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Fertilizer spredaing machine

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Abstract:- *India is agricultural based country. Our economy is also depends on agricultural related product. In the recent days it has been found that farmers are unable to grain more crop production by use of conventional agricultural methods. This project is based on manually fertilization process. A method is generated to spread the fertilizer over a fallow land by dropping the fertilizer over the spreader disc. The project design divided in to three level, top level, middle level, bottom level. Top level consists a hopper. Middle level consist a gear arrangement, chain drive and spreader disc. The bottom level consists wheel. The whole design is supported by frame and column.This project has solved the problem of traditional way of fertilization. This project has solved the problem of traditional way of fertilization. By using fertilizer spreading machine equal amount of fertilizer spread.*

Keywords:-*Agricultural,Fertilizer,Economy,fertilization Spreading.*

1. INTRODUCTION

India is agricultural based country. Near about 70% of people of our country are farmer. Our economy also depends on agricultural product. Now a day tremendous changes have occurs in conventional method of agriculture like seed plantation, irrigation system, pesticides & spray used for developing our economic condition. It is necessary to increase our agricultural productivity & quality also. Farming process includes many stages out of which fertilization is one of the best important stage , & which is not exploded up to the mark up till. Now a days we are used to spreading of fertilizer in traditional way which is the more time consuming, costly as well as not provide comfort to the farmer. So, we are going to design a manually operated machine for fertilizer spreading by taking into consideration the user group & their needs which helps to them to work easy & functional. So, using fertilizer spreading machine equal amount of fertilizer spread, Good fertility, less waste, Save time & reduce effort of farmer.

2. LITERATURE REVIEW

1.Nartode R.R.

Studied that, a method was generated to spread the fertilizer uniformly over a fallow land by dropping the fertilizer over the impeller disc. The system consists of a three wheels, two at the front and one at the back. These two wheels at the front are used to impel the fertilizer. The two hoppers are used. The fertilizer falls on to the impeller. The hopper is provided with flow control mechanism. In fertilization, the flow maintenance is necessary. Generally every crop should get sufficient amount of fertilizer. This condition is satisfied by Spring Mechanism. In normal conditions spring is not in tension and hopper is closed. As operator apply tension on the spring, controlling plate moves backward and hopper is open. Below this system there is an impeller. It is mounted on output shaft. Hooper opens on Impeller eccentrically and due to centrifugal action fertilizer spreads in the farm.

2.Vignesh.B.

Studied that, a method was generated to spread the fertilizer automatically over the agricultural land by dropping the fertilizer over the impeller disc. A 25cc engine is used to rotate impeller disc in which the fertilizer drains and spreads from hopper where it is introduced. In tractor mounted or manual system they carry four and three wheels respectively. But here two wheels are used in which the bigger front wheel is connected to engine through supporting wheel can be adjustable. The speed of wheel is varied by control lever connected through a cable. In this the fertilizer spreads only in front side of impeller while its back side 180 is covered. The size and width of the fertilizer is reduced to make it less weight and suitable for multi crops. From this method the cost fertilizer spreader is reduced by 50%

3.Arun Abraham.

Studied that, conventional spreading of fertilizers for small scale farming are by hand. It has some problems like uneven spreading of fertilizer, more time consuming, high human effort. The farmer have to carry heavy bags throughout the

spreading process. So it is necessary to develop a fertilizer spreader for small scale farming. The proposed fertilizer spreader uses a trolley type of mechanism. The main part is spreader disk, which helps for uniform spreading. The feed for the disk is from the wheels of the trolley using gear transmission. By using this spreader, a lot of time can be saved, human effort used for carrying heavy bags of fertilizer is reduced and wastage of fertilizer can also be avoided

4.S.Ramchandra.

Studied that, in India 73% of population is directly or indirectly depends upon the farming. Hence it is said that India is an agricultural based country but till now our farmers are doing forming in same traditional way. They are doing seed sowing, fertilizers and pesticide spraying, cultivating by conventional methods. There is a need of development in this sector and most commonly on fertilizer broadcaster technique, because it requires more efforts to spread uniformly over the entire field.The main objective of fertilizer broadcaster at sowing time is to uniformly distribute the fertilizer over entire field. The present trend in fertilizer broadcaster in India is based on manual method. It's time to replace the manual method by the motorised. It will decreasethe manual effort and time to spread the fertilizer over the entire field.The present project work is concentrated on design and fabrication of fertilizer broadcaster which will uses the solar energy to run the motor. This makes the work is easier, more efficient and less time to spread the fertilizer on farms.

5.Joao P.A.R. Cunha.

Studied that,the quality of fertilizer distribution process is important to the success of agriculture. This research aimed to study the distribution uniformity of fertilizers with spreaders capable of performing variable rate. Evaluations were carried out in different farms, in the Southwest region of the State of Goiás, Brazil. 13 longitudinal and transversal distribution profiles with 11 centrifugal spreaders were evaluated: five with limestone, two with gypsum, two with magnesium oxide, one with monoammonium phosphate (MAP), one with super simple phosphate (SS), one with chloride potassium (KCl) and one with formulated fertilizer (02-20-20). The collectors and the form of distribution followed the ASABE S341.3 standard (2006). The broadcasted distribution by centrifugal spreaders performed unevenly over the applied area. Therefore, application evaluation, in addition to correct regulation, should be performed frequently for each type of product, even on machines with capacity in variable rate.

Advantages:-

1 Increase uniformity of fertilizer spreading
2) Good crop growth
3) Less time require
4) Less human effort
5) Less waste
6) Eco friendly

Disadvantages:-

1) As the volume of hopper is abridged the repeated refilling of the hopper is mandatory.
2) More frication.
3) Lubrication is required.

Conclusion :-

Our goal was to build a system which is efficient to perform the spreading of fertilizer. It is suitable for all crops having a row pattern of cultivation. With the scope of improvement, the project is done to fulfill the demands of agricultural applications. The main objective of our project was to fulfill the need of farmers suffering from the problems of increasing labor cost for fertilizing. The draw backs in the existing spreader models are reduced in this system. Our future work is to make it in sensor based system. Due to even spreading growth of crops uniformly,less time required,less human effort and easy to working.

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