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Fabrication of Engine Operated Weeder

Mr. Sumeet A. Deshmukh[1], Mr. Akash P. Mandulkar[2], Mr. Anurag G. Choudhari[3], Mr. Sagar G. Kawale[4], Mr. Vivek D. Waghmare[5], Prof. Bhavesh A. Bohra[6]
[1, 2, 3, 4, 5]*Final Year Student,* [6]*Assistant Professor, Mechanical Engineering*
DES'sCOET Dhamangaon (Rly), Maharashtra, India

Abstract: ***As the situation of Indian farmer to increase the fertility and productivity of per unit area of that land it is essential to have vital agricultural implements which farmer can use and allow them to use for custom hiring. As an agricultural purpose weeding is essential operation. It may cause 30 to 60% crop yield as delay and carelessness in weeding operation. To overcome this problem we introducing an alternative solution that is "engine operated weeder". Because of this machine we are trying to reduce human efforts with less maintenance cost.***
Keywords: agriculture, effort, machine, power, weed

I. INTRODUCTION

Weed control is one of the most important aspects in the present agriculture. There are various methods for weeds such as mechanical, chemical, biological and cultural. As compare to chemical weeding mechanical weeding is more use because of expensiveness, hazardness of weedicide. Due to the loose soil surface which keeps the better aeration and moisture conservation mechanical weeding is used. The tools fitted in these weeders are either directly to the handle. The weeding tool attached with wheel is generally used for intercultural in between rows of crops and wheel assists in guiding the implement and in maintaining the proper depth. The present weeder cannot be provide the constant cutting. Dynamic load vary with work rate and static load is the effect of gravity. In manual operated weeder numerous types of cutting blades are used. It is continuously push type weeders like v shape is generally used because of its tool geometry.

The selection of cutting blades is based on soil properties. Mechanical weeders are very few to fragment the land. Farmer feels that conventional hoes are very heavy as compare to the manual operated weeders are available. Generally human and animal power is used to control the weed. Weed control by mechanically loose the soil surface while removing the weeds between the crops. Manual weeding is the slow process but it gives optimum output. The aim of the project is to construct and test engine operated weeder, to provide the best opportunity for the crop to establish itself after planting and to grow vigorously up to the time of harvesting. The aim of the project is to design, construct and test manual weeder, to provide the best opportunity for the crop to establish itself after planting and to grow vigorously up to the time of harvesting.

A. Objective of Study

1) To understand the most common damaging weeds and observe the yield.
2) To determine the abundance and distribution of weeds of validate the existence of common weeds and others.
3) Estimate the range of loss due to lower population and increased the cost.
4) Growing cycle between weed and crop is being determined.
5) To understand the conditions under which the weed competition could be more severe.

B. Scope of Study

1) The approach of treating crop and soil selectively according to their needs by small autonomous machines is the natural next step in the development of precision farming.
2) By taking a system approach, we can develop a new mechanization system that collectively deals with all crops agronomic needs in a better way.
3) The agricultural chemical revolution have the ability to selectively manage weeds in cropping system with chemical design to kill on contact or movement within the plant.

C. Benefits from Study

1) Weeding maintained the yield by removing the unwanted grass from the yield.
2) By maintaining the yield it reduces the cost of weed control as well as it reduces the pollution.

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3) It breaks the soil crust and covers the large area in less time. It also gives nearly complete weed control.

II. CONSTRUCTIONAL FEATURES

Different component of engine operated weeder are

A. Body

Figure 1**:** Body

The body is a supporting member of machine. The engine is mounted on this body at front side. The handle is attached to the front side of the engine. The blade is attached backside of this body.

B. Engine

Figure 2**:** Engine

Engine is a device which is used to run the machine. For the transmission of power differential is attached to the engine.

C. Shaft

Figure 3**:** Shaft

Shaft is a rotating element which rotates by the chain drive and for smooth rotation of shaft pedestal bearing is used.

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D. Chain drive

Figure 4: Chain drive

Chain drive is used to transmit the power from engine to the rear wheel. The chain sprocket is on the shaft which is helpful for the rotation of the shaft.

E. Blades

Figure 5: Blades

Blades are the component which directly interact with soil and as such have major impact on the operation of the weeds. The blades which we are using is (8*2) inch.

F. Wheels

Figure 6: Wheel

It is the wheel used the direct the weeder machine. Also the director wheels are providing support the weeder machine.

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III. WORKING

Figure 7: Engine operated weeder

A. Initially start the engine with the help of crancking. We used the (175cc two stroke petrol engine).
B. The differential is used for the forward movement of the machine.
C. The chain wheel is there in which the chain is mounted on that and the chain is on the sprocket and that is on the shaft.
D. Shaft rotates , the driving wheel is attached to itself. So the wheels are also rotate.
E. The blades are mounted on the back side of the machine. When forward motion occurs, the blades are also start moving because the blades are attached rigidly to the body.
F. And hence weeding is done with less effort and less cost.

IV. ADVANTAGES

A. It requires less time for weeding.
B. Labour wages are completely neglected.
C. It also reduces human and animal efforts.
D. More land can be weeded than conventional method.
E. It is best suitable option in the absence of animal for weeding.

V. DISADVANTAGES

A. Fuel consumption is more.
B. While using this, the vibrations are more because of engine.
C. For proper weeding additional weight is necessary.

VI. APPLICATIONS

A. It is used to remove the trash.
B. It is used as alternative weeder over animal drawn weeder.

VII. CONCLUSION

A. From the above study the verdict is out that the weeding rate is short time and reduces the human effort.
B. And we think, it is best suitable option for all the farmers due to shortage of bullock's.
C. It will save the time consumed as with the uprooting of the weeds directly it takes longer durations of time to grow again.

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BIOGRAPHIES

Mr. Sumeet A. Deshmukh
He was born in Dhamangaon (Rly), Dist. Amravati, Maharashtra, India in 1995. He completed his Diploma with First Class Division in Mechanical Engineering from L.A.M.I.T. Dhamangaon(rly) and pursuing B.E Degree in Mechanical Engineering from Sant Gadge Baba Amravati University (SGBAU), Amravati, India, in 2014-2017.

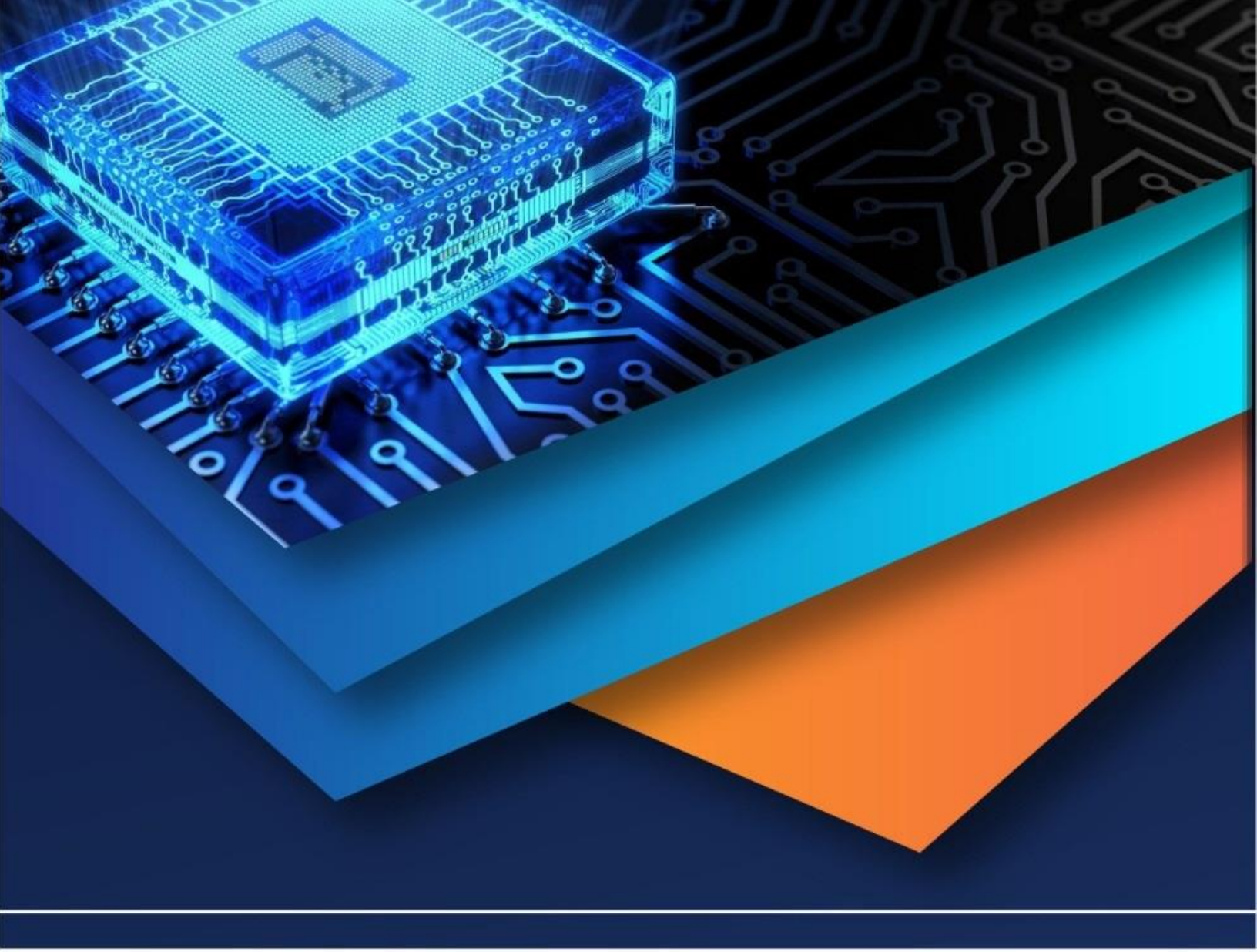
P. Mandulkar
He was born in Virul (Ronghe), Dist. Amravati, Maharashtra, India in 1993. He completed his Diploma with First Class Division in Mechanical Engineering from L.A.M.I.T. Dhamangaon(rly) and pursuing B.E Degree in Mechanical from Sant Gadge Baba Amravati University (SGBAU), Amravati, India, in 2014-2017.

Anurag G. Choudhari
He was born in Dhamangaon (Rly), Dist. Amravati, Maharashtra, India in 1995. He completed his Diploma with First Class Distinction in Mechanical Engineering from L.A.M.I.T. Dhamangaon(rly) and pursuing B.E Degree in Mechanical Engineering from Sant Gadge Baba Amravati University (SGBAU), Amravati, India, in 2014-2017.

Mr. Sagar G. Kawale
He was born in Patur , Dist. Akola, Maharashtra, India in 1994. He completed his Diploma with First Class in Mechanical Engineering from Govt. Poly, Murtijapur and pursuing B.E Degree in Mechanical Engineering Sant Gadge Baba Amravati University (SGBAU), Amravati, India, in 2014-2017.

Mr. Vivek D. Waghmare
He was born in Amravati, Dist. Amravati, Maharashtra, India in 1995. He completed his Diploma with Second Class Division in Mechanical Engineering from Prof. Ram Meghe Polytechnic Badnera Dist. Amravati and pursuing B.E Degree in Mechanical Engineering from Sant Gadge Baba Amravati University (SGBAU), Amravati, India, in 2014-2017.

Prof. Bhavesh A. Bohra
He completed his B.E. in Mechanical Engineering from Ram Meghe Collage of Engineering Badnera, Amrawati in 2012. He also completed his M.E. in CAD/CAM from Amrawati in 2015. He registered for PhD. He has 4 years work experience as Assistant professor in DESCOET.



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