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A Review on Agriculture Spraying with Weeding Process

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ABSTRACT: India is set to be an agricultural based country approximately 70 to 80% of population of India is dependent on farming directly or indirectly. Our farmers are using the same traditional methods and equipments for the ages. In our country farming is done by traditional ways, besides that there is large development of industrial and service sector as compared to that of agriculture. The spraying is traditionally done by labour carrying backpack type sprayer which is requires more human effort. The wedding is done with the help of bulls and mini tractor. So there is a need for development of effective spraying and weeding machine cum equipment for increasing the productivity. So to overcome these above two problems a machine cum equipment is developed which will be beneficial to the farmers for spraying and weeding operation.

KEYWORDS: Agriculture, Sprayer and Weeder, Farming, Equipments, Tractor.

I. INTRODUCTION

In the developing countries of Asian continent have the problem of the increase in population and demand rise in agricultural products. But still, the advancement in agriculture is not present at the farmers. Due to which they are still using traditional methods for agriculture.

Present day in agriculture the sprayers play an important role in spraying pesticide. Although sprayers varies like motorized, hand operated. Spraying pesticide is an important process in farming. Now days, there are many types of pesticide sprayer already in market. For the different types of pesticide sprayer there are have a different shapes, sizes, method to carry it but the function are same.

There is a need for the development of the effective spraying machine for the increase in productivity. Power sprayers are used for developing high pressure and high discharge for covering large area. Power sprayers are operated by electric motors. Most of these sprayers are hydraulic sprayers and consist of a power unit to drive the pump, pump unit which employs piston or plunger pump, pressure gauges, pressure regulators, air chamber, suction pipe with strainer, delivery pipes and nozzles.

Here we analyse some design and development of the flexible equipment which will be beneficial to the medium and small scale farmer for the weeding and spraying operations.

II. RELATED WORK

The mechanism or vehicle is designed and made to increase the advancement in agriculture. It is designed to overtake the traditional spraying methods by introducing advanced methods for spraying. The mechanical Agriculture Sprayer vehicle [MASV] has a great opportunity in agricultural technology. It can help farmers to increase agricultural productivity by increasing the output and decreasing the labour cost and also spraying time can be decreased. It is made to be used for the purpose of gardening and floriculture. et al. [1].

In agricultural sector generally farmer uses traditional way that is spray carried on backpack and spraying crop. This becomes time consuming, costly and human fatigue is major concern, these problems can be overcome by using agricultural reciprocating multi sprayer. It facilitates uniform spread of the chemicals, capable of throwing chemicals at the desired level, precision made nozzle tip for adjustable stream and capable of throwing foggy spray depending on

requirement. In our project we use slider crank mechanism to convert rotary motion into Reciprocating motion to operate the pump, thus the pesticide is spread through the nozzle. This work gives continuously Flow of pesticide at required pressure and height. et al. [2]

This paper reviews the machine agricultural pesticides sprayer with weeder, which has been designed and fabricate is useful to decrease the cost of machine, Labor cost by advancing the spraying method and Machine can be operated in small farming land around 5 acre 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. et al. [3].

Generally Indian farmer use to traditional way that is spray carry on Backpack and weeding is done by bulls. Which become times Consuming and costly this both problems over come by using Multi nozzle pesticides sprayer and weeder machine. For Better yield of crop multi nozzle spraying and simultaneous Weeding is must this papers attends to design such a flexible Sprayer and weeder. This work gives continuously flow of Liquid at required pressure, height and gives freedom of easy Engaging and disengaging weeder. This paper suggest a model Of manually operated multi nozzle spryer with weeder According to crop which will gives optimum results in less Time. Pushing mechanism required less effort and three wheel Mechanisms gives proper balancing of machine et al. [4].

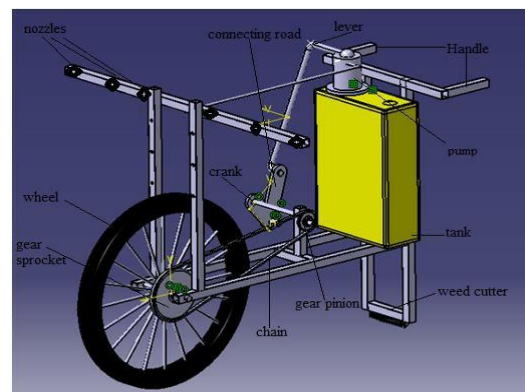
India is set to be an agricultural based country. Approximately 75% of the total population of India is directly or indirectly dependent on farming. There is a need for the development of the effective spraying machine for the increase in productivity. Power sprayers are used for developing high pressure and high discharge for covering large area. Power sprayers are operated by electric motors. Most of these sprayers are hydraulic sprayers and consist of a power unit to drive the pump, pump unit which employs piston or plunger pump, pressure gauges, pressure regulators, air chamber, suction pipe with strainer, delivery pipes and nozzles. et al. [5].

III. EXPERIMENTAL DESIGNS

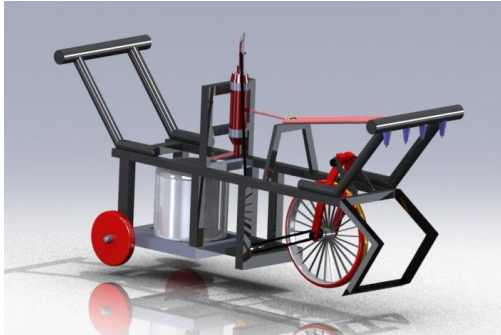
Figures shows the existing designs of agricultural sprayer and weeder. (a) Shows design of Mechanical Agriculture Sprayer Vehicle [MASV] ¹. (b) Shows the assembly model (3D AUTOCAD) design of the agricultural sprayer. The performance of the equipment will increase when it is operates on the smooth surface 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 crops².



(a)



(b)



(c)



(d)

(c) Shows the CAD model of agricultural pesticide sprayer. 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 crops³. (d) Shows the image of manually operated multi nozzle sprayer and flexible weeder. Upgraded design of manually operated weeder and sprayer which will be helpful for small land farmers. It consumes less time and saves money as compared with conventional spraying and weeding⁴.

IV. CONCLUSION

From this all data the mechanism or vehicles are designed and made to increase the advancement in agriculture. Here all equipments can help farmers to increase agricultural productivity by increasing the output and decreasing the labour cost and also spraying time can be decreased. It will be used for the purpose of gardening and floriculture etc. But, Mechanisation for spraying operation is costlier for specialised operations such as High pressure sprayer, Engine operated sprayer. Skilled labour required depends upon the complexity of the equipment machinery used. According to experimental view this all machines or designs could not give more efficiency because of less experimental data. This will give opportunity to improve machines efficiency by modification in designs and set up.

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