# A Review Paper on Automated Seeding Agriculture Robot

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**Abstract** -Now a days robots are playing major role in every sector. the implementation of robot reduces time consumption and performs a task in much easier way. in the field of agriculture sector various automated devices, machines have been equipped, by using of a multipurpose agriculture robot, it can increase production and efficiency in the agriculture field. the robot is equipped with a seeding mechanism and irrigation system that can plant seeds at precise depths and spacings and irrigate crops based on soil moisture levels. Hence there is a need to develop the agricultural facilities by incorporating latest technological advancements. Conventional seeding process is time consuming and requires additional labor cost. In this project, an automated system is proposed for seeding as well as irrigation process in agriculture which reduces the labor cost. This system aims to increase the efficiency of the seeding process without affecting the nature of soil.

In this project, we are developing a automated seeding and irrigation system using agriculture robot with the help of a microcontroller, sensor, and CSM-dc motor. by incorporating these devices into the robot, which can perform operations like ploughing, seeding, irrigation and spraying. this robot can be operated from a mobile phone by creating a local WIFI hotspot using the Node MCU, ESP8266 microcontroller, and a web page is created to operate this robot. the ESP12e module is connected to the microcontroller and dc motors, which help to move freely during the seeding, spraying, and ploughing.

*Key Words*: seeding, irrigation, microcontroller, CSM-dc motor, automation.

## 1.INTRODUCTION

Indian economy is based on agriculture. The backbones for food production are farmers. Traditionally farming is done by human being with the help of bullock carts, tractors and tillers etc. In modern era, the main problem in agricultural field include lack of labor availability, lack of knowledge regarding soil testing, increase in labor wages, wastage of seeds and more wastage in water. To overcome all these disadvantages the robot for agriculture has been developed. The main aim of agricultural robot is applying robotic technology in agricultural field. The agriculture robot efficiently performs ploughing, seeding and mud leveling automatically.

## 2. Introduction to Robotics

Robotics is an engineer's way to do a complicated job or a repeated job after developing a system and a program to run it. There are many fields in robotics like control, AI, machine vision, modeling. Every field is inter-related to one another and it depends on your interest. Each field in robotics has a different purpose but if you combine them all you a final output. AI - This section is the brain of the system. It has all the coding and programming part of the robot. All the feedback and the equation are calculated here in this section. This involves all the mechanism behind the robot. Machine Vision - This is different than the other two above section. As the name suggest it is the technology on how things will change on continuous feedback of that is being provided to the AI using vision technology. Robotics is a large and a vast topic.

For many people it is a machine that imitates a human-like the androids in Star Wars, Terminator and Star Trek: The Next Generation. However much these robots capture our imagination, such robots still only inhabit Science Fiction. People still haven't been able to give a robot enough 'common sense' to reliably interact with a dynamic world. However, Rodney Brooks and his team at MIT Artificial Intelligence Lab are working on creating such humanoid robots. The type of robots that you will encounter most frequently are robots that do work that is too dangerous, boring, onerous, or just plain nasty Most of the robots in the world are of this type. They can be found in auto, medical, manufacturing and space industries. In fact, there are over a million of these types of robots working for us today.

## 3. LITERATURE SURVEY

**"Muzammil Hussain, S.P. Gawate, P.S. Prasad and P.A. Kemble"** develops a Smart Irrigation System with Three Level Access Mechanisms in which operation of the system necessitates minimal manpower. This system only provides water whenever the ground humidity falls underneath the threshold value. The soil proportion just at root zone kept constant to some degree by giving direct water transfer to something like the root zone, as a consequence less water is used by the roots and this system aids in reducing overall watering, crop damage and price of output. This method is known to have been cost-effective and helps for the production of agricultural products and crops in water scarce areas. It needs very little maintenance and can be adjusted according to change in climate.

**'Pallaviram Sure, Sudarshan S K, R Keerthana, Nandan K N, Meghana K and Rahul D S'** develops "IoT based solar powered Agri Bot for irrigation and farm monitoring" in which agribot functions as an IoT system designed for remote farming management and irrigation. The designed agribot was solar powered and hence when it is not irrigating, it collects solar energy. The Agribot introduced in this paper could irrigate farmland and transfer collected data at different geographical locations towards the cloud. The data is then analyzed and interpreted in the cloud for useful knowledge and prediction.

**'M.B. Srinivas and Akhila Gollakota'** develops 'Agribot - A Multipurpose Agricultural Robot' in which the robot is turned on and put in the area. As a result of this its wheels are able rotate, to begin plowing some other switch is switched on. This cause the spiked wheels to rotate, after that it starts plowing that occur simultaneously as when the robot goes forward. The seeds are stored in a container, when the spike wheels will be in the forefront. This container has a hole drilled within bottom that is sealed with a thin metal or steel sheet. This sheet serves mostly as flip flop and allows seeds to fall at regular intervals. There are two ways to control the flip-flop, the first is by using stepper motor and the second is by using relay.

**Sudheer Kumar Nagothu** develops 'Weather based Smart watering system using soil sensor and GSM' in which ARM microcontroller was initially equipped with weather information from an Indian metrological page. With this information, expected sixday weather information could be interpreted such as temperature and rainfall. Based on this information this system will control the flow of water. Drip irrigation or sprinkler irrigation may also be used to water the plants. The 15-watering device can be turned on or off by data analysis out from the soil detector, human input and web forecast data. The commands created by automation system will be over written by human input. A mobile application or just the human's personal computer can be used to have inputs. The results will be sent to smart watering device via GPRS.

**Mirsad Hadžikadić 2 and Samir Avdaković 3** This paper presents a review of the service robots in medicine with an emphasis on service robots for disinfection in medical institutions. It is shown and described how more and more disinfectant service robots are contributing to a very simple, fast and effective disinfection in medical institutions. Work of the service robot with all necessary components for its function as well as its good and bad sides are in details elaborated and clarified. The aim is to demonstrate the application and use these service robots in medical institutions. Use of these service robots reduces the risk of infection, cost of traditional cleaning and disinfection, and most importantly acquires confidence and security in medical facilities.

**K Durga Sowjanya, R Sindhu, M Parijatham, K Srikanth, P Bhargav** IJARIIE ISSN(O)-2395-4396 discuses on the look, design and model of the autonomous agriculture robot. The main motive is to decrease the labor force and provide efficient way for it. It implements the use of Microcontroller and Bluetooth technology and helps in digging the soil, seeding, leveling the soil and then water spraying over the soil. The paper highlights how the robot can be controlled using just a simple Android app. The advantages of such simple model is that it is compact, lightweight and economic for the farmers also.

**Charan Singh A. Patil, Sunil U. Nyati**. This paper proposes Multifunctional mechanical vehicle for agriculture application. In the past agriculture was accepted out using furnish seized tools and as the civilization progressed people started using animal driven tools, after that self governing age robots for agriculture. Vehicle. In the developed countries the automatic agriculture has reached to a complete state but in the

increasing countries like India is still developing. The mechanized agriculture autonomous agri robots for improving agriculture efficiency must increase to meet the expectations demand of the ever-grooving human being population to rise above it we were developed robotic.

**F.A. Adamu, B. G. Jahun and B. Babangida.** In this paper authors draws our attention towards the performance factor of a power tiller. Among those demand for light weight power tiller was sought out most. Fuel efficiency and field capacity such parameters are also discussed. We take those points in consideration while designing a sustainable multifunctional agricultural vehicle. The lowest values of soil penetration resistance below the cultivated profile were determined with the cultivators equipped with chisel shaped shares i.e., in the case of Fermat. These results have taken for our research basis.

## ACKNOWLEDGEMENT

We are delighted to present the initial project report on 'Automated seeding Agriculture Robot'. Our heartfelt thanks go to our internal guide for their unwavering assistance and guidance throughout the project. We are truly appreciative of their valuable suggestions, which proved to be extremely beneficial. We would also like to express our gratitude to the HOD, Dr. B. Vijaya Kumar, Guru Nanak Institute of Technology, Hyderabad, India, for their invaluable support and recommendations, which have been instrumental in the success of this project

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