

## IC ENGINE OPERATED WEEDER MACHINE- A REVIEW

Aniket Shriniwas Naphade

Student, Department of Mechanical Sandwich Engineering  
Indira College of Engineering & Management, Pune

Sushil B. Chopade

Assistant Professor, Department of Mechanical Sandwich Engineering  
Indira College of Engineering & Management, Pune

**Abstract:** India is well known as agriculture country. The population of our country largely increasing day by day. Thus the increase in population agriculture space area get divided into small parts. Now a days it becomes difficult to introduce advance technology equipment and machineries in shell part of agricultural land.

In India most of the farmers are using the conventional farming method for doing their all the agriculture work. So that time and money both are west. It is observed that Indian farmers are show in adopting the new technology due to the cost because yet which are the new technology are developed are highly costly.

In the IC ENGINE OPERATED WEEDER MACHINE which is definitely useful for farmer to apply in small part of agricultural land. Of course it is economical to purchase and maintain it. In this machine we have use IC engine of sufficient capacity which develop the forces as we required. For running this machine which is operated with the help of bullocks. This machine is more efficient and less consuming than the other one.

**Keywords— 2 stroke IC engine, weeder blades, frame, gears, shaft, chain drive, wheels**

### I. INTRODUCTION

Most of the people in our country depends on farming for money. This business is a traditional for Indian people. India got a very good climate and soil condition which is useful for agriculture.

India is sub-continent and a variety of indigenious or old implements are in use in different parts of country for last so many centuries. Before effort made to introduced foreign implement, it was necessary that a survey of indigenious agriculture implements use in India should be undertaken.

It is facility that the Indian farmer is slow at adopting new machine so that he doesn't need them. There are certain places, we found that the concept are prices worthy but one common and vital lacuna. We observed in almost all previous work in that they lack any suitable technical design and are fabricated without going into designing details. So for overcoming all the above difficulties we have design a multi utility machine, in which we are use engine to drive it, instate of bullocks.

This design is quite simple, effective, flexible to implement in agriculture field and can be developed to perform multiple activities. This equipment is highly efficient, because it is made of light weight material and components so it should easily drive whenever required. It is multipurpose equipment. A suitable design not only save material and labour cost but also reduces time and weight of some components, thereby reducing cost which is an essential feature to be considered for Indian farmer because such equipment or not use by farmer owing loss of plant but by those who are small farmers owning 5 to 10 acers of land.

However the suggest design is done only for weeding purpose, due to paucity of time, but can be further developed for other operation like rotavator, sowing purposed and many

other operation. It construction is quite complex because we use IC engine in it but other parts of this machine is simple and it easy to manufacture and fabricate.

Its initial investment cost is higher, but once it manufactured, its maintenance and other cost is very laser. So the farmer afford to buy it.

As compare to other machine and equipment available, it require less maintenance and repair is quite easy and cheap. It is reasonable suited for farmers having more than 15-20 acres farm. Also it is suited for small farmers. Hence engine operated machine is most suited to the area where electricity is unavailable in large scale.

### II. LITERATURE REVIEW

1. Aditya Sirmour, Design and development of single row power weeder for rice, Indira Gandhi Krishi Vishwavidyalaya, Raipur.

Weeds:

Weeds are nothing but those unwanted plants which are grow with the crop and they compete with the growing crop for light, nutrients and water. For the controlling of weed it is essential to know about the weeds for the experimental study to fulfil the purpose of design and development of women friendly weeder.

Smith(1964) stated that inter cultivation is an operation that required some kind of tool that stir the surface of the soil to a shallow depth in such a manner that young weeds could be destroyed and crop growth promoted.

The weeders was found may 6, 1907, by five young women who wanted to belong to a garden club of their own not one of mothers. Their purpose was "To form a club for the study of any subject connect with gardens." Future members ware to be admitted, "On a condition that they owned gardens in which they were active workers." In 1913, now grown to 20 members, the weeders accepted invitation from the garden club of Philadelphia to join eleven other form the garden club of America.

Early weeders were expected to presented papers on garden subject at club meeting and 100 such papers had been presented by 1914, with title ranging from seeds, to soils, and from gardens costume to "How to get the best weeds." Weeders came out of their backyard often. In 1917 the trained and led a unit of the land army framerates, and in the 1940 they raised victory gardens. Later, the weeders provided years of work in Philadelphia committee of GCA, now a modal for inner city GCA project.

The young weeders of 1907 laid a path our subsequent activities. Like them, we are still learning and are active workers in our own and public gardens.(such as the entry gardens at Clive den) we strive to protect native flowers.

We do community planting such as the Strafford train station. We fund conservation scholarship to follow our moto, taken from a poem by long fellow and adopted by us in 1915. Learn to labour and to wait.

Holm et al (1979. Reprinted in 1991) has listed some 7000 plant that have displayed weediness in the world, but they have dealt principally with weeds of agricultural concern.

The major reference on the weeds found in PNG is the work of E.E. Henty and Prichard (1973), with later revision in 1979. 1983 and 1988. Henty and Prichard (1973) recorded 140 common weeds, with a few weeds added to the list in the later revision. Of the 140 plants, 50 are reported to have been recorded in New Guinea by 1890, when the plantation industry was starting. Of the 50 nine were known to the malison region, a biographical region, which Common Era and immediate prices the main island of New Guinea and immediate island to west and including the Malay Peninsula. Java and Borneo.

In Henty and Pritchard (1988), 33 weeds are listed as having been regarded guinea before 1891.

Weed removal is one of the major activities in agricultural. Chemical method weed control is more prominent than manual and mechanical method. It adverse effect on the environment are making farmers to considered and accept mechanical methods of weed control. Chemical weeding is most extensively used method of weed removal but these chemicals used for weeding are harmful to living organisms and toxic in nature. Research has been sustainable weed control strategies.

Weed removal by mechanical method is one of the methods frequently used these to remove the weeds from the agriculture field. Research has been conducted on economical methods for weeds from the agricultural field. Research has been conducted on economical methods for weed removal without damaging the crops. Weeding machine design and developed with intent of being operated in specific crop like tomatoes, corn and rice. Weeding machine like three row walking type one were developed and successfully to remove the weeds from rice.

The rate and effectiveness of weed removal depends on no of parameters related to machine performance parameters and soil properties such as types of cutting blades use, moisture content and the types of cutting blades like flat blades, spike tooth blades and curved blades on the performance of weeding machines. Mechanical weeding was found to be less effective when soil are wet during or after the weeding operation.

Weed control methods:

1. Chemical weeding
2. Mechanical weeding
3. Manual weeding
4. Biological weeding

**A. Mechanical weeding:**

2. BISWAS, H.S. 1980. WEEDING TOOLS AND IMPLEMENTS OF INDIA. TECHNICAL BULLETIN NO. CIAE/78/3, CENTRAL INSTITUTE OF AGRICULTURAL ENGINEERING, BHOPAL.

Biswas (1984) reported that the control of weeds is oldest far method of weed control though it received less scientific attention us compared to the other methods of weed control.

A mechanical device to remove the weeds from an agricultural land is known as weeder. A weeder may be

manual or animal drawn and tractor mounted or power operated.

In developed countries like USA, European countries, Australia and Israel large emphases has been placed on mechanization of the various agricultural process. For this number of machine have been developed and successfully implemented. Use of such machine in Indian agricultural scenario is difficult as the most the Indian farmers are small scale farmers as area under their control small.

Mechanical weeders range from basic hand tool to sophisticated tractor drivers or self-propelled devices. These may include cultivating tools such as hoes, harrows, tines and brush weeders, cutting tools like mowers, as well as implements like thistle bars that may do both. To wheeled pedestrian or working tractors are a smaller alternatives that can power a similar range of implements. Most machine large in size not affordable for medium and small scale farmers. Weeds from the agricultural field. Research has been conducted on economical methods for weed removal without damaging the crops. These machine are most intra row weeding machines which removes weeds within multiple crops row at once. Weeding machine like three row walking types one were developed and successfully to remove weeds from rise.

Weeding operation in India performed mostly by using tilling attachments available for tractors. These attachments through can only be used before sawing. These tillers are not used solely for the purpose weed removal. Power tillers of various types and sizes are also for weed removal. Most the design of such equipment are medium and large scale farmers for the weed removal. Most the design of such equipment are meant for general purpose used and such cannot be for inner row weed removal between two rows of the crop.

Machines meant solely for the purpose of weed removal are not easily available in India. Although some agricultural manufactures are making efforts and made certain equipment available which are mainly intended for weed removal on farms. These machines are again primarily intended for use before sawing and when are small.

With most mechanical weeding implements, operator skill, experience and knowledge and critical to success. Drawbacks of mechanical weed control include low work rates delay due to wet condition, and the subsequent risk of weed control failure as weed become larger.

Hence it is important to developed machine and implements which can perform mechanical weeding in an efficiency and cost effective manners to represent a viable alternative.

### III. METHODOLOGY

In IC engine operated weeder machine, we used 2 stroke IC engine of 145cc and torque of 9.81 N/M at 5000 rpm. It has 2 wheel situated on driving shaft, driving shaft is drive by engine means of gear and chain arrangement. On both ends of the driving shaft the wheels are attach with the help of bearing. And the bearing are fixed to the frame.

The weeding tool is attached at backside of frame. For proving force on the tool handle is welded on the tool. All the engine control are maintain from this handle.

When the engine is started, the driven axle is rotated with the help of chain drive due to which wheels are also rotate. The torque ratio is obtained by gearing arrangement which is supplied manually. High torque ratio is obtained at

low gear. As the wheel rotate machine start moving removing the unwanted grass from the farm. Engine speed is maintain by adjusting gear and acceleration. In this way weeding operation is perform.

#### IV. ADVANTAGES

1. Reduces the human report
2. Reducing the time of weeding operation.
3. It is quite simple in construction and flexible in operation.
4. Easy to operate.
5. Unskilled operator can operate this machine easily.
6. It is helpful for small area land owner farming having 5 – 10 acres.
7. Safely used.

#### V. CONCLUSION

In this paper we will try to reduce the human effort with the help of two stroke IC engine. The engine presented here serve the purpose of an economical lighter and flexible mechanism which could developed to perform multiple activities. The design presented is subject to entire needs of the small farmer. Hybrid vehicle reduce emission, increases efficiency and improve fuel economy also reduce pollution. This machine perform weeding for the more acers of the land than the conventional one. Our machine is more efficient, economical, more effective and less time consuming than that conventional weeder machine.

#### VI. REFERENCES

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