**An Improved Agriculture Plant Disease Detection and Monitoring Using IOT**

**Alternative Title:**

 IOT based Plant disease detection based on AI process

**Aim:**

 The Mainstay of the project is to develop a robot to identify and spray insecticides and hydrate plants. We involve AI based Image analysis to detect disease in agricultural domain.

**Abstract**:

 This project will investigate the development and testing of a robot capable of spraying pesticides, and water for agricultural lands. Precision spraying operations and perfect operation logging were made possible by the robot system. Based on the precise actions and records, optimal chemical management could be projected, with the required amount of chemicals sprayed only when necessary, and this robot may contribute to the lowest input maximum output production system by building a traceability system in production. The robot module is designed to spray pesticides and hydrate plants. The introduction of the Agro bots would result in the abolition of annual labour. In this context, a demonstration model of such equipment capable of carrying out the approach effectively may be provided. Work hours and expenditures would be decreased as a result of the production of these Agro bots. It captivates people's interest in agriculture now and in the future, because implementing an embedded automation project in agriculture has a significant influence. Robot control with wireless network for user requirements (Bluetooth).

 Farming is well-known in India, where it employs more than 60% of the population. It accounts for the vast majority of India's GDP. Crop production should be high and of good quality in this scenario, resulting in a significant production of food and income to farmers. Crop diseases can have an impact on both the quality and quantity of crops. There are 3 kinds of crop diseases: bacterial, fungal, and spot diseases. diagnostic test techniques have been used, which result in the use of a substantial percentage of pesticides, which have an influence on both the fertile soil and the environment. We developed a robot in this module to spray insecticides, hydrate plants, and supply nutrients. The arrival of the Agro bots would eliminate annual labour. In this regard, a demonstration model of such equipment that effectively conducts the technique may be supplied. As a result of the production of these Agro bots, work hours and costs would be reduced. The approach is to use new agricultural instruments to assist farmers in detecting diseases more quickly and increasing crop output. As part of our research, we constructed a robot to identify leaf illness and monitor field conditions as part of our research, using modern techniques such as image processing

**Existing System:**

 The existing plant disease detection technology is utilized to detect the disease that affects the plants. Humans manually watching and detecting the plant diseases and pesticides are spray over the all areas in the garden. In this method more time taken and lot of pesticides quantity wasted.

**Proposed System:**

 The leaf disease dataset is created in this system to provide an important guarantee of the proposed model's generalization capacity. First, because diseased leaf photos are insufficient for strengthening the robustness of the yolo model and preventing over fitting of the yolo based model during the training phase, natural diseased plant photographs are processed to provide sufficient training images via data augmentation, it can detect the most frequent types of plant diseases with high accuracy by automatically identifying the discriminative features of diseased leaf photos.

**Diagram:**

 Maixduino

 AI controller

 LCD display

 Dc pumps

 DC motors

 Relay board

 Bluetooth

 Arduino

 Mega

 Power supply

 DHT11

 Ultrasonic sensor

 Ai camera

**Requirements:**

**Hardware Requirements:**

* **Maixduino**
* **Arduino mega**
* **DHT11**
* **Ultrosonic**
* **Robot setup**
* **Lcd**
* **Bluetooth**
* **Relay board 2 channel**
* **DC Pumps-2**
* **Power supply board**
* **Plastic leaf sample**

**Software Requirements:**

* **Language: c, c++**
* **Compiler: arduino IDE, K-flash , Maixpy IDE**