

# VASAVI COLLEGE OF ENGINEERING



## MINI PROJECT REPORT

on

AGRIBOT

Automatic Mirchi plantation

**Submitted by:**

**BE 2<sup>nd</sup> year students, ECE.**

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# INTRODUCTION

Mirchi is a peppery fruit that is used in many dishes all over the world including India. It is usually added as a ingredient in the food to make it more spicy. It is even used for medical uses. India tops the chili production list after China, Peru, Spain and Mexico. Indian chilies particularly the one that is grown in Guntur district of Andhra Pradesh is very famous for its pungency and color. The substance that give chili pepper their intensity when ingested or applied topically are capsaicin. Chilies are dried to preserve them for long period of time which may be also done by pickling. Mirchi plantation has become difficult for many farmers as it requires labor who cost RS. 300 per day for work for seeding. And even ploughing for 2-3 times has become difficult. This is the problem we were given to solve and finally we tried to solve this problem using AGRIBOT.

# METHODOLOGY

The method used to solve this problem is to prepare a working model which can perform the following activities:

- Reduce work of labor .
- Ploughs the field.
- Machine moving forward and saves the time.
- Seeding process in regular intervals.

This project will help farmers so that they don't need to do rigorous work for planting.

# SCOPE OF WORK

We used a wooden plank as the main body and L clamps to connect tyres to the wooden Planck. We used four motors to run the tyres of the robot. We used two motor drivers which can control the speed of motors and the direction of robot. We used Arduino UNO which supplies power to motor drivers. We even used LIPO(power supply). We used gyro to turn exactly 180 degrees u turn. We used servo to drop seeds from funnel(which is made using 3d printing) in regular interval of time by closing and opening. We used funnel to store seeds and drop them.

# OBJECTIVES OF AGRIBOT

- The robot will first draw a thin line using a rod.
- Secondly it will drop seeds at regular intervals of time using servo.
- Then it will take u turn and again repeat the same this continues up-to a certain distance and takes the u turn.

# ARCHITECTURE

Agribot is a simple system and easy to understand. Programming (embedded c is the language used) plays a key role in the working of Arduino. Arduino controls the whole robot by taking power from the supply and delivering the output to motor drivers. The motor drivers perform the function of controlling the speed of the wheels. Gyro helps to turn exactly 180 degrees. These are some of the parts which play a major role in the working of agribot.

# MECHANISM

The code written is dumped into the Arduino. Arduino boards are able to read inputs-light on a sensor, a finger on the button-and turns it into an output.

Drops seeds at regular interval of time by providing opening to the funnel using servo. Servo motor works on PWM (pulse width modulation) principle which means it's angle of rotation is controlled by the duration of pulse applied to its control pin. Basically servo motor is made of DC motor which is controlled by variable resistor.

It even takes u turn using gyro where ever required.

Gyroscope is a device used for measuring or maintaining angular velocity. It is a spinning wheel or disc in which the angle of rotation is free to assume any orientation by itself. When rotating, the orientation of this axis is unaffected by tilting or rotation of the mounting, according to the conservation of angular momentum.



# PROBLEMS FACED

1. Based on the usage, when two different lipos are used to drive, the wheels were moving with different speeds.
2. When only one lipo with one motor driver was used the power driven was high due to which the motor drivers got damaged.
3. Angle detection for exact 180 degrees turn.
4. It was difficult to make the bot to move straight.

# BUDGET OF THE PROJECT

- Wheels(4)-85 each
- Motors(4)-325 each
- Gyro mpu6050- 150
- Motor drivers(6)-150 each
- L clamps(4) and screws and nuts-150
- Plough screw-50
- Hot glue gun filament-20
- Jumpers and IC 7812(2)-30
- Seeds-40
- Miscellaneous -200

**TOTAL- RS.3180**

# CONCLUSION

Finally we have arrived to this stage where our bot fulfills the task to plough . Seed the field automatically without much man power with simple bot which is easy to make using technology which in turn reduces farmers work and brings huge profits. Almost the problems faced was solved by the guidance of seniors and the faculty.