



Visvesvaraya Technological University

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A Project Report

On

“SMART SOIL ANALYSER”

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Submitted by

Chowda Reddy T G

Farooq Pasha

Raghavendra S K

Somashekharappa L S

1BJ09EC401

1BJ09EC403

1BJ09EC411

1BJ09EC415

Internal Guide

Prasanna Kumar C

Dept. of ECE,

SBMJCE



Sri Bhagawan Mahaveer Jain College of Engineering

Jakkasandra Post, Kanakapura Taluk, Ramanagara District – 562112

ABSTRACT

Agriculture has been the backbone of the Indian economy. When farmers grow and harvest crops, they lost some of the nutrients from the soil. To improve the fertility of the soil they use fertilizers randomly. But all crops not require same or equal nutrients. A nutrient requirement is depends on the crop and its age. It results in less yields and excess use of fertilizers. An Applying fertilizer to the crop without testing the soil is like taking medicine for decease without consulting doctor. To stop unnecessary use of fertilizers government opens soil testing centers. But they are not more effective because they take long time to get results and difficult to take regular tests during single crop life cycle. To reduce these problems and get high yields we come with new innovative idea that is “**Smart Soil Analyser**”.

The SSA measures NPK (Nitrogen, Phosphorus, and Potash), pH value, salt content, temperature and moisture and also recommends required amount of nutrient contents in a given soil. It has two options one is ‘**Soil test**’ and other one is the ‘**Soil analysis**’. The soil test option measures the above mentioned content in the given soil.

The farmers know when to give fertilizer to the crops, but they don’t know in which percent it is required. To get recommendation from SSA, the farmer has to select the ‘name’ and ‘age’ of crop. Then the SSA tests the NPK (Nitrogen, Phosphorus, and Potash), pH value, salt content, temperature and moisture content in soil. After this process the measured values are compared with predefined database and the device displays the required amount of each individual nutrient contents for selected crop. To measure the above parameters we are using respective electrodes and sensor, these measured values are compared with the predefined data base values and finally displays the required amount of fertilizer to be given.