

DEVICE FOR AGRO PRODUCT SPREADER

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ABSTRACT

The art of growing plants for food is agriculture. Nutrients available in the soil determines the efficiency of growth of plants. These nutrients can be artificially increased by the usage of fertilizers. A machine that helps to feed plants with fertilizers will be a great source to increase the rate of agriculture. Our machine is designed to meet these needs. Solid and powder fertilizers can be fed to plants by our machine. Fertilizers of different sizes can be served with this single machine. The main advantage of this machine is that dimensions of the machine can be adjustable according to the requirement.

Key words : *solid fertilizer,uniformity, discharge,plant growth and agriculture.*

1. INTRODUCTION

Agriculture is a technique of growing plants, in order to increase the efficiency of agriculture fertilizers are used. Plants need several types of nutrients to thrive. Almost all the nutrients are present in soil, but due to cyclic agricultural process on the same land nutrients are depleted in that place. Therefore when further cultivation is done on the same land ,plants cant produce its foliage. Fertilizers replenishes the nutrients present in the soil. So proper selection and usage of fertilizers will increase the efficiency of the agriculture. Fertilizers have the advantage of predictability and reliability.

2. LITERATURE REVIEW

Now-a-days agriculture is being reduced, due to hard work required to grow plants. Therefore farmers must be provided with machines that reduces their physical power required to row plants. Fertilizers are used to stimulate the growth of plants. Fertilizers used are of two types one is liquid type and another is solid type. Fertilizers are designed with accuracy and reliability to provide necessary nutrients for plants. A number of spraying of machines are available for broadcasting liquid type fertilizers, but there is no machine for distributing a solid and powder type fertilizer. Our machine will be a great invention to broadcast solid as well as powder type fertilizer.



Fig 2.1 (liquid) sprayer

3. PROBLEM STATEMENT

- Manpower can not carried more than 10Kg.
- Uniform distribution is not achieved for manpower.
- Time taken is more.
- There is no devices available for solid fertilizer distribution.

4. OBJECTIVE

The main objective of our machine is to reduce the man power required to broadcast fertilizers over a field. It also aims at reducing the time consumption required for broadcasting the fertilizers. It aims to use the same machine for various types of plants. The distance between the plants may vary according to their planting type. Our machine can be used to provide fertilizers for plants irrespective of the distance between them. This can be achieved by adjusting the central distance between the wheels. Each plant is served with a separate discharging unit and it can be adjustable according to the requirement.

Not only reducing man power it also aims at proper discharging of fertilizer to the plants. The wastage of fertilizers such as scattering, been taken by wind can be reduced by the usage of our machine. It consists of several adjustable parts such as height and horizontal distances between the discharging units to complete the broadcasting of fertilizers. The physical contact between the human body and the fertilizers can be avoided by the usage of this machine.

5. 3D MODEL

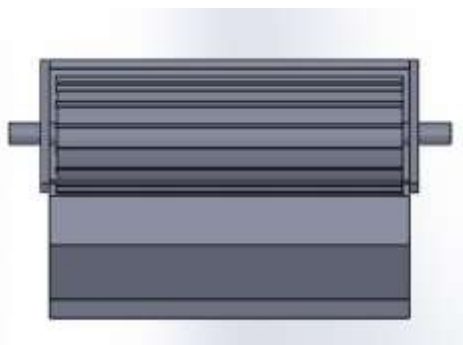


Fig 5.1 Front view of Mechanism

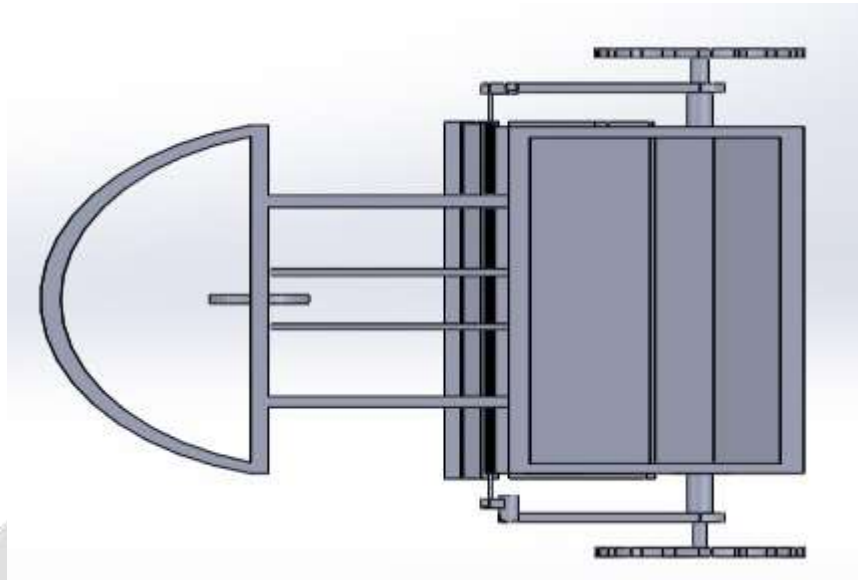


Fig 5.2 Top view of device

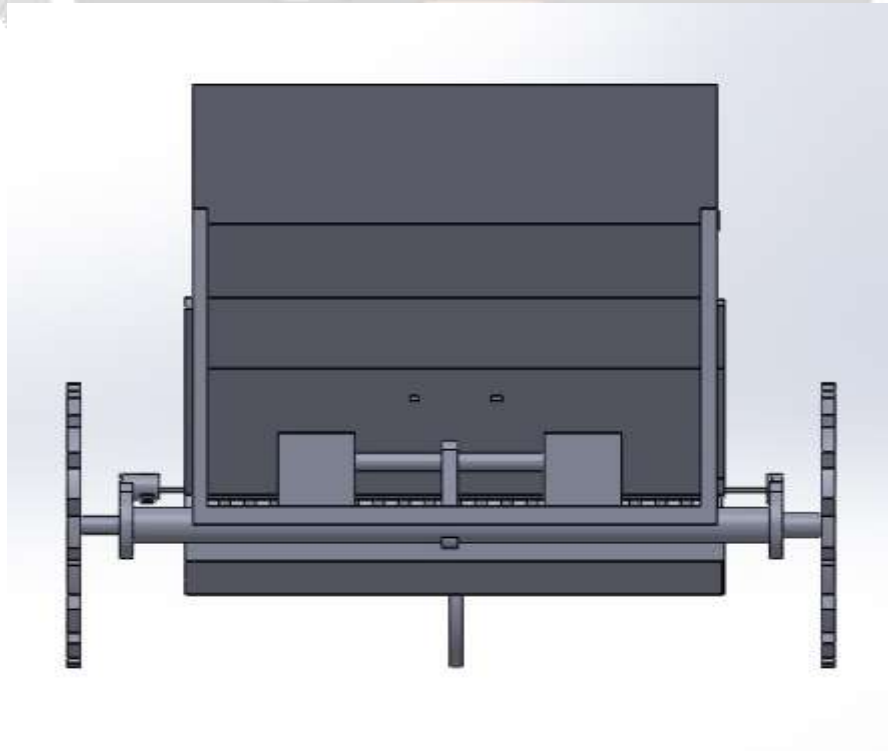


Fig 5.3 Front view of device**6. WORKING**

The device is initially stores the required amount of fertilizer at the top side. The sliding ways allows the required amount of fertilizer at the bottom due to vibration and gravitational force. The control tray is provided for allows the sufficient amount fertilizer at the dispenser section. An engine is supply the rotary motion to the wheels. The device consists of two front wheels and one rear wheel. The rear wheel is only for supporting and transportation purposes. The front wheel rotation is directly connected to the dispenser section, at some sprocket ratio. The rotary tray carries the sufficient amount of fertilizer in each cycle of rotation. The bottom diverged section allows dispensed fertilizer at the field.

7. MAIN COMPONENTS**Fig 7.1 gear****Fig 7.2 bearing****Fig 7.3 SS frame****Fig 7.4 chain with sprocket**

8. ADVANTAGES

- Uniform distribution is possible.
- overall Productivity increased.
- There is no physical contact between human and fertilizer.
- Time taken is reduced.
- Small size and low cost for manufacturing.
- Easy to transportation and control.

9. CONCLUSION

There exists a large variety of machines to broadcast liquid type fertilizer over a field, but there is no machine to broadcast solid type fertilizers, our machine will be very helpful to replace that situation. Our machine reduces the frequent between the human body and the fertilizer while broadcasting it. This machine aims at reducing the human work and the time required to feed fertilizers to the plants.

10. REFERENCE

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