REVIEW ON ADVANCED SEED PLANTATION MACHINE

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ABSTRACT

India is developing country, 80% people are farmer in India. Nowadays, farmers in India are using new techniques in agricultural field. The conventional method for seeding is manual one. But it requires more time & day the tendency of manual work is going on reducing. The man power shortage is faced continuously. The instrumentation & control plays an important role. We develop a system which is very economical & beneficial. This system introduces a control mechanism which aims to drop seeds at particular position with specified distance between two seeds and lines while sowing.

Keyword:- *Agricultural operations, agricultural machinery, agricultural equipment, seed sowing techniques, seed sowing mechanism, farming system, robotics technolog*y.

1. INTRODUCTION

As we know economy dependency of our country is on agriculture. As India is agricultural country about 65 percent of peoples are farmers. In recent scenario number of changes is occurring in agriculture methodology like seed sowing, pesticides and irrigation. For developing our economical condition it must necessary to increase our agricultural productivity and quality also. Out of them Seed plantation is one of the most important and day-to-day job of the farmers. The conventional method for seeding is manual one but it requires more time and more efforts. The manual seed plantation method is used in the greenhouse which is not cost effective method. Multipurpose seed plantation machine is the integration of the mechanical, electrical and electronic system. This machine reduces labor cost and time for seed plantation at initial condition. This machine also saves the wastage of seed. The machine also drops every seed accurately as per given distance to micro controller and proximity sensors. This machine is multipurpose because it can also use in small farm for seed plantation with some low cost changes. In recent scenario number of changes is occurring in agriculture methodology like seed sowing, pesticides and irrigation. For improving our financial condition it should be necessary to improve our agricultural productivity and quality also. Out of this, seed plantation is one of the most vital and day-to-day job of the farmers. The traditional way for seeding is manual one but it requires more time and large work efforts.

Manually seed plantation method suffers from various problems. The advanced seed plantation consists of proximity sensor, timer, relay, DC motor, seed feeder, rotating wheel etc. The motor agricultural vehicle is provided with a rotating wheel which measures the distance covered by the vehicle. The distance is will be sensed by a proximity sensor. The specific pulses are generated. Proximity sensor is connected to timer for adjusting rotation of rotary drum. This timer is then connected to relay board. Then all connections are connected to DC motor supply. Seed feeder is provided in this system for dropping seed one by one in the farm. Before the seed is put in proper digging way is also obtained with the help of a projection given. It is a self driven barrier with geared DC motors. The DC voltage is given to motors. Out of these three, wheels the two are provided with motor drive and one is driven automatic, one more dc motor is provided to oscillate the rotary drum.

2. LITERATURE REVIEW:

[1] **Mayur Bawaskar:** In the current position most of the nations don't have sufficient trained labor specifically in agricultural section and it influences the development of creating nations. So it's an opportunity to robotize the division to defeat this issue. Agriculture is the foundation and spine of the Indian economy. About half of the total population of our country has picked agribusinesses as their chief occupation. The states like Maharashtra, Punjab, and Kerala, Assam are highly involved in agriculture.

[2] **Abdul rahman:** This paper shows the modern techniques provided for the use of tractors for ploughing the farm, production of pesticides, invention of tube wells etc. Since water is the main necessity in this scenario, techniques were discovered which would help in watering the field easily, consume less water and reduce human efforts. These revelations enhanced the way of life of farmers. Agro-Technology is the way toward applying the innovation advancement happening in day by day life and applying that to the agribusiness area which enhances the productivity of the yield created and furthermore to build up a superior Mechanical machine to enable the farming to handle which lessens the sum and time of work spent on one harvest. Subsequently in this work of task we chose to outline a superior mechanical machine which is accessible to the farmers at a less expensive rate and furthermore which can sow and seed the harvest at same time.

[3] **Sahana:** This paper represents a system which runs for improved agriculture process which involves farming based on the sector defined for various measurements of land space on robotic platform. The farming is done by the robotic system, depending on the dicotyledon crops (Ground nut, Peas, Beans etc) involving particular rows & specific columns. The various functions are operated in an single robotic platform such as Ploughing, Seed sowing, Liquid fertilizing and Water sprinkling. The infrared sensors find the obstacles in the path. The movement of the machine is predefined and the solar panels are placed to charge the battery, the power supply is used as a backup. Embedded C language is used in programming the micro controller. The micro controller is used to control and update the work processed by the agriculture robot which is performed by the system.

[4] **Trupti A:** This survey paper talk about Agriculture is the foundation of Indian economy. About half of the total population of our nation has picked agriculture as their main occupation. The states like Maharashtra, Punjab, and Kerala, Assam are very associated with farming. Everything began because of the effect of, "Green Revolution" by methods for which agriculturists came to think about the different strategies engaged with cultivating and the focal points in it. As hundreds of years passed, certain cutting edge systems were imagined in agriculture because of the advance in science. These cutting edge procedures incorporated the utilization of tractors for ploughing the field, generation of pesticides, creation of tube-wells and so on. Since water is the main necessity in this situation, systems were found which would help in watering the field effortlessly, devour less water and decrease human endeavors. These disclosures enhanced the way of life of ranchers. Agro-Technology is the way toward applying the technology advancement happening in day by day life.

[5] **Swati D. Sambare**: In India, close around 70% individuals are reliant upon agriculture. So the rural framework in India should to be progressed to decrease the efforts of agriculturists. Different number of activities is performed in the agribusiness field like seed sowing, weeding, cutting, pesticide spraying and so forth. Extremely essential and critical activity is seed sowing. Be that as it may, the present strategies for seed sowing are problematic. The types of equipment's utilized for seed sowing are exceptionally troublesome and awkward to deal with. So there is a need to create equipment which will reduce the efforts of farmers. This framework presents a control mechanism which plans to drop seeds at specific position with indicated separate between two seeds and lines while sowing. The drawbacks of the current sowing machine will be expelled effectively in this automatic machine.

3. EXISTING SEED PLANTATION MACHINE PROBLEMS

The existing sowing machine is too cost. It is not abundantly available in India It has a complex design.
Each seed distributor has the individual seed storage place. Subsequently, it prompts increment the cost of the machine. It isn't smaller in size and weight. Consequently, it is hard to transportation starting with one place then onto the next place.

In the current sowing machine each seed distributor needs separate seed storage spot and seed metering instrument. In this work we have taken this as issue since it prompts include the heaviness of the machine, builds cost of the machine, bulky in size.

4. PROPOSED ADVANCED SEED PLANTATION MACHINE

 The advanced seed plantation machine is shown below. It consists of three storage hoppers in which the seed to be crop are stored. Down to the hoppers, the rotary drum is situated. It is having a hole through out. During whole oscillating of drum the hole once comes below the outlet of the hopper and a seed is permitted to pass down wards, where it directly send to ground. Then the soil is spread over the seed so that the seed properly goes below soil.

Fig -1: Actual proposed setup

Fig -2: Actual proposed setup (top view)

Before the seed id dropped proper digging line is also formed with the help of a projection provided. It is a self driven barrier with geared DC motors. The DC voltage is given to motors. Out of three wheels the two are involved with motor drive and one is driven automatically. One more dc motor is provided to rotate the rotary drum. Near to the tire wheel a proximity sensor is placed. During one oscillating of tire, the sensor gives one logic pulse. This logic pulse sends to the switching circuit then to micro controller. It is assumed that the rotor will rotate once after receipt of one pulse. One seed is grounded and the process continues.

5. COMPONENTS OF ADVANCED SEED PLANTATION MACHINE

1. **Frame: t**here are three frames are made with M.S. angle 25x1 mm weight of 10kg bar height of each frame from its bottom frame 610 mm incrementally each square frame has 610mm x 610 mm dimensions. on which other components like hopper, disk, shaft etc are mounted

2. **Hopper**: The Hopper is made by M.S sheet which contains Seed. There are three hopper mounted upper and middle. Total six hoppers are used in this frame which has 5kg weight.

Fig -3: Seed hooper

3. **Shaft:** The shaft is arrange between upper and middle frame which is shown in 3d diagram. The length of shaft is 615mm with gear head motor

4. **Rotary drum. :** It is made up of fiber plastic material which is circular in shape. there are three rotary drum fitted on shaft at each has 160mm distance between them. Diameter of each rotating drum is 70.5 mm. A small slot is cut on the rotary drum .It picks the seed from upper frame hopper side of hopper and drop it to another side hopper at certain distance with help of programmable gear motor.

5. **Farrow:** This is multipurpose device used for digging soil as well as dropping in the seed in soil. It is made of circular hollow cut at an pipes at angular cutting rod attached with bottom side frame at 45 degree angle which mad up with the C. I. material which is used for cultivating the soil be for dropping the seed. The angle of dropping seed made for stopping excess seed at one place.

6. **Wheel**: The three fiber wheel attaché to frame according to soil condition. The each wheel has 90.5 diameters

7. **Electric Motor:** 2 DC electric motors are used in seed plantation machine. Each motor has 1\2 HP power with gear head runs at 30 r.p.m., and required 12Voltage to run motor.

8. Gear drive:- The helical gear attached with both motor. This gear gaving 60mm pitch circle diameter.

5. CONCLUSION

The main aim of this system is its Automatic method for plantation of the seeds. The seeds are been sowed in an appropriate sequence which brings about proper germination of seeds. This advanced method for sowing seeds utilizing a robot reduces the work of labors. In this system, the wastage of seeds is also been reduced to a greater extent. This system has been created for the sowing of seeds in a programmed way. Here with the assistance of a robot the seeds are been dispensed in the soil in a proper arrangement thus reducing the wastage of seed. Therefore after successful testing we touch base at the conclusion that the multipurpose advanced seed plantation is useful in saving labor and also economical.

6. REFERENCES

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