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Involuntary Nutrients Dispense System for Soil Deficiency using IOT

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Abstract: The Internet of Things (IoT) is transforming the agriculture industry and enabling farmers to contend with the enormous challenges they face. However farmers use antiquated techniques which lead to overuse or under usage of fertilizer. The aim of the project is to reduce the usage of fertilizer in the field and also to reduce the work of the farmer. If more amount of fertilizer is used, it will affect the human health and also affect the nature of the soil. The soil pH solution is very important because the soil solution carries macronutrients such as Nitrogen (N), Potassium (K) and Phosphorous (P) that plants need in specific amounts to grow, thrive and fight off diseases. If the soil pH level is more than 5.5, it raises the nitrogen content in it. When soil pH is between 6.0 and 7.0 then phosphorous is also available to the plants. Plants cannot utilize N, P, K and other nutrients, if soil solution is too acidic. In acidic soils, plants are more likely to take up toxic metals and some plants eventually die of toxicity (poisoning). Here the pH sensor is used to remotely monitor the nutrients level in the soil for better crop production. The pH sensor detect the pH value in the soil and send the data to the Raspberry Pi which will get displayed in the LCD display. Based on the pH value the NPK values are obtained. Here the IoT is used to enable the farmers to easily visualize the data and take actions on insights and recommendations.
Keywords:pH sensor, Internet of Things, Raspberry Pi, LCD display, Liquid Level Sensor.

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