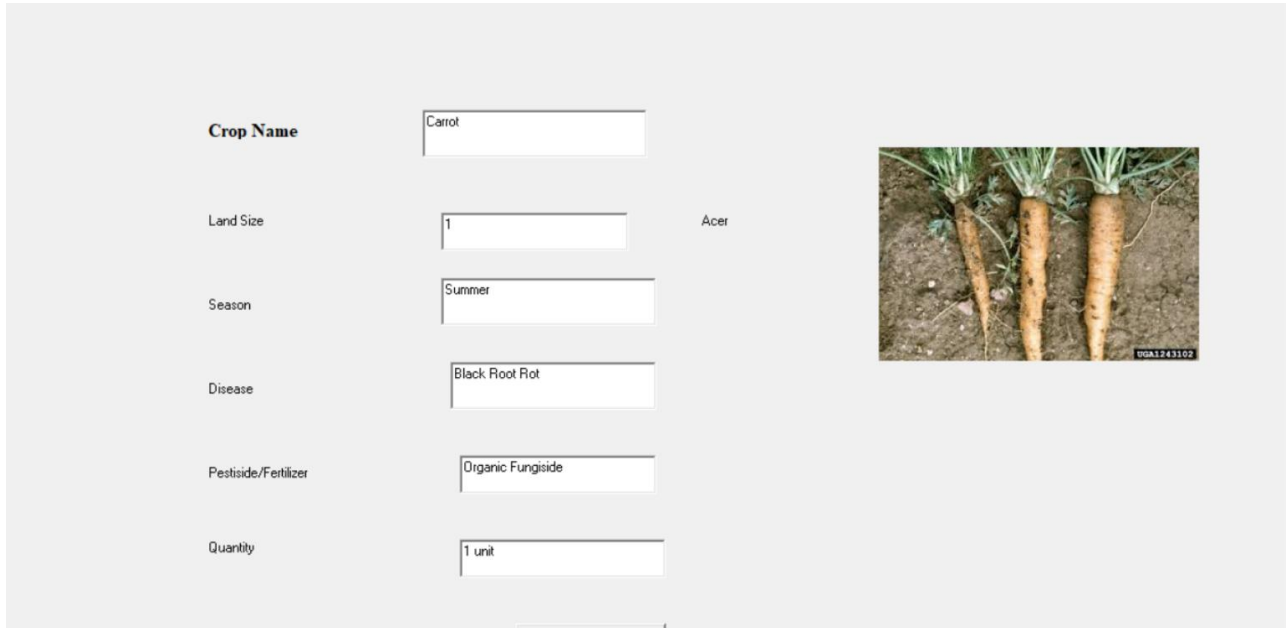


Fig 2:GUI part

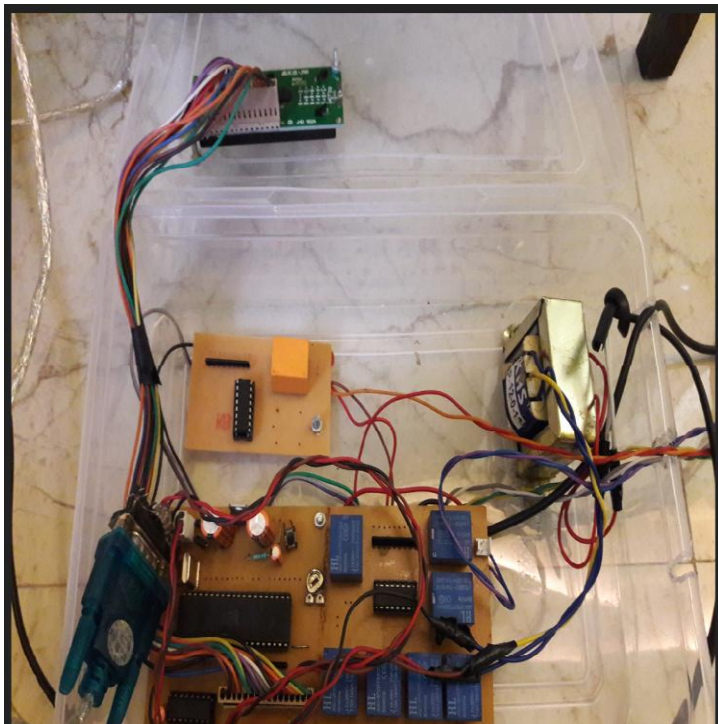


Fig 3:Hardware part1



Fig 4: Hardware part2

## V. CONCLUSION

In this project we developed pesticide dispensing machine so user can access the machine. As the user can individually handle the machine the system saves the time. This system definitely useful and support the agriculture medicine shops to reduce the manpower and increase the service providing speed. This smart agricultural system is machine that



requires littlest effort to dispense a fertilizer and pesticide to the user. The proposed design is able to dispense bottle as per the suited quantity.

Other advantages of the proposed design are:

- Automatically work
- Good
- Low maintenance.
- It is portable.
- Easy operation.
- Eco friendly in nature.

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