# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

JNANA SANGAMA CAMPUS, BELGAVI - 590018

MINI-PROJECT REPORT ON

# "DEVELOPMENT OF PORTABLE TYPE SOIL QUALITY MEASURING DEVICE"

*Submitted In Partial Fulfilment of The Requirements for The Award Degree Of*

**BACHELOR OF ENGINEERING**

**IN**

**AGRICULTURE ENGINEERING**


**SUBMITTED BY:**

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ALVA'S
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**DEPARTMENT OF AGRICULTURE ENGINEERING**

**ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY**

**Accredited by NBA & NAAC With A+ Grade**

**MOODBIDRI – 574225**


**2023-24**

# ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY

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## CERTIFICATE

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This that the Mini-project work entitled **"DEVELOPMENT OF PORTABLE TYPE SOIL QUALITY MEASURING DEVICE"** is the bonafied work carried out by

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In partial fulfilment for the award of the Bachelor of Engineering in Agriculture Engineering of **Visvesvaraya Technological University, Belagavi** during the Academic year 2023-24. It is certified that all correction and suggestions indicated for internal assessment have been incorporated in report deposited in the department library. The project report has been approved as it satisfies the academic requirement in respect of project work prescribed for the said degree.

5-8-2024

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## ABSTRACT:

Agriculture is the backbone of our nation. 75% of the Indian population is depend upon the agriculture. Due to the rapid increasing of the population, it may pass 9.4 billion by the year 2050 the agriculture production has to be increased. In order to ensure the food security for the fast-growing population. Farmers are destroying the soil by applying the huge number of fertilizers in order to get more yield to reach the demand. The soil condition plays a major role in crop growth and development. Soil properties such as nitrogen, phosphorous, potash (NPK), pH level of the soil, moisture content present in the soil and type of the soil are the major factors which affects the crop growth and development. These all should be supplied to the soil in sufficient manner. If the supply is less the production is less, if the supply is more it may lead to soil degradation. So, in order to supply the fertilizer in an efficient manner the farmer has to know the NPK percentage present in the soil and pH level present in the soil. In this study we will conduct a literature review on the use of sensors and some other methods and we will identify some of the research gaps it may helpful for the further development of the technology to find out the soil properties.

This paper gives the review of sensing technology and the other present methodologies which are used to determine the NPK, content in the soil and pH level of the soil.

**Key words:** Degradation, Fertilizers, NPK, Sufficient, Technology.