**AGRICULTURAL CROP MONITORING**

**ABSTRACT:**

Automatic Controller is remodeling the agriculture enabling the farmers with the wide range of techniques such as precision and sustainable agriculture to face challenges in the field. Arduino technology helps in collecting information about conditions like weather, moisture, temperature and fertility of soil, Crop online monitoring enables detection of weed, level of water, pest detection, and animal intrusion in to the field, crop growth, and agriculture. Microcontroller leverages farmers to get connected to his farm from anywhere and anytime. Wireless sensor networks are used for monitoring the farm conditions and micro controllers are used to control and automate the farm processes. The microcontroller will automatically detect the temperature and the water level, when the temperature increases and the level decreases then it automatically turn on the motor.

**EXISTING SYSTEM:**

This system describes the monitoring of agricultural crops and their evolution with Polarimetric Synthetic Aperture Radar (PolSAR) time series. SAR polarimetry is very useful for this task due to its sensitivity to the plant structure. A polarimetric change analysis is proposed in order to detect and characterize the observed differences between two acquisitions. This analysis is able to determine the types of scattering that increase or decrease among acquisitions, which allows a better interpretation of the change. Then, the proposed technique is evaluated with the AgriSAR 2006 dataset in order to verify the results and compare them with the ground measurements.

**DISADVANTAGE:**

* Lack of accuracy in sandy soil due to their large particles
* Requiring periodic service

**PROPOSED SYSTEM:**

The proposed explains the use of microcontroller used in automating irrigation. Irrigation control and rescheduling based on microcontroller are powerful solutions for optimum water management through automatic communication to know the soil moisture conditions of irrigation design. The process used here is to determine the proper frequency and time of watering are important to ensure the efficient use of water, high quality of crop detection delay throughput and load. Simulation is done for agriculture by OPNET. Microcontroller uses low power and a low data rate and hence energy efficient technology. All the devices and machines controlled with the help of inputs received via sensors which are mixed with soil. Farmers can analyze whether the system performs in normally or some actions are need to be performed. The sensor nodes have several external sensors namely soil moisture sensor, soil pH, atmospheric temperature sensors attached to it. Based on the soil moisture sensor the mote triggers the water sprinkling during the period of water scarcity and switches off after adequate water is sprinkled.. This information helps the farmers to reduce quantity of fertilizers used. A development of rice crop monitoring using microcontroller is proposed to provide a helping hand to farmers in real time monitoring and increasing the rice production. The automated control of water sprinkling and ultimate supply of information is implemented using microcontroller.

**ADVANTAGE:**

* Ability to read soil volumetric water content directly
* Highly accurate when sensors are installed properly in good contact with soil
* Low cost for this system
* Periodically monitoring the soil

POWER SUPPLY

**BLOCK DIAGRAM:**

RELAY

WATER LEVEL SENSOR

TEMPERATURE SENSOR

PIC 16F877A

PUMP

**HARDWARE REQUIREMENTS:**

* PIC16F877A Microcontroller
* Temperature sensor
* Water Level Sensor
* Pump
* Relay

**SOFTWARE REQUIREMENTS:**

* MPLAB software
* Embedded C