FABRICATION OF CROP HARVESTER

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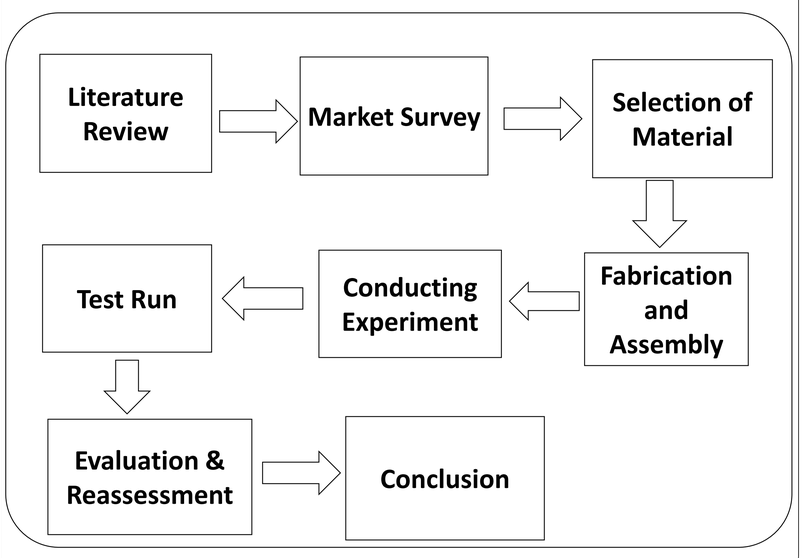
Introduction

Agriculture forms the backbone of our country economy; about 55% of citizen is depending on agriculture. Thus developing our country means providing our farmers with more “Sophisticated” and “Advanced Tool” which would decreases overall time required for the task and the task will become more easy and convenient. In India harvesting is generally done manually. Crop harvesting is last stage in farming which takes maximum time of farmer among all farming process.

Project Objectives

1.To study principle of crop harvester.
2.To study the design structure of crop harvester.
3.To study and calculate the power transmission.
4.To assemble the crop harvester.
5. To perform the experimentation.
6. To check performance of the crop harvester

Methodology



Results and Discussion

From the working of this demo crop harvester, the following results are obtained:

1. We have successfully fabricated Crop harvester.
2. The engine runs at 3600 rpm and the blades rotate at 900 rpm in theory. But it was found that the belts and pulley were not able to sustain that high amount of power so the engine and blades were reduced to around 3000 and 700 rpm respectively.
4. The cutters cut 4.5 inches from the base of the crop

The HCS(High Carbon Steel) blades were found to be ideal for the fabrication of this harvester. They were cheaper and nearly as effective as the higher priced HSS(High Speed Steel) blades

5. The crops are cut in a single smooth rotational motion
6. The harvester was found to be effective in running nonstop for long time without any major issues like overheat and high fuel consumption
7. It has low maintenance cost and is user friendly
8. This harvester cannot be used for cutting grass and weeds. It is so because they do not have the required thickness and mass required. For the crop harvester to be effective the crop stalks should not be very thin and have very less mass. And also, the blades are not effective in cutting very thick sized crops like sugarcane. It can be used for cutting tuar, bajra maize etc

IMAGES

Conclusions

From this project-Fabrication of Crop Harvester, certain conclusions can be drawn effectively.
This is a simple mechanical machine. It is uncomplicated, easy to use very economical, does not require much manpower and can easily be operated by unskilled labour. Apart from that it is reasonably safe too. Thus certain criteria have to be fulfilled by this machine to reach the farmer’s goal. The quality of the stalks of crop cut, per hour running cost of the machine, the per hour cutting capacity of the harvester, manpower required, wastage if any, low maintenance cost.

References

[1]. “Design and Development of manually Operated Reaper” Mr. P. B. Chavan, Mr. D. K. Patil, Mr. D. S. Dhondg.(IOSR-JMCE)
[2]. “Fabrication and performance test of an Ultraportable Crop cutter” Mr. G Maruthi Prasad Yadav, GMD JaveedBasha IJRSET

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