



DESIGN AND FABRICATION OF MULTIPURPOSE AGRICULTURAL SOLAR OPERATED SEED SOWING MACHINE

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ABSTRACT

Agriculture is the backbone of Indian economy. Agro-Technology is the process of applying the technology innovation occurring in daily life and applying that to the agriculture sector which improves the efficiency of the crop produced and also to develop a better Mechanical machine to help the agriculture field which reduces the amount and time of work spent on one crop. Hence in this work of project we decided to design a better mechanical machine which is available to the farmers at a cheaper rate and also which can sow and seed the crop at the same time. This project consists of the better design of the machine which can be used specifically for sowing of soybean, maize, pigeon pea, Bengal gram, groundnut etc. For various agricultural implements and non-availability of sufficient farm labor, various models of seed sowing implements becoming popular in dry land regions of India.

KEYWORDS:- seed sowing machine, performance detection, solar panel, solar power, agriculture.

I. INTRODUCTION

India record of progress in agriculture over the past four decades has been quite impressive. The agriculture sector has been successful in keeping pace with rising demand for food. In areas where 'Green Revolution' technologies had major impact, growth has now slowed. New technologies are needed to push out yield frontiers, utilize inputs more efficiently and diversify to more sustainable and higher value cropping patterns". At the same time there is urgency to better exploit potential of rain fed and other less endowed areas. Given the wide range of agro ecological setting and producers, Indian agriculture is faced with a great diversity of needs, opportunities and prospects. Future growth needs to be more rapid, more widely distributed and better targeted. These challenges have profound implications for the way farmers' problems are conceived, researched and transferred to the farmers.

II. METHODOLOGY

We can control the machine using mobile phone using bluetooth. There are buttons like Fwd, Back, Left, Right, Seeder on/ off. The Solar panel use to charge the battery in day time and we are doing one electric charging option too if solar not available.

III. DESIGN CALCULATIONS

Wheel Diameter = 7 Inch
Wheel Width = 1 Inch
Chasis = Length 600 mm
Width 300 mm
Wheel Shaft 80 mm
Motor Load Capacity = 1 kg N/m² @12 vdl
Motor Speed = 30 RPM
Complete Structure Weight = 20 kg
Motor Torque = 1 kg N/m²
Machine Speed = 10 kmph
RPM = ((60 * speed)/(3.14 * diameter of wheel)) = 0.35m/s
Solar Panel Voltage = 12 V

IV. PROPOSED DESIGN MODEL

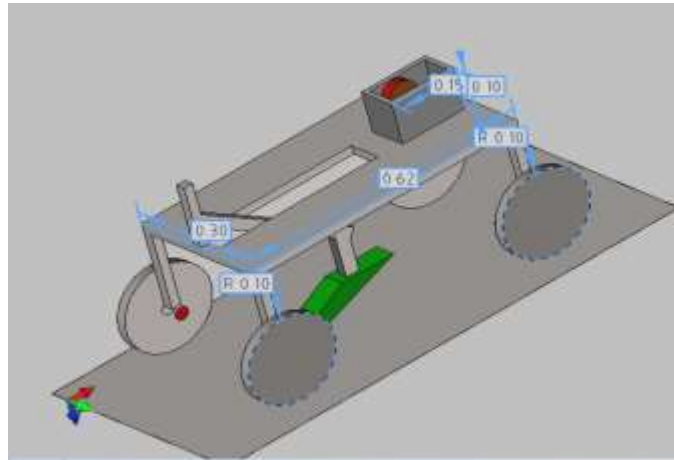


FIGURE:- 3D VIEW OF SOLAR OPERATED SEED SOWING MACHINE



FIGURE:-ACTUAL IMAGE OF SOLAR OPERATED SEED SOWING MACHINE

V. CONCLUSION

In order to design and develop an autonomous seeder for fertigation farm has been successfully conducted. All the subsystems such as navigation systems and spraying systems are included. Although the navigation part has been tested, the autonomous pesticide sprayer robot can be wirelessly navigated by android app. For future works, the spraying pressure of the autonomous seeder robot will be tested and the electronic circuits need a waterproof structure. Therefore, the isolation of the electronic component should be done well by separating each electronic component in the container box to prevent it from being damaged if the flooding or leakage happened inside the robot.

VI. REFERENCES

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