

Case Study : Seed Sowing Machine

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Empathy Study

Seed Sowing with hands

- In manual seeding, it is **not possible to achieve uniformity** in distribution of seeds
- A farmer may sow at desired seed rate but **inter-row** and **outer-row** distribution of seeds are **likely to be uneven** resulting in bunching and gaps in field poor control over depth of seed placement.
- The effect of inaccuracies in seed placement on plant stand is greater in the case of crops



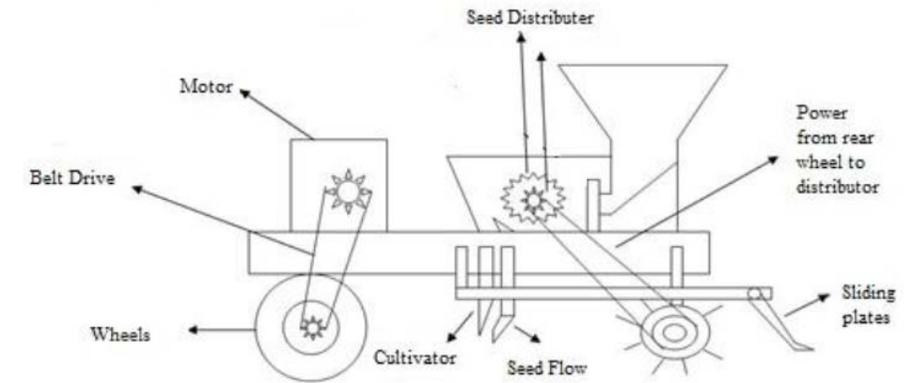
Ideation

Seed Sowing with hands

- To manufacture seed sowing machine this can be operated by the single operator.
- To set fertilizer with sowed seed.
- To level the ground in small extent.
- To enable the machine for the sowing of several of seed like maize, wheat etc.
- To maintain the same distance between two seeds at the time of sowing process

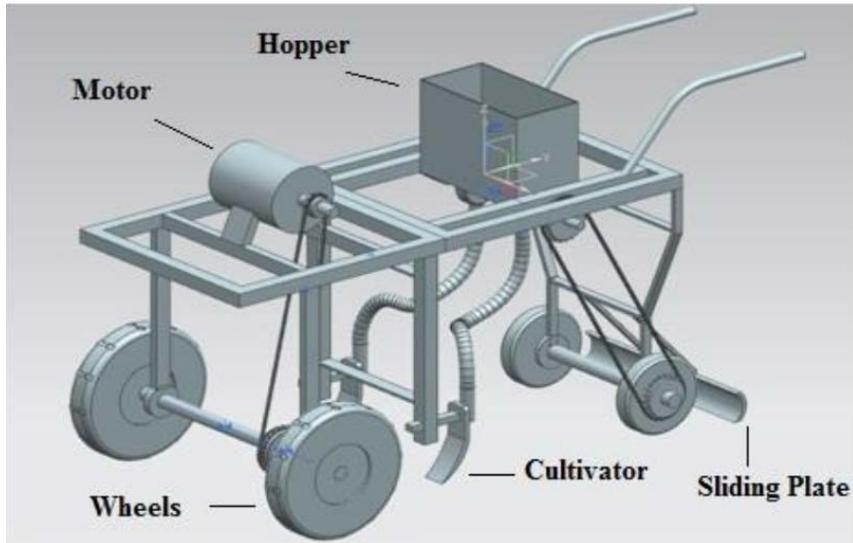
Define

- Work reliably under different working conditions.
- Decrease the cost of the machine.
- Decrease labor cost.
- The machine can be operated in the small farming land.
- Making such a machine which can be able to perform both the operation.

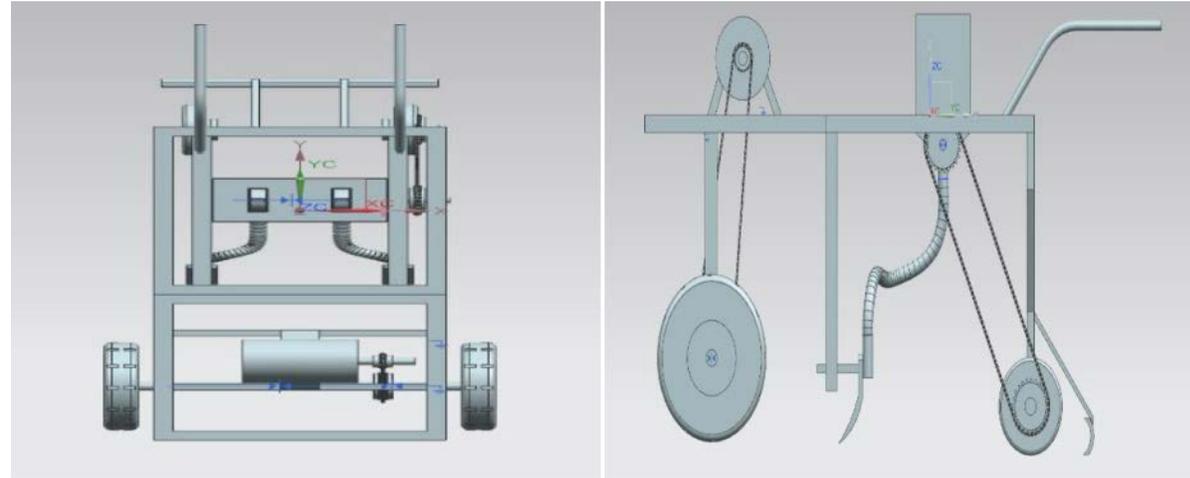


Schematic diagram of a seed sowing machine

Product Characteristics

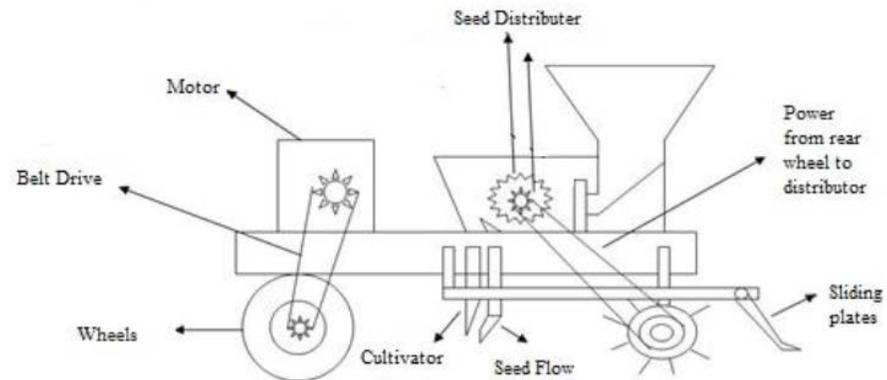


Isometric View



Top View

Side View



Schematic diagram of a seed sowing machine

Product Part Description

D.C. Motors

It is used in the model to drive the front wheels which further drives the distributor.

Hoppers

It stores the seeds to be sown in the soil. Higher the capacity less the need to refill the hopper during process.

Seed Distributor

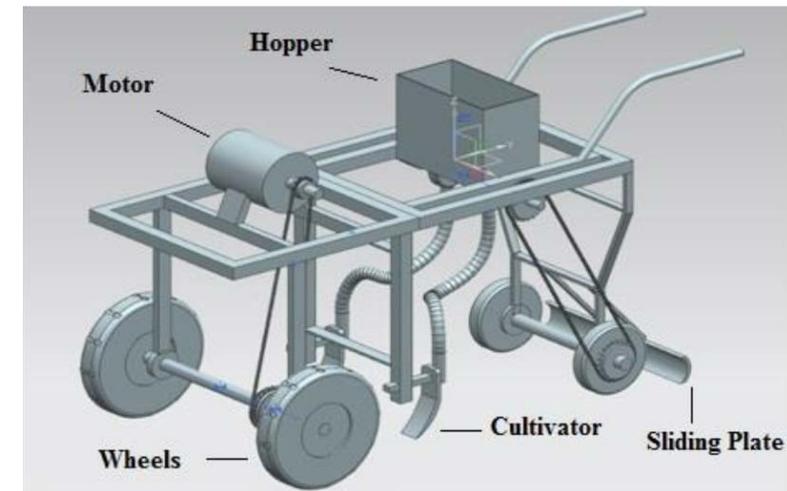
It consist of fluted rollers which are driven by rear wheel with the help of belt and pulley.

Cultivator

The work of the cultivator is to tilt the soil to the required depth so the distributor mechanism can sow the seed.

Belt and pulley drive

For transmission of power from motor to wheels belt and pulley drive is used in the machine and also to drive seed distributor.



Product Part Description



Design Specification

Design Matrices	Unit
Length	610 mm
Width	356 mm
Height	254 mm
Power Transmission	Belt and Pulley
Hopper Limit	1 Kg Medium size seeds
Number of distributor rollers	2
Distribution Mechanism	Fluted roller
Distributor driver	Rear Wheel

Thank You