

The Environmental Factors Monitoring For Healthy Crop Growth

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ABSTRACT

As India is labeled as the agriculture based country which has the majority of the village peoples depending mainly on the agriculture products for the life survival and economic stability in life. Any misconduct of the plant growth has the direct effect of the Indian economy also. Due to the end of the digital techniques in the agriculture the addition of modern technologies will help to increase the total yield.

The environmental factors like temperature, moisture, water PH level and water level will play the important role in the total yield of the plants. Hence monitoring the environment factors will help to detect and also manage the plant and increase the total yield.

INTRODUCTION

The Internet of Things (IOT) refers to monitoring, communicating with the systems by using the devices dedicated and developed for the sole purpose. In the field of the agriculture the IOT has been playing an important role. It uses the devices

to help the farmers to monitor and also control the field growth. The devices like sensors, pumps, signal systems, Wi-Fi devices will allow the farmer to increase the total yield by allowing to maintain the suitable environment to the crops in the field.

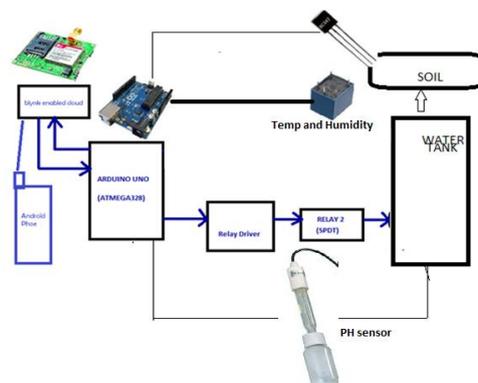


Fig. IOT based agriculture

II.LITERATURE SURVEY

In 2016, DivyaKaur presented a paper on “IOT based Water Tank Control system “for prevent the water wastage. Making a control system to automatically control the water pump requires careful observation of what people do as their daily activity to make sure that the tank is full. In almost all over India every state has a State Water Supply body which is responsible for development and regulation of water supply in state. Due to scarcity of water the release of water is controlled and done at certain time(s) in a day. So this paper is aimed at presenting the project in embedding a control system into an automatic control system into an automatic environmental factors controller using Wi-Fi module. In 2015,N Vijayakumar and R Ramya present a ”Design and development of a low cost system for real time monitoring of the water quality in IoT (internet of things)”.The system consists different sensors like pH ,turbidity, environmental factors sensors etc. All the parameters are measured and that measured value which is stored from sensors can be processed by Raspberry PI B+. The sensor data can be shown on internet by using cloud computing and this devices are more efficient, low cost, and capable of processing, sending operation through Wi-Fi module to mobile phones. This can implement for environment

[2] Monitoring and the data can be viewed anywhere in the world. In 2013 SaimaMaqbool , Nidhi Chandra presented a paper on “Real Time Wireless Monitoring and Control of Water Systems using Zigbee 802.15.4” in which the architecture which comprises a number of elements likes water quality sensor environmental factors sensor, GSM modem , PC, XBee, and a database. Sensor nodes are performing the particular function or job, sense the data and those data are transmitted to the end tool or machine via inverter. Sensed data is coordinated by network equipment’s like Router.

Router will gather data from the end tool like XBees which in turn from sensors and sends the data to coordinator. In the computer all information are presented. In the Computer; river level, bore environmental factors and bore environmental factors is shown by using C sharp program. From computer particular task can be executed like “SMS” is forwarded to user’s system and at alarm are blows at the desired level. All these data can be kept and saved in database which will be utilized to implement a “water expert system” through a long term supervising and investigation. In 2015 ,Thinagaran Perumall, Md. NasirSulaiman, Leong presented “ Internet of Things (IoT) Enabled Water System” .They implemented “ water monitoring system using IOT” for real time scenario. This resolution is of low cost which includes system of integrated sensory that permits inner observation for quality of water. Using Internet, relevant and warning data are transferred to a cloud server and these data can be received by user terminal which are owned by consumers. The water measurement’s end result is shown on cloud.

A Thingspeak as a segment of alert system is integrated also. This type of organization can be utilized fairly effectively by residential users as by industrial users or more water utilities. By using Internet of Things, this type of organization can give early alert system for portable water quality. In 2012,MadeSaraswati,

Endrowednes Kauntama ,PonoMardjoko presented a paper on “Design and Construction of Environmental factors Management system Accessible Through SMS”. This system utilizes ultrasonic sensor which calculates the level of water without any contact to water. For the data processor, the microcontroller is used and controller to other electronic components. In this system, SMS (Short Message Service) is used to report the measurement.

The major aim of this exploration is to implement or develop a such type of organization that

can calculate the environmental factors using microcontroller automatically. As a SMS, all these results of measurement can be forwarded to the cell phone of user at every request. This type of organization can reorganize with many measurements site, as long as the initial setting by SMS according to the installation to each measurement site was done. In 2016 ,B.Dhivyapriya, C. Gulabsha, S. P. Maniprabha , G.Kandasamy, Dr.V. Chandrasekaran ,GSM based water tank level monitoring and pump control system .In which a new technique is proposed to continuously keeps track of the level of water in water systems like overhead water tanks. The user can send the message to the system to know the environmental factors details of the tank and also be used to regulate the pump spontaneously by turning OFF the pump when the critical level of water in tank is reached and send the message to the user that the water in the tank is full

III.EXISTING SYSTEM

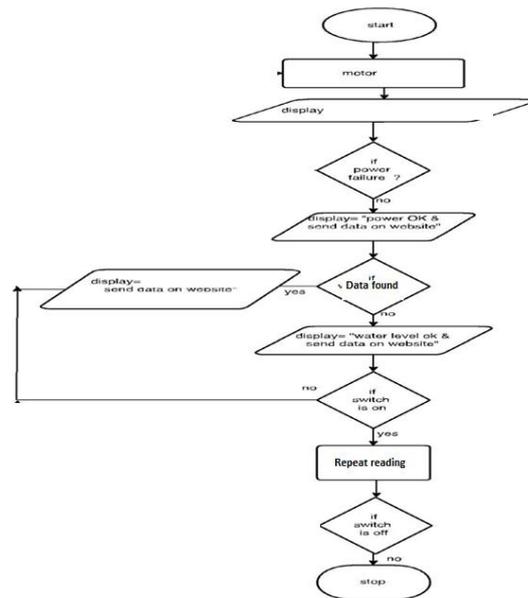
The environmental factors controller systems which are in use are mostly manual involving the peoples to operate. People should observe the level of water in soil and manually operate the motor, which is time consuming and in efficient.

PROPOSED SYSEM

To overcome the drawbacks of the existing methods we have developed a simple yet effective easy of controlling and monitoring the environmental factors. The user is allowed to view the environmental factors level in the field by remote location by using the android phone. It will allow the user to be relax and easy and can efficiently monitor the plant growth.

ARCHITECTURE DIAGRAM

FLOW CHART:



EXPERIMENTAL RESULT

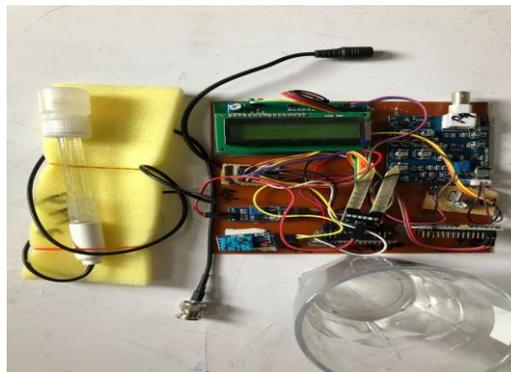


Fig: proposed IOT kit

The main and important factors in the circuit connection can be of the following three VCC, GND, SIG.

- **VCC is the positive power terminal.** The sensors can use and adopt both 3.3V and 5V power input. the supply pin to Arduino used in the proposed work is of +5 v.
- **GND is the negative power terminal.** The GND on the circuit Arduino, or alternatively we can set any of the unused end terminal based pin as the negative end terminal.
- **SIG is the environmental factors reading.** The sensor outputs signal based on two main factors: the input voltage and the environmental factors level of the soil. The arduino is capable of reading the signals and display on the LCD display.

The proposed work will work in multiple levels like reading temperature in air, humidity in air, Ph level of water, moisture level in air and soil . the data is maintained by the cloud which can be accessed by using the android mobile of user.

IV.CONCLUSION

Automatic environmental factors monitoring control system has been designed and constructed. The prototype of the system worked according to specification and unite satisfactorily. The system components are readily available, relatively affordable and they operate quite reliably.

The system helps to eliminate the stress of manual environmental factors monitoring and environmental factors monitoring control while at the same time conserving the available water supply. Improving Environmental factors monitoring efficiency can contribute greatly to reducing production costs of agricultural products, thereby making the industry to be more competitive and sustainable.

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