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Automatic Seed Sowing Machine

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Abstract - *Agriculture plays an important role in economic life. It is the backbone of our economic system. This project work focused on seed sowing processes and tried to solve the problem. Today's era is marching towards the rapid growth of all sectors including the agricultural sector. To meet future food demands, the farmers have to implement new techniques which will not affect the soil texture but will increase the overall crop production. This machine reduces the efforts and total cost of sowing the seeds. Sowing machine should be suitable to all farms, all types of corps, robust construction, also it should be reliable, this is a basic requirement of sowing machine. Thus made a sowing machine that is operated manually but reduces the efforts of farmers thus increasing the efficiency of planting also reduces the problem encountered in manual planting. This machine can plant different types and different sizes of seeds also it can vary the space between two seeds while planting. This also increased the planting efficiency and accuracy.*

Key Words: **Sowing Machine, Agricultural robot, Agriculture**

1. INTRODUCTION

Automation is a constraint in industries because it not only seeks to improve the quality of life for humans at both home and work, it allows the distribution of both quality products and services to be made available at faster rates and reduces downtime and human error. This proposed framework is to decrease seed manor time and increment the efficiency. Thinking about a case of a plant nursery, the time required is more for manor which is because of the seed bolstering process as seed nourishing is a talented activity. Pretty much every seed can develop so can't bolster at least two seeds in a single measure of a plate; henceforth causes loss of estates. The proposed work aims at minimizing the human efforts in plantation and to be done precisely. The mechanism is quite simple consisting of digging, feeding, and covering -up. The objective of this is to maintain some amount of distance between two seeds at the time of the sowing process most important is the effective use for automatic seed sowing with great competence and accuracy.

2. PROPOSED SYSTEM

The fig.1 shows that the block diagram of the proposed system. In the agricultural system, the more facilities to provides the farmer and accurate work. This system has a 4-wheel robot system. The seed sowing machine is developed which has a very little cost. Also, the unskilled farmer can be easily operated an automatic seed sowing system. The design and fabrication of a manually operated single-row Seed planter that is cheap, easily affordable by the rural farmers. The single-row Seed planter is very simple to use the various adjustments are made with ease, and it is maintenance-free. the seed sowing machine system, consist of battery-powered wheels and a dc motor inbuilt with those wheels.

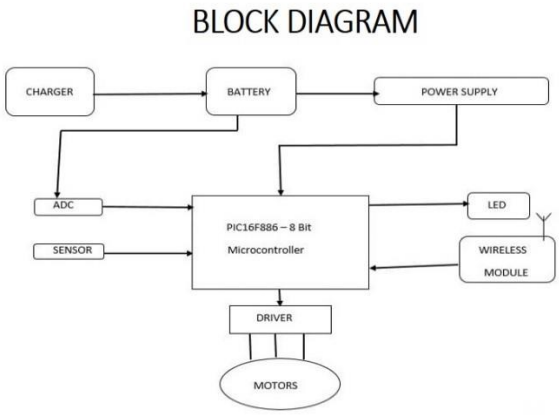

Fig 1: Block diagram of the proposed system

In this system, the seed storage tank is used. when the number of seeds is lacking it detects the level of storage seed and indicates by the alarm. When any obstacle comes in the in-front of the machine or diverts path the seed sowing machine can detect this obstacle very easily. In each complete rotation of the rotating wheel, some seeds fall from this seed drum and the seed plantation process can take place smoothly as well as without wastage of seeds. This system provides the entire facility and farmer sow the seeds very easily

3. PHOTOGRAPHS OF SEED SOWING MACHINE MODEL

Fig.2: Battery operated wheel

4. SELECTION OF MOTOR

Given: -

Size of wheel =100mm diameter

Total Wight of machine =8kg

The effort requires to pull the machine is assumed = 100N

So Maximum Torque T = Effort x Radius of wheel

Torque on drive shaft T = 100 *50

T=5000 N-mm

5. HARDWARE IMPLEMENTATION

The fig.3.show the circuit of PCB of the seed sowing system. The PIC16F886- 8 Bit Microcontroller placed with Top of the PCB. Also, near the LCD placed. The left corner is a power supply section. As well as the Relay is connected across the 12V to 1000uF capacitor, and also a 10uF capacitor across the ultrasonic sensor. The ultrasonic sensor pin trigger and echo pin connected across PIC16F886- 8 Bit Microcontroller circuit is connected to seed sowing machine. When an obstacle comes in front of the machine the ultrasonic sensor distinguishes that obstacle and indicates a buzzer.

Obstacle detection range <20cm References.

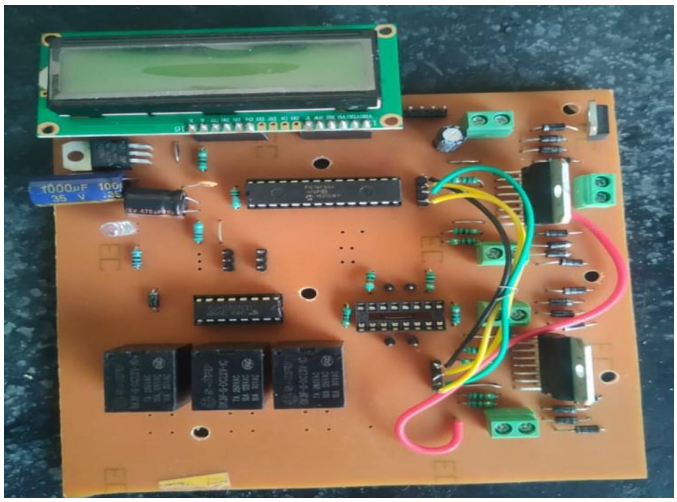

Fig.3: CIRCUIT OF PCB

The distance between two crops of different seeds:

Table 1.Different seeds and Distance

Seeds	Distance
Soyabean	18cm
Groundnuts	15cm
Jowar	12cm

6. CONCLUSION

In each complete rotation of the rotating wheel, there are seeds that fall from this seed drum, and the seed plantation process has taken place smoothly and without wastage of seeds. This seed plantation machine has great potential for increasing the productivity of the planting. Also, any obstacle comes in front of the seed sowing machine the ultrasonic sensor detects that obstacle and indicates the buzzer. Hence there is a need to promote this technology and made it available to even small-scale farmers at affordable prices.

7. REFERENCES

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