SOLAR TRACKING SYSTEM IN AUTOMATIC AGRICULTURE SEED PLANTER

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ABSTRACT

The real power required for machine equipment depends on the resistance to the movement of it. Even now, in our country 98% of the contemporary machines use the power by burning of fossil fuels to run IC engines or external combustion engines. This evident has led to widespread air, water and noise pollution and most importantly has led to a realistic energy crisis in the near future. Now the approach of this project is to develop the machine to minimize the working cost and also to reduce the time for digging and seed plantor operation by utilizing solar energy to un the robotic machine. In this machine solar panel is used to capture solar energy and then it is converted into electrical energy which in turn is used to charge 12V battery, which then gives the necessary power to a shunt wound DC motor. This power is then transmitted to the DC motor to drive the wheels. And to further reduction of labor dependency, IR sensors are used to maneuver robot in the field.

OBJECTIVES

- The main objective of this project is to feed the agricultural seeds in the lawn by using machines which operated by solar power.
- It also increase the accuracy of seeds in the lawn , if it is over fill in the specific place of the lawn.
- In this project producing no pollution because solar power is working with electrical energy so no pollution is present.

INTRODUCTION

In recent times, rural development has received a great deal of attention in development, in national plans, on political platforms and in the lending programme of most donor countries. This is because it has now been realized, that an improvement in the working and living conditions of the rural people is the first steps towards the achievement of a balance urban – rural development, which has come to be regarded as indispensable in any worthwhile development programme.

The Automatic seed sowing machine are developed. In this proposed work they have focused on seed sowing process. In this seed sowing process to avoid the drawbacks. The seed sowing machine is developed which has very less cost. Also the unskilled farmer can be easily operated automatic seed sowing system. Sowing is the process of planting seeds. An area or object that had seeds planted will be described as being sowed. Among the major field crops, oats, wheat, and rye are sown, grasses and legumes are seeded, and maize and soybeans are planted. In planting, wider rows (generally 75 cm (30 in) or more) are used, and the intent is to have precise, even spacing between individual seeds in the row; various mechanisms have been devised to count out individual seeds at exact intervals.

LITERATURE REVIEW

"a seed sowing machine: a review" mahesh r. pundkar ijess volume 3, issue 3. issn: 2249-9482, international journal of engineering and social science. summary:- stated that the seed sowing machine is a key component of agriculture field. high precision pneumatic planters have been developed for many verities of crops, for a wide range of seed sizes, resulting to uniform seeds distribution along the travel path , in seed spacing. "frontline demonstration on bullock-drawn planter enhances yield of soya bean crop. p.p. shelke international journal of farm science 1(2):123-128, 2011. concludes that bullock drawn planters are becoming necessity for sowing as the skilled workers for sowing are almost diminishing. planting distance and plant population are crucial factors in maximizing the yields of crops. "effects of sowing method and seed rate on growth and yield of wheat",

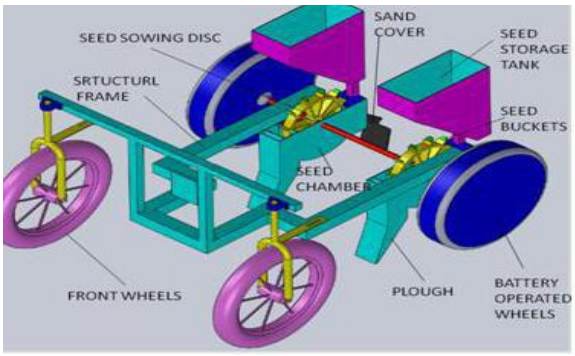
METHODOLOGY

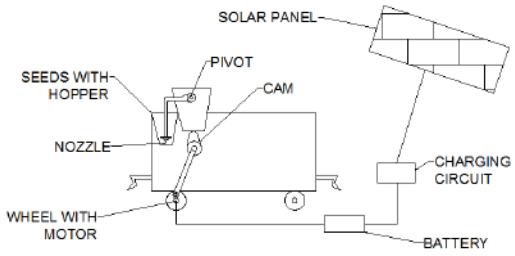
- Initially input the pitch at which it is expected to sow the seed using numerical key pad provided on the machine and initiates the seed sowing sequence.
- The data input is provided to the microcontroller, which is mounted in the machine to processes the input data.
- Depending on the pitch, the machine then moves through the distance specified in the pitch.
- The distance is calculated using rotary encoders.
- When the machine covers the respective distance the machine stops to sow the seed. When the machine stops the microcontroller signals the seed sowing mechanism to sow the seed at specified pitch.
- Seed sowing mechanism is responsible for sowing the seeds at a particular pitch. It consists of hopper in which seeds are added and a small plough which digs the field.
- When the machine stops at a particular pitch the seed from the hopper is sowed into the field.
- The machine can run using battery, which is charged through solar energy.

COMPONENTS USED

- SOLAR PANEL
- MOTOR
- CAM
- WHEELS

DESIGNDRAWING





WORKING

In our project we are going to perform automatic digging and seed sowing. Solar panel used to capture solar energy and then it is converted into electrical energy. This energy is used to charge 12V battery which is utilized by DC motors. We enter seed to seed spacing distance through keypad. After providing this distance wheel's motors start to rotate in clockwise direction then machine will start. These motors will stop after covering the provided distance then digging motor will start. Machine will dig the soil through mechanical assembly and stop the digging motor. At the same instant seed dropper motor starts to rotate. Seed is dropped in pit and cover the seed with soil. This process is continuously repeated till one row is completed.

ADVANTAGES

- Low cost and maintenance is very easy
- Light weight
- Multiple functions
- High capacity of hopper is used
- Pollution free

APPLICATION

- Seed spraying
- Fertilizer spraying
- Pesticide spraying

CONCLUSION

This project work has provided us an excellent opportunity and experience, to use our limited knowledge. We gained a lot of practical knowledge regarding planning, designing, purchasing, assembling and machining while doing this project work. We have done to our ability and skill making maximum use of available facilities. Thus we have developed a **"Solar Tracking System In Automatic Agriculture Seed Planter Machine"** which helps to know how to achieve great farm yield with simple mechanisms.

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