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Fabrication of Solar Seeds Sprayer

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ABSTRACT: The fabrication of seed/fertilizer sprayer is a new Innovative model which is mainly used to spraying the seed or fertilizer. The Power we are taking from motor to sprayer. The system consists of spray Cylinder pulley and motor arrangement. the power from Motor to arrangement which is rotates the sprayer blade in Cultivating land. In the agriculture field we will be spraying the seeds in order to have Good harvest of the particular plant. We are spraying the above mentioned Things by charging the battery with the help of electrical power supply.

I.INTRODUCTION

Agriculture has been the backbone of the Indian economy and it will continue to remain so for a long time. The government of India appointed a commission to assess the feasibility of increasing the crop productivity under prevailing Indian ecological conditions. In order to develop the standard of living of small farmers we should make the machines with low cost. Then only small farmers can implement the recent modern machines for farming purposes. The basic objective of sowing operation is to put the seed and fertilizer in rows at desired depth and spacing cover the seeds with soil and provide proper compaction over the seed. The recommended row to row spacing seed rate seed to seed spacing and depth of seed placement vary from crop to crop and for different agricultural and climatic conditions to achieve optimum yields and an efficient sowing machine should attempt to fulfill these requirements. In addition saving in cost of operation time labor and energy are other advantages to be derived from use of improved machinery for such operations. A traditional method of seed sowing has many disadvantages. Our proposed "seed sprayer machine "is used to sowing seed easily. In this project an attempt has been made to provide the low cost sewing machine and also it reduces the human effort.

II.LITERATURE REVIEW

T.RAVI,D.GOBIGANESH, R.GOKULAKANNAN, M.KANDEESWARAN, V.KESAVAN designed FABRICATION OF SOLAR SEEDS, SPRAYER, "International Journal of Engineering in 2015[1]. Today's era is marching towards the rapid growth of all sectors including the Agricultural sector. To meet the future food demands the farmers have to implement the new Techniques which will not affect the soil texture but will increase the overall crop production. In This project an attempt has been made for the "Design and fabrication of solar seed sprayer Machine". In this technique seeds in a hopper get sprayed by means of fan or blower directly to land without human effort. By this process the seed is feed to land at the time of plough .The main Benefit of using this method is to reduce the time of seed to the land and reduced human effort. Usually the manpower is needed for sowing a seeds by using this machine there is no need for Human power. This system does not require any additional power source to run the fan because here solar panel is employed as a power source.

Relevance to current Research

KINDRE MANOJ TAJANMUKHdesigned FABRICATION OF SOLAR SEEDS SPRAYER, "International Journal of Engineering[2] in2013. This dissertation provides information about the various types of innovations done in seed sewing machine available for plantation and fertilizer sprayer. The seed sewing machine is a key component of agriculture field. Today's era is marching towards the rapid growth of all sectors including the agricultural sector. To meet the future food demands the farmers have to implement the new techniques which will not affect the soil texture but will increase the overall crop production. This dissertation deals with the various sowing methods used in India for seed sowing and fertilizer spraying. The comparison between the traditional sowing method and fertilizer spraying and the new proposed machine which can perform a number of simultaneous operations and has number of advantages. As day by day the labor

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availability becomes the great concern for the farmers and labor cost is more this machine reduces the efforts and total cost of sowing the seeds and fertilizer spraying. In this dissertation we are development of solar powered seed sowing and fertilizer spraying machine.

Relevance to current Research

WOLF AND SMITH (1979) entitle as "DEVELOPED A HAND HELD ROTARY SPINNING SPRAYER"[3]. Tests were conducted in two different carrying positions and travel patterns in the field conditions and also generalized the models developed by earlier researchers and found large discrepancies between predicted spread pattern and an experimental distribution owing to ignoring particle interactions. For this reason, they suggested a corrected method by adjusting the simulation input parameters to fit the experimental data. In addition, they reported that the angular velocity of the disc, the position of the orifice, shape of the orifice opening, and the mass flow have a major influence on the shape and the width of the spread pattern.

Relevance to current Research

APHALE ET.AL conducts a INVESTIGATE PARTICLES TRAJECTORIES ON AND OFF SPINNER SPRAYER[4] (2003). He conducted experimental and analytical study to investigate particles trajectories on and off spinner spreader. They use sixteen different granular fertilizers the experiment data for on spinner trajectories generally lie between the analytical models for the pure rolling and pure sliding condition using a sliding friction coefficient of 0.5. The utilized an ultrasonic transducer to determine the velocity and direction of particles leaving a spinner spreader. He found that the friction coefficient between a particle and the spinner plate and vane is a significant variable; however, obtaining representative values for this variable for use in on-spinner models is difficult. The researchers identified the most important parameters that affected the 'landing area' such as the mass flow rate, the disc radius, the disc rotational speed, the orifice radial dimensions and the vane pitch, and presented calibration curves for the individual parameters. They suggested that the model, which considers particle interaction, improves simulation results and requires fewer calibrations.

Relevance to current Research

DEEPAK PUROHIT, GOVERDHAN SINGH Designed A REVIEW PAPER ON SOLAR ENERGY SYSTEM, UditMamodiyaPoornima College Of Engineering, Jaipur.[5] When A Suitable Light Of Certain Frequency (I.E. E=Hv Energy Of Light Depends On Its Frequency) Is Fall On A Special Metal Like Silicon, Electrons Get Some Energy Of Suitable Frequency Which Is Greater Than Work Function [Work Function Is Minimum Energy Required By An Electron To Emit From Metal Surface. So There Is No Photoelectric Emission Possible Below Work Function ($W \leq E$) And Emit From The Conduction Band And Come Out From Metal Surface. Like That Other Electron Come Out And Form A Big Unit Of Charge Flow Which Is Responsible For Electric Current. First, The Projects Tend To Reduce The Overall Cost Of The Energy Technology As Large Scale Utilization Of A Particular Technology, In General, Tends To Reduce The Cost Of That Technology.

III.METHODOLOGY OF PROPOSED SURVEY

In our project we are going to use the cheapest method by solar seed sprayer particular items to the agriculture field. We have designed and developed a system called seed sprayer. It is simple construction made by our mechanical model in this model we have used arrangement for rotate the sprayer blade in high speed. Seed Sprayer blade is coupled with the motor. When the engine is started the blade starts to rotate. Due to the pressurized air released through the blade the sprayer starts to spray the seeds from the hopper. The battery operates the fan the seeds can be sprayed all the way through. The funnel is provided to drop the seeds.

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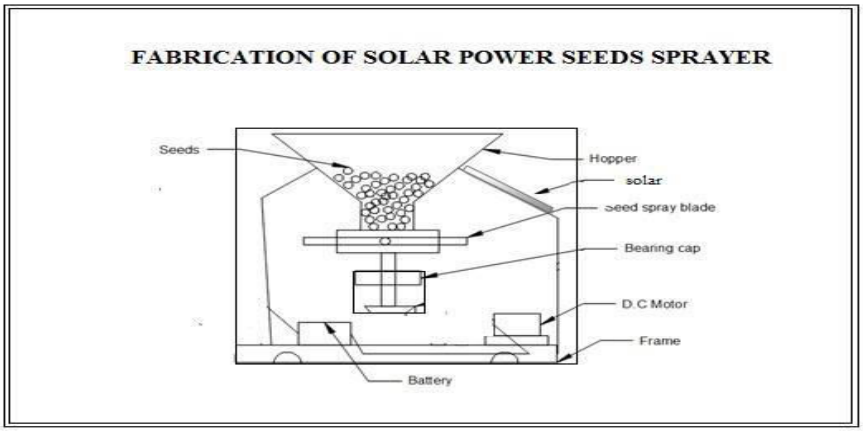

Figure.1 Fabrication of solar power seeds sprayer

SPEED CONTROL

The speed control is anelectronic circuitthat controls and regulates the speed of anelectric motor.It may also provide reversing of the motor anddynamic braking.Miniature electronic speed controls are used in electrically poweredradio controlled models.Full-size electric vehicles also have systems to control the speed of their drive motors.

Figure.2 Speed Control

An electronic speed control follows a speed reference signal (derived from a throttle lever joystick or other manual input) and varies the switching rate of a network offield effect transistors(FETs). Byadjusting the duty cycleor switching frequency of the transistors the speed of the motor is changed. The rapid switching of the transistors is what causes the motor itself to emit its characteristic high-pitched whine especially noticeable at lower speeds.

Different types of speed controls are required forbrushed DC motorsandbrushless DC motors.A brushed motor can have its speed controlled by varying the voltage on its armature. (Industrially motors with electromagnet field windings instead of permanent magnets can also have their speed controlled by adjusting the strength of the motor field current.) A brushless motor requires a different operating principle. The speed of the motor is varied by adjusting the timing of pulses of current delivered to the several windings of the motor.

WHEELPLADE

In its primitive form a wheel is a circular block of a hard and durable material at whose center has been bored a circular hole through which is placed anaxlebearingabout which the wheel rotates when amomentis applied by gravity ortorqueto thewheel about its axisthereby making together one of thesix simple machines.

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When placed vertically under a load-bearing platform or case the wheel turning on the horizontal axle makes it possible totransportheavy loads when placed horizontally the wheel turning on its vertical axle makes it possible to control the spinning motion used to shape materials (e.g. apotter's wheel)

Figure.3 wheel plade

When mounted on a column connected to a rudder or a chassis mounted on other wheels one can control the direction of a vessel or vehicle (e.g. aship's wheelorsteering wheel)when connected to a crank the wheel produces or transmits energy (e.g. theflywheel).

IV.CONCLUSION AND FUTURE WORK

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 feel that the project work is a good solution to bridge the gates between institution and industries we are proud that we have completed the work with the limited time successfully. We are able to understand the difficulties in maintaining the tolerances and also quality. We have done to our ability and skill making maximum use of available facilities. Thus we have developed a "SOLAR POWER SEED SPRAYER" which helps to know how to achieve great farm yield with simple mechanisms. The application of this machine is very high when compared to the cost of the machine. By using more such techniques Sprayer costs employing indigenous technologies these devices can bring a revolution in the modernization of Indian farming.

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