# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

JNANA SANGAMA CAMPUS, BELGAVI - 590018

MINI-PROJECT
REPORT

## "SOALR POWER OPERATED INTERCULTURAL SEED DRILL"

**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 INSTITUTE OF ENGINEERING AND TECHNOLOGY

## MIJAR, MOODBIDRI, D.K-574225

### DEPARTMENT OF AGRICULTURE ENGINEERING

**CERTIFICATE**

This that the Mini-project work entitled "**SOALR POWER OPERATED INTERCULTURAL SEED DRILL**" is the bona-fied 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.

3/8/24

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# ABSTRACT

Agriculture is a vital sector, providing food security and employment for a significant portion of the global population. Small-scale farmers, who form the majority, often face challenges such as limited access to affordable tools and machinery, leading to labour-intensive and inefficient practices. This paper presents an innovative solution: a robotic seed drill powered by rechargeable batteries and supplemented by solar energy. The robotic seed drill aims to automate the seeding process, reducing reliance on human labour and improving precision and productivity.

The system includes a sturdy mechanical structure with battery-powered motors for propulsion and seed drilling. An IoT module is integrated into the design, enabling remote monitoring and control, which allows farmers to manage and optimize seeding operations from a centralized platform. This enhances flexibility and real-time decision-making. The energy efficiency of the system is a key advantage, as it uses rechargeable batteries supplemented by solar energy, reducing environmental impact and operational costs.

The robust mechanical design ensures durability, allowing the seed drill to withstand diverse field conditions, essential for long-term viability in agricultural settings. Traditional agricultural practices are often labour-intensive and inefficient, leading to low productivity and economic hardship for farmers. By automating the seeding process, the robotic seed drill reduces labour requirements, allowing farmers to allocate their time and resources more effectively.

The integration of IoT capabilities provides remote monitoring and command, enhancing the overall efficiency of the seeding process. The design prioritizes energy efficiency, durability, and ease of operation, ensuring sustainability and cost-effectiveness. The use of GPS technology further improves precision in seed placement, promoting uniform growth and optimal yields. The robotic seed drill's rugged mechanical design ensures it can withstand harsh environments, making it a reliable tool for farmers.