Design concept of fertilizer feeding and spraying machine

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Abstract: Nowadays tremendous changes have occurred in the conventional method of agriculture like seed plantation irrigation system, pesticides and spray used 140.7 million hectares available for sowing. Measure agriculture products include rice, wheat, oilseed, cotton, jute, tea. For developing our economic condition, it is necessary to increase our agricultural productivity and quality also. The farming process includes many stages out of which fertilization is one of the important stages and which is not exploded up to the mark up till now. So we are going to design a manually operated machine for fertilizer spreading by taking into consideration the user group and their needs which helps them to work easy and functional. Farming is the backbone of Indian economy, about 60-70% Indian population based on the field of agriculture and recent report they contribute 15-16 percentage to GDP agriculture developed up to the higher level in the last 40 to 50 years.

Keywords : Fertilizer feeding, Spraying machine

1. Introduction

We all know that the world is depending on agriculture, the project is related to agricultural service to spread fertilizer manually over the land. One of the strong sectors of the Indian economy. Around 70% of the population of India depends on agriculture. Nowadays come we are used of spreading fertilizer in the traditional way which is time-consuming, costlier as well as not provide comfort to the labor. Some tractor operated machines for the spreading of fertilizer are available. So, what we need is an alternative to traditional as well as tractor operated fertilizer spreading machine which will full fill all the requirements. A farmer faces the problem related to agriculture so using technology to cultivate the agriculture products and make it easy to solve the farmer problems. Indian agriculture growth is increasing year by year so improvement will take place and one of my projects is using raw materials pipes, belts, rectangular box and producing the hole at both ends and the needed fertilize keep into box front end of the box and other back and producing the two holes and are connected to PVC pipes through transfer to fertilizer into the field. Out of the various reason involved for the
development is control of number diseases on the plants. In modern farming, the usage of the use of pesticides is still increasing up to 80 to 85 percent of these pesticides are being applied on crops in the form of spraying which will maintain echo friendly approach. In the agricultural sector use of cheap and beneficial equipment for effective spraying for increased productivity which is very important for a better contribution to India’s GDP. supply of pesticides om crops, or for spraying insecticides, herbicides, or fungicides we must be sure if full fill our requirements.

2. Literature survey

[1] Sudduth K.A., Borgelt S.S., Hou J. (1995); Performance of a synthetic infusion sprayer concentrated pesticides through infusion sprayer to the noteworthy and proposed infusion at the individual spouts as a potential answer for abbreviate delays. Advancement of course of a framework that defeated the fixation variety issues announced by past specialists. [2] Sprayers Way T.R., Von Bargen K., Grisso R.D., Bashford I., I., (1992) Stimulation of synthetic application exactness for infusion Studies in this a self-sufficient versatile robot for use in bother control and maladies anticipation application in business nursery. They build up the robot stages capacity to effectively explore itself down columns of a nursery, while the pesticide splashing framework proficiently covers the plants equally with the set measurements. [3] Philip J. Sammons, Tomonori Furukawa, Andrew Bulgin, (2005) Autonomous Pesticide Spraying Robot for use in a Greenhouse Studies in the University of Nairobi build up the framework like radiating siphon is the most widely recognized non-positive relocation siphon. The yield structure this sort of siphon is impact by pressure. This siphon is perfect for conveying enormous volumes of fluid at low pressure. [4] Nartode R.R.: Studied that, a technique was created to spread the compost consistently over a decrepit land by dropping the manure over the impeller plate. The framework comprises of a three wheels, two at the front and one at the back. These two wheels at the front are utilized to affect the compost. The two containers are utilized. The manure falls on to the impeller. The container is given stream control system. [5] Vignesh.B: Studied that, a strategy was produced to spread the manure consequently over the rural land by dropping the compost over the impeller plate. A 25cc motor is utilized to pivot impeller plate in which the manure empties and spreads out of container where it is presented. In tractor mounted or manual framework they convey four and three wheels individually. [6] Arun Abraham.: Studied that, traditional spreading of composts for little scope cultivating are by hand. The proposed manure spreader uses a streetcar kind of system. The principle part is spreader circle, which helps for uniform spreading. The feed for the plate is from the wheels of the streetcar utilizing gear transmission. By utilizing this spreader, a ton of time can be spared, human exertion utilized for
conveying overwhelming sacks of compost is decreased and wastage of manure can likewise be stayed away.

3. Objectives

- It satisfy the need of ranchers experiencing the issues of expanding cost of preparation.
- Labour cost and accessibility as it is worked by single person.
- The downsides in the current spreader model are decreased in this framework.
- It has tackled the issue of conventional method of preparation by sparing practically half time.
- Also this machine is eco-friendly, simple to work with low capital expense and less investigates.

4. Methodology

In preparation the stream support is vital. For the most part every harvest ought to get adequate measure of compost. The venture is comprise of rectangular box, belts, PVC pipes, breaks, engine, battery, and so on. The container comprises of a gap at the top through that manure filled. What's more, at the base of the case two openings made these associated with the pvc pipes and the crate is slanted at base and consequently manure get travel through the channels to the field. The stream of compost is because of gravity. It is a machine for spreading the manure in nonstop and controlled stream at uniform rate. It can cover a section of land of ranch inside less time. Fertilizer spreader is manual machine for dropping manure close to plant roots. It is extremely helpful in vegetables and different yields. The box is slanted at base so manure can without much of a stretch stream out. The box comprises of one opening at the top and two gaps at the base. The focus opening is utilized to put the both manure likely fluid and strong. The compost is filled into the case through the top opening. What's more, the compost comes out through funnels and hoses by controlling slowing mechanism. At that time we set the taking care of compost amount by directing slowing mechanism. Battery source used to showering the fluid compost with assistance of engine. But battery source isn't utilized for taking care of strong compost.
5. Proposed model

Fig. 1 Fertilizer feeding model

Fig. 2 Flexible hose for liquid spraying
6. Drafting

Fig. 3 Drafting
7. Outcome of the proposed model

- Our objective is to assemble a framework which is effective to play out the spreading of manure and showering fluid.
- It is reasonable for all harvests having a line example of development.
- With the extent of progress the undertaking is done to satisfy the requests of utilization.
- The primary target of our task is to satisfy the need of ranchers experiencing the issues of expanding work cost for treating.
- Aim of this venture is to satisfy the errands showering synthetic compounds on the plants utilizing non-ordinary vitality sources.
- As we know 70% of populace of our nation lives in towns and their primary occupation is horticulture.
- This venture will help the ranchers of our nation.

References

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