

CROP CUTTING MACHINE

¹P. MAHESH BABU, ²G.KARTHIK REDDY, ³K.RAVI KIRAN, ⁴SRITHA, ⁵V.SHARATH

¹Asst. Professor, MECH Department,CMR College of Engineering & Technology

²Asst. Professor,ECE Department,CMR College of Engineering & Technology

³Asst. Professor, ECE Department,CMR College of Engineering & Technology

⁴⁻⁵B-TECH,Dept.of CIV, CMR COLLEGE OF ENGINEERING & TECHNOLOGY

Abstract

This title represents the concept for design and analysis of crop cutter. The crop cutting is important stage in agriculture field currently in India farmers used conventional methods for the crop cutting i.e., cutting the crop manually it is a lengthy and time consuming process this project aim is to design and analysis of small field crop cutting machine for crops of small height like paddy, wheat, jowar, millets, ragi, etc. Crop cutting machine is a mechanical device it can be used to cut grass, small weed and can be used for cutting the dry stalls of grain break. It required less human effort and its very reasonable for middle class farming as it is not complicated structure it can be easily operated by unskilled labor or farmer. It's a machine consists of a blade mortar and a power supply unit with a handle to make it easy for work. When we compare crop cutting this machine has a capacity to cut the crop faster and it makes the easier and simpler. It can be used in any size of farm.

1. INTRODUCTION

Agriculture is the backbone of India. In India agriculture has facing serious challenges like scarcity of agricultural labor, in peak working seasons but also in normal time. This is mainly for increased nonfarm job opportunities having higher wage, migration of labor force to cities and low status of agricultural labor's in the society. The crop cutting is important stage in agriculture field. Currently Indian former used conventional method for crop cutting i.e. cutting crop manually using labor but this method is very lengthy and

time consuming crop harvesting is last stage in farming which takes maximum time of farmer among all farming process. In India harvesting is generally done manually. Thus our intention is toProvide farmer a "crop harvester in agricultural approach". This machine consists of simple mechanism make to run by a dc motor which will be economical to farmer and will take less time for harvesting operation crop harvesting is a process of cutting the crops close to the ground or pulling the plants when they are ripped out. It includes cutting the stems of coral

crops like paddy, wheat, jawar, grass etc. Close the ground. In our country it is generally done by sharp sickle. On the basis of large no. Of this crop harvester are in use at today date, which are available at different shape and size and on different power supply. Since the they are costlier keeping in to consideration the economic ability of our farmer it is required that is should be simple and should fulfill the same intension which are achieved by “crop harvester in agriculture approach”. This machine is made to run by a dc motor with the help of battery having speed of nearly 1500 rpm.

2. RELATED WORK

Various approaches have been proposed for improving mechanized type of crop cutter in agriculture field. Designing a cutting machine to harvest grains more efficiently. The research work focusing on harvesting operation to the small land holder to cutting varieties of crop in less time and at low cost by considering the factor as power requirement, ease of operation, field condition, time of operation and climatologically condition. To increase the productivity and profit. How to cutting reduce the cost and how to solve the problem comes from workers.

3. IMPLEMENTATION

In this project the idea is to make the mechanization of small scale crop cutter. The machine is used to cut crops for small scale farmers different parts of a machine will be mounted on a strong rod. it's a machine consists of a blade motor and a power supply unit with a handle to make it easy for work. When we compare crop cutting this machine has a capacity to cut the crop faster and it makes the easier and simpler. It can be used in any size of farm. Construction of the cutter: a dc motor is fixed at an end of the steel rod with the help of the clamps and by using screws to fix the things together and a rechargeable battery is fixed at the other end of the rod or at the handle. Connect dc motor and the battery using a switch and place the switch near the battery where it is easy to access. Make a rod into a c shape and fix it near the blades. Take a steel sheet and curve it according to the size of the rod and make sure that the sheet should not touch the motor or the blades.

4. EXPERIMENTAL RESULTS

We already have a crop cutting machine or harvester or combine harvester is an adaptable machine created for effectively harvesting crops in the fields. The machine focuses to combination of cutting and collecting the crop for small scale farmers. Different parts of a machine will be mounted on strong chassis. The wheel will

be attached to this chassis. The petrol engine is mounted on the chassis which provides the power to the wheels to move by chain drive and gear. you can also use it for cutting dense undergrowth, unwanted weeds, pruning trees, and trimming hedges and garden grass. It is a heavy machine with a motor.



1. This system reduces the cost of harvesting up to 60-70 % as that of conventional method.
2. It is suitable for small scale farmers having 2-5 acres of land area.
3. Ease maintenance and ease to operation.

4. It also reduces the 50-60 % timing of harvesting as that of conventional method

5. It is economical

5. CONCLUSION

The crop cutting machine to develop is just concept. The machine operated by single labor. The machine will eliminate the labor problem in peak session for crop cutting period. This machine is helpful for the both the small as well as big farm.

6. REFERENCE

- <https://www.youtube.com/watch?v=PdrCGe1AIDQ>
- http://ijariie.com/AdminUploadPdf/DESIGN AND ANALYSIS OF CROP CUTTER_ijariie6907.pdf<https://www.projecttopics.info/Mechanical/design-analysis-of-crop-cutter.php>
- <https://www.ijert.org/design-and-fabrication-of-crop-cutting-machine>
- <http://www.ijaiem.org/Volume6Issue5/IJA IEM-2017-04-27-41.pdf>