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"Reuse of Two Stroke Engine in Various Agriculture Application " Mohd Noaman Nasir jamadar[1], Prince wagheshwar [2] , Bhaskar madav [3] , Soham kulkarni [4]

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ABSTRACT

India is a land of agriculture in which farmers are the backbone of indian economy. This research work throw light on reuse of two stroke engine in various agriculture application. The main objective of the research is to help the farmers into their agriculture work ultimately reduction of operating hours in the farm. Spraying is an important operation during farming to protect the farm from insects, pests, fungus, in which various insecticides and pesticides are sprayed on the crops, also their is unwanted growth of weeds which harms the crops therefore various herbicides are also required to be sprayed on the open farms to maintain the quality of crops. In this research work the spraying unit is attached in reused two stroke engine. So this research work aims in design and manufacturing of sprayer and other such attachments used for agriculture operations and make it more economical.

1. Introduction

India is set to be an agricultural based economy in which approximately 75% of the population of India is dependent on farming directly or indirectly. farmers are using the Conventional equipment for the ages spraying, weeding etc. There is a need for the development of an effective spraying machine for increasing productivity. This paper suggests a model of automatic multi nozzle pesticides sprayer pump which will perform spraying at maximum rate in minimum time. Spraying of pesticides and insecticides are considered as very significant in controlling the insect and pest. Due to the accurate uses of agrochemicals leads to the increase in the quality and quantity of the crops. Off target spray deposition is the major problem associated if the proper spraying technology is not used,spray drift is the another problem faced due to improper spraying attachment, equipment, technology, nozzle sizes and operator skills. This research paper throws light that how good uses of spraying technology helps in increasing the productivity of the crop as well as refuses westage ogf agrochemical. In Conventional spraying methods with a lot of human interventions were associated in it hence if the operator is not skilled properly then lot of agrochemicals and fertilizers being wasted. Hence to avoid this better spraying attachment is provided which will help farmer to perform spraying of fertilizers with ease.

Fig 1.1 Reuse of two stroke engine in various application

2. Working of Mechanism

The movement of vehicle done with stroke engine and required speed is achieved. Spraying attachment is operated with a reciprocating pump and through nozzle spraying operation is done and required pressure is maintained. The quantity of spraying and speed of spraying can be adjusted. Operation of reciprocating motion is done by the power source (i.e. I.C engine, etc). Power source gives rotary motion to crank; with the help of connecting rod we translate reciprocating motion to piston in the cylinder (i.e. intermediate link between connecting rod and piston). When crank moves from inner dead centre to outer dead centre vacuum will create in the cylinder. When piston moves outer dead centre to inner dead centre and piston force the water at outlet or delivery value.

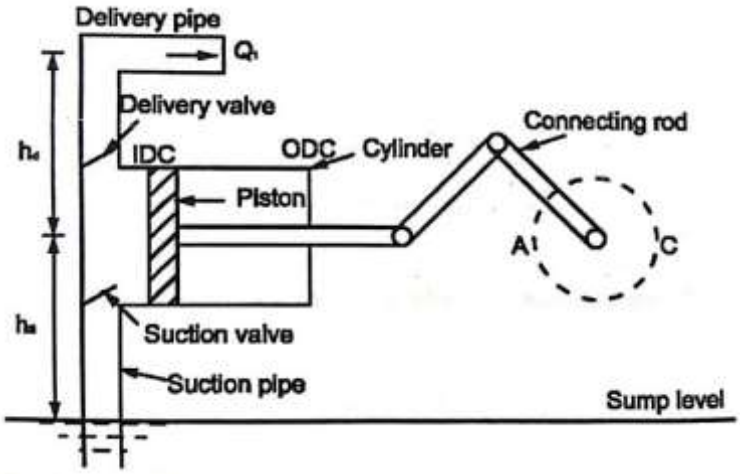

Fig 2.1 Reciprocating pump arrangement

3. Literature Review

Thorat, M. S., Jagdish Pathare, M., & Vinayak Kumbhar, In their research work they told that The equipment is purposely design for the farmers having small farming land. It is suitable for spraying as well as weeding at minimum cost for the farmer so that he can afford it. The equipment will results more beneficial when it is subjected to moist soil for weeding purpose, due to moist soil the weed cutter can easily penetrate and dig out the soil and hence will easily accomplished the weeding process. The performance of the equipment will increase when it is operated on the smooth surface or less uneven surface and also it will be more effective when it is used on the crops having nearly similar height and having the less space between two crops.

Sandeep H Poratkar and Dhanraj R Raut in his Development of Multinozzle Pesticides Sprayer Pump explained the suggested model has removed the problem of back pain, since there is no need to carry the tank (pesticides tank) on the back. As suggested model has more number of nozzles which will cover maximum area of spraying in minimum time & at maximum rate.

4. ADVANTAGES

- Variety of nozzles can be used
- Wide range of area can be covered for spraying
- With elimination of backpack machine human fatigue is reduced
- It is economical comparisons with other sprayers
- Consume less time compared to conventional sprayers
- Due to the automation process is fast.
- Flow can be controlled as per requirement by variety of nozzles.

5.CONCLUSION

A proposed design of mechanism is suitable, efficient and time saving. The reciprocating pump arrangement is used to pump the spraying material from the tank. Reuse of two stroke engine will reduce the cost of equipment . The pressure developed in the tank is as per the requirement and reduces the efforts to operate the sprayer.

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