MULTI PURPOSE SEED SOWING MACHINE

RIDHAM DAVE[1], VIRAJ GHARDUSHIYA[2]

[1] *Bachelor of Engineering in Mechanical, Dept. of Mechanical Engineering, Atmiya Institute of Technology and Science-Rajkot, Gujarat, India.*
[2] *Bachelor of Engineering in Mechanical, Dept. of Mechanical Engineering, Atmiya Institute of Technology and Science-Rajkot, Gujarat, India.*

Abstract –*Farming has under gone great evolution in last 50 years. Before many years farmer used to sow seed by hand in their farm by row to row to whole farm. After many year during development farmer used to sow seed with the help of animal sources, but this method is very difficult. Farmers and animal used to be very tired entire day. Then after nowadays farmers are using tractors and mechanical instruments for seed sowing, spraying fertilizer and plugging in farm. This condition is very costly for poor and small scale farmers. That is the reason why we develop this seed sowing drill to help the small scale and poor farmers, who can not afford more expensive method or instruments. The abstract of our project is to reduce the Labor Cost And reduce seed sowing cost in the Farm, By performing major agricultural operations like goods carrying, pesticide spraying, laddering, inter-cultivating and digging operations of sandy loam deep soils, to increase the efficiency and reduce the production and handling cost.*

***Key Words*: Shaft, Rotor, Wheels, Gear, Rods, chain drive and sprocket, Hopper.**

1.INTRODUCTION:

A seed sowing drill is use for sowing a seed, spray of fertilizer and plugging the farm. As the equipment moves the plugging process takes place, the chain sprocket is attached to the rolling wheel and this is directly connected to shaft which is connected to the hopper, the shaft has teeth which revolve due to rotary motion produced in previous attachments. Hence seeds are sowed via pipe connected, which is aligned to the plugging teeth.

- **WORKING PRINCIPLE:**

When the wheels of the machine starts moving the plugging of the land takes place. The teeth of this machine plugs the land. The chain sprocket which is attached to the wheels also starts rotating with the rotation of the wheels, this sprockets are directly attached to the hollow shaft. The hollow shaft is connected with the main hopper which contains the seed in it. The shaft contains a gear which is also adjustable according to the seed or the land, so as the result the gear picks up the seed from the hopper and give it to the hollow shaft which puts the seed directly into the land.

- **Objective:**

❖ The main objective of this project is to reduce the cost of seed sowing process for small scale farmers.
❖ To make the seed sowing process easy.
❖ To make the operation less effort.
❖ To reduce the time of operation.

2: Seed Sowing Drill:

A seed sowing drill design because small scale or poor class farmers does not afford high cost agriculture equipment or machinery. even If they do not have technical knowledge they can still easily operate this seed sowing drill. Seed sowing drill is use to sowing a seed, spray of fertilizer and plugging the farm. The frame is in cubic shape and the attachment like sprayer, flow pipe of fertilizers and sowing were assembled closed cubic, and the inter cultivator placed at the bottom side. The front wheel having snipers which helps in easy flow in wet land, and there are two rear wheel which is supporting to the cubic, cutter can also be adjusted by the handle provide to it, this is totally manually operated machine.

2.1 METHODOLOGY:

In designing and fabricating this seed sowing drill, a flow of methods had to be used the design the drill. First of all, a process planning had to be charted out. This acts as a guideline to be followed so that, the final model meets the requirement and time could be managed. This would determine the efficiency of the project to be done. Regulating and analyzing these steps are very important as each of it has its own criteria to be followed.

2.2 FLOW CHART:

PLANING

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FABRICATION OF BASIC COMPONENTS

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ASSEMBLING

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PERFORMING THE OPERATION

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EXECUTION

3.COMPONENTS USED IN THIS MACHINE:

1. Wheels
2. Bearing
3. Hopper
4. Chain drive
5. gears

3.1 Wheels:

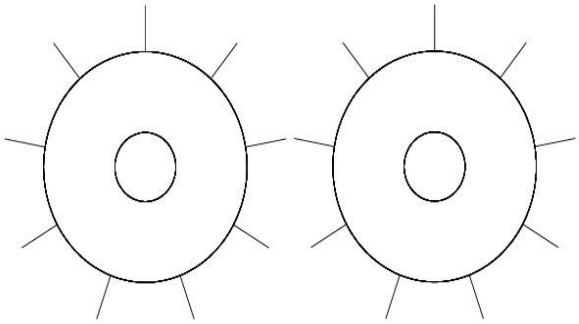

Fig.1 wheels

The wheels are the key components of this machine. The Diameter of the wheel is 10cm. when the wheel completed one rotation approxmetly 3 feet of linear distance is covered by this machine. And in this 3 feet linear distance 3 seeds drops from the hollow pipe. That amount of seed droping can be adjustable accoerding to the land and the grains which farmers want to sow.

3.2 BEARING:

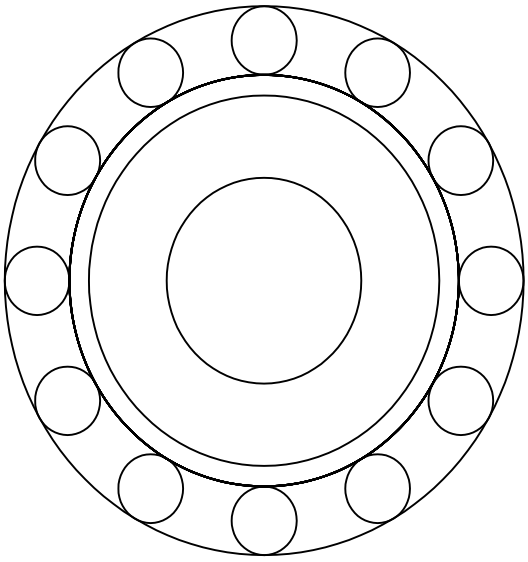

Fig.2 Bearing

A bearing is a mechanical element that constrain relative motion to only the desired motion. It also reduce the amount

of friction between two moving parts. Most bearing facilitate the desired motion by minimizing the friction. Bearings are classified according to the type of the operation, the motion allowed, or the direction of the load. The bearing which is used in this machine is made out of mild steel.

3.3 HOPPER:

The hopper is a device which stores the seeds in it. There are two hoppers in this machine one for the seeds and another is for fertilizers. Both the hopper is made out of plastic to reduce the weight of the whole machine. The amount of fertilizer to be sprayed can be adjust according to the need.

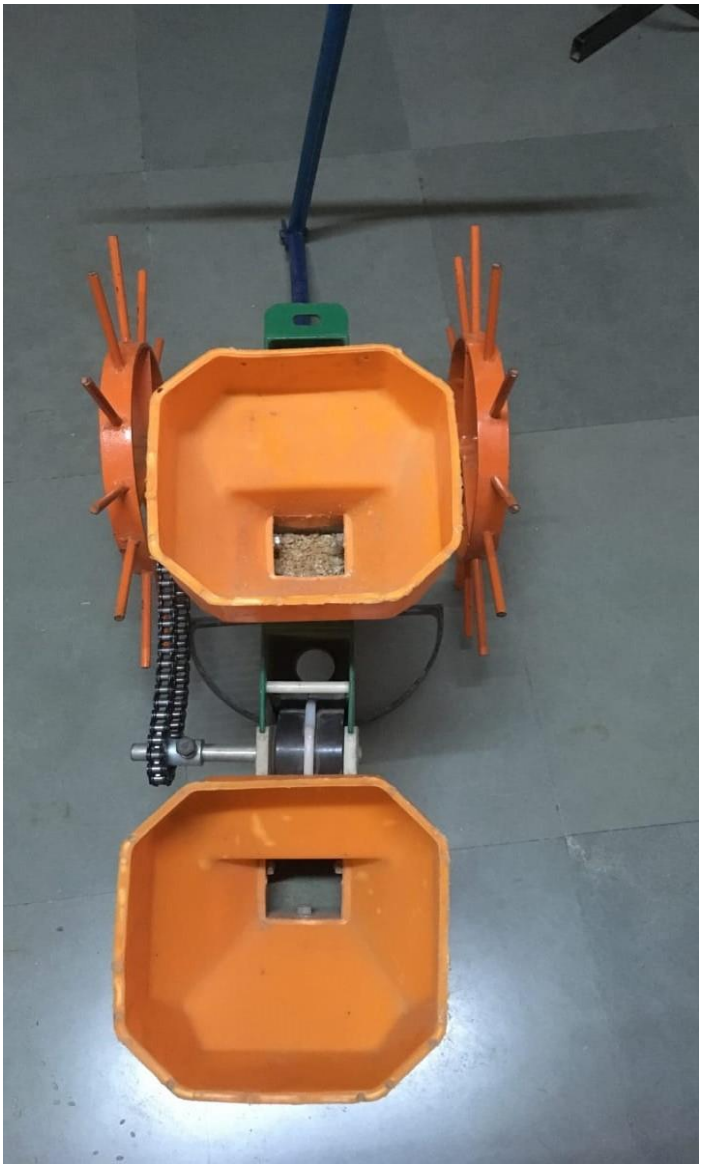

Fig.3 Hopper

3.4 CHAIN DRIVE:

A chain drive is an element or mechanism which uses for power transmission from one part to another part. Most often the power is conveyed by a roller chain. The sleep factor and the creep factor are very less in chain drives. It also provides high transmission efficiency than friction drives.

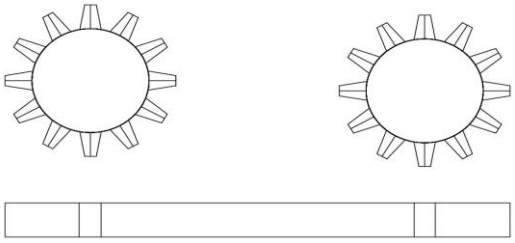

Fig.4 chain drive

3.5 GEARS:

A gear is a rotating circular machine part having cut teeth. Different shape and size of the gears used for difference purposes. Gear devices can change speed, torque and also the direction of the power source. The material of the gear used in this project is polyacetal, which are light in weight and the strength of the gear is also high. This gears can be

adjustable according to the need. The gear is directly attached to the main hopper.

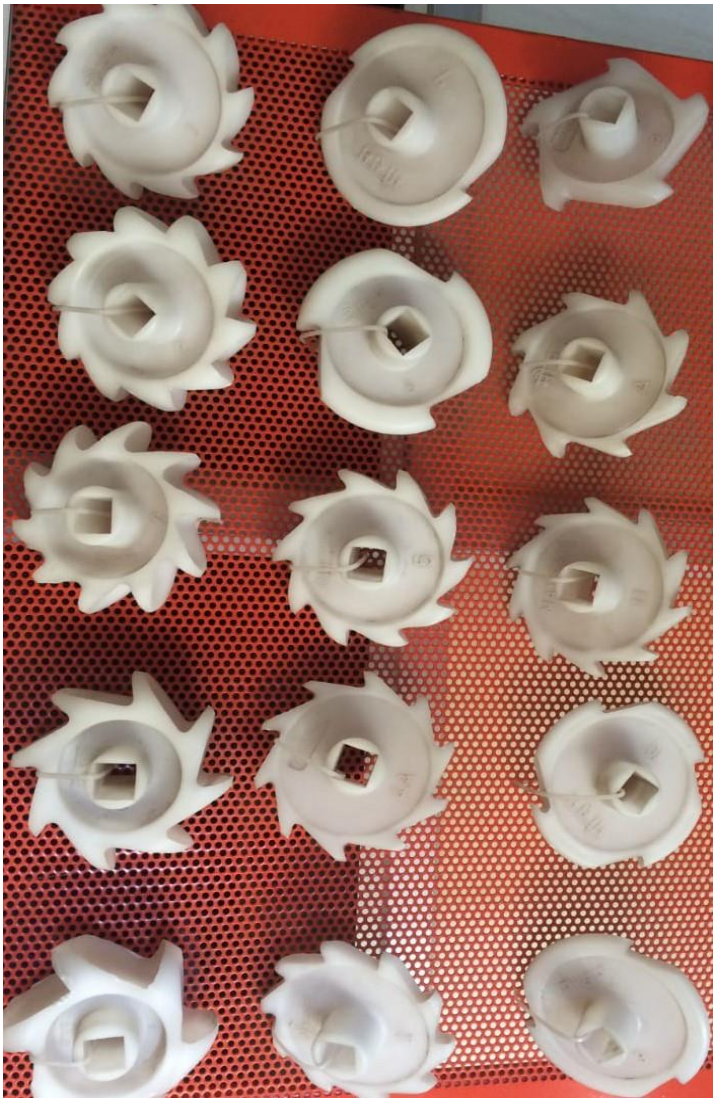

Fig.5 gear

4. PROJECT OUTCOME:

- The teeth of the machine is adjustable.
- The maintenance of this product is low.
- Weight of this product is less.
- Level of human effort is low.
- The product is environment friendly.
- Product can be used for seed sowing and also for fertilization.

4.1 SPECIFICATION OF PARTS:

NO.	PART NAME	MATERIYAL	QUANTITY
1	Handle	Mild Steel	1
2	Chain Drive	Mild steel	1
3	Wheel	Galvanizes	1
4	Shaft	Mild steel	1
5	Bearing	Mild steel	1
6	Bolt	Steles steel	8
7	Nut	s.s	8
8	Washer	s.s	6
9	Bed	Wood	1
10	Teeth	Galvanizes	1

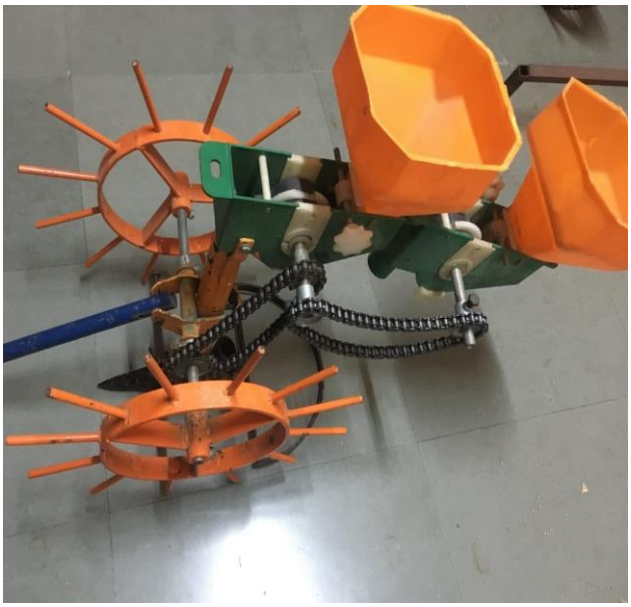

Fig.6 Working model

5. CONCLUSION:

Hence after comparing the different method of seed sowing and limitations of the existing machine, it is concluded that the multi-purpose seed sowing machine is,

- Maintain row spacing and controls seed and fertilizer rate.
- Control the seed and fertilizer depth and proper utilization of seeds and fertilizers can be done with less loss.
- Perform the various simultaneous operations and hence saves labor requirement, labor cost, labor time, total cost of saving and can be affordable for the farmer
- Totally environment friendly and no use of any petrol or diesel equipment to run this machine.

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