

# Multi Seeds cum fertilizer sowing machine

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## Abstract

*A new seed metering device unit was designed the sowing machine should be suitable to all farms ,all types of crops,robust construction also it should be reliable this is basis requirements of sowing machine.Thus weare made sowing machine which is operated by power wider but reduce the effort of farmers thus increasing the efficiency of planting and also reduce the problem for seeds damages for this machine We can plant different types of seed and different sizes also we can vary the space between two Seeds while planting. This also increased the planting efficiency and accuracy we made it from raw materials thus it was so cheap and very useful for small scale farmers. For effective handling of the machine by any farmer or by any untrained workers we simplified it is design also it's adjusting and maintenance method also simplified all the component of machine worked satisfactory.*

**\* Keywords:-** Seeds, Design, development, seeds cum fertilizer drill

## \* Introduction

In india the rapid growth of all sectors including agriculture sector to meet the future food demands the farmers have to implement the new techniques which will not affect the soil texture but will increased to overall crop production. The various sowing machine are various method used in india, for seed sowing and fertilizer placement as day by day the labour availability become a great concern for the farmers and labour cost is more . Sowing is the process of planting seeds. An area or object that has seeds planted will be described as being sowed . Among the major field crops ,oats , wheat, rye are sown grasses and legumes are seeded and maize and soyabean are planted . In planting wider rows (generally 75 cm (30 in) or more) are used and the intent is to have pricise even spacing between individual seeds in the row ; various mechanism have been devised to countout individual seeds are exact intervals.

The different types of seed sowing machine which will be helpful for the agricultural industry to move towards mechanisation . Traditional sowing machine and it's methods include broadcasting manually opening furrow by a country plough and dropping seeds by hand and dropping seeds by hand,is practiced multiple row traditional sowing device with manual metering of seeds are quite popular with experienced farmers. In manual seeding it is not possible to achieved uniformity in distribution of seeds . Farmers may sow at desired seed rate but inter row and intra row distribution of seeds likely to be uneven resulting in bunching and gaps in field.

Many farmers use single vessel drill machine in which seeds and fertilizer are mixed and kept together. In such a delivery system seed and fertilizer fall together at fertilizer during germination the fertilizer is also not utilised by the crops root efficiently.

Seeds cum fertilizer sowing machine has a different utility in all such machines due to which the farmers started to work very easily earlier the farmer has to spend lots of time in sowing seeds but now a days their work is done easily due to introduction to seed cum fertilizer sowing machine.

To overcome the problem farmers started using sepearates devices to drill ferttand seeds. This method improved the yield of crops but also imposed expense of an additional drill drive on the y. The seeds drill is calibrated for seed sowing using the metering mechanism. The seed drill is placed on a level ground and jacked up to facilitate the rotation of grouby drive wheel freely

## 2. LITRATURE REVIEW

- D.Ramesh, H.P. Girishkuma [2014] mainly focused on the basic objective of sowing operation is to put the seed and fertilizer in rows at desired depth and seed to seed spacing, cover the seeds with soil and provide proper compaction over the seed. The recommended row to row spacing, seed rate, seed to seed spacing and depth of seed placement vary from crop to crop and for different agro-climatic conditions to achieve optimum yields. Seed sowing devices plays a wide role in agriculture field.
- Kyada, A. R, Patel, D. B.[2014] focused on the basic requirements for small scale cropping machines are, they should be suitable for small farms, simple in design and technology and versatile for use in different farm operations. A manually operated template row planter was designed and developed to improve planting efficiency and reduce drudgery involved in manual planting method. Seed planting is also possible for different size of seed at variable depth and space between two seed. Also it increased seed planting, seed/fertilizer placement accuracies and it was made of durable and cheap material affordable for the small scale peasant farmers.
- Roshan V Marode, Gajanan P Tayade[2013]focused on the seed feed rate is more but the time required for the total operation is more and the total cost is increased due to labour, hiring of equipment. The conventional seed sowing machine is less efficient, time consuming. Today's era is marching towards the rapid growth of all sectors including the agricultural sector. To meet the future food demands, the farmers have to implement the new techniques which will not affect the soil texture but will increase the overall crop production. Agriculture in India has a significant history. Today, India ranks second worldwide in farm output. Still, agriculture is demographically the broadest economic sector and plays a significant role in the overall socio-economic fabric of India.
- Kalay Khan, Dr. S. C. Moses, Ashok Kumar[2015] focused on manual method of seed planting, results in low seed placement, spacing efficiencies and serious back ache for the farmer which limits the size of field that can be planted. The cost price of imported planters has gone beyond the purchasing power of most of our farmers. This project work focused on the design and fabrication of a manually operated planter sowing for different crop seed that is cheap, easily affordable by the rural farmers.
- Nagesh B. Adalinge, Ganesh P. Ghune, Ganesh B. Lavate [2017] focused The main aim of sowing operation is to put the seed and fertilizer in rows at desired depth and seed to seed spacing, cover the seeds with soil. The row to row spacing, seed rate, seed to seed spacing and depth of seed placement vary from crop to crop and for different agroclimatic conditions to achieve optimum yields. The comparison between the traditional sowing method and the new proposed machine which can perform a number of simultaneous operations is carried out and has a number of advantages.

### \* Component of seeds cum fertilizer sowing machine

• Machine component	• Material
1. Frame	• Mild Steel
2. Seed and fertilizer box	• Mild steel sheet
3. Seed metering mechanism	• Mild steel,C.I.

4. Drive transmission system	<ul style="list-style-type: none"> <li>• Mild steel</li> </ul>
5. Furrow opener	<ul style="list-style-type: none"> <li>• High carbon steel</li> </ul>
6. Furrow closer	<ul style="list-style-type: none"> <li>• High carbon steel</li> </ul>
7. Transport wheel	<ul style="list-style-type: none"> <li>• Mild Steel , C.I.</li> </ul>



#### 1) Seed storage tank :-

Storage device is one of the important device of the system and is design according to weigh sustained by the machine as well as the required capacity for planting this component is stationary the tank seed sowing disc is arranged this disc serves the function of distribution of seeds, as for each complete rotation of the rotating wheel also number of seeds falling from tank is varried according to requirement.

**2) Developed seed mechanism :-**

Seed metering device meter the speed which is going into the farm. It also maintain the required level of the sand in the tank . Mostly metering is necessary to track the amount of seed also tank is again filled. It gives the length or the distance which can be sowed . Thus only required seeds falls for every rotation of the wheel.

**3) Seed sowing disc :-**

The seeds are sow during the rotation of the wheel. These are screwed to disc it's size is varried according to diameter of seeds and required distance between the seeds.

**4) Seed metering device :-**

Functional requirements of seed metering devices.

1. Metering of the seed should be done at a required rate ( Example- Kg/ha or seed/ meter of raw length).
2. Metering should be accurate as per the requirement.
3. There should be not any damage to the seeds during metering.

**\* Advantages :-**

- 1) With the help of innovation seed sowing equipment the seed can feed into the soil continuously without any restriction while in flowing of speed.
- 2) Most of the seed sowing equipment machines mentioned above required only one person to operate. Hence it reduces labour cost.
- 3) Overall cost for seed sowing processes will be reduce by using this seed sowing equipment.
- 4) These equipment can also be used for sowing different types of seeds . It is helpful for small and medium scale farmers.

**\* Conclusion :**

Currently are using seed driller , this seed driller can sow only seed at a time and only one type of seed driller into seed cum fertilizer driller. We can save energy as well as time of farmers because to modify current Seeds driller into seeds cum fertilizer sowing machine. In these concept modify and type of seed metering mechanism so modifying this old seed driller we can sow seeds at a reasonable distance. It can sow the seeds and fertilizers simultaneously in ratio. The seed cum fertilizer sowing machine more helpful, less time consuming , carry seeds and fertilizers in a separate compartments

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