**VIDHAI**

ABSTRACT

OBJECTIVE:

The main focus of this project is to design and develop a way to sow seeds mechanically. The seed sowing system was programmed to accomplish the task of sowing a variety of seeds at definite intervals and to assist farmers in the fields. The machine can be controlled manually or can be dragged by cattle. This mechanism increases the seed sowing efficiency for a given mechanical effort. In this machine, three systems have been integrated with the help of chains, sprockets and gears. These include mechanism for digging, sowing seeds, covering the pit made.

BRIEF INTRODUCTION ABOUT OUR PROJECT:

The link lengths of the digging mechanism are optimised using SolidWorks such that the coupler traces the curve which has a unique forward and return path. This is utilized to dig-out the mud at regular intervals. The mud is discarded at the posterior places of the hole and the seed is released from the seed container into the dug-out pit. The mud which was dislodged earlier is used to close the void by the pit closer affixed at the rear part of the machine. The seed sizes can be modified by rotating a knob, making the Vidhai the most versatile seed sower ever.

INNOVATIONS IN OUR PROJECT:

1. MECHANISM USED FOR SEED METERING:

The seed metering is controlled by a scotch-yoke mechanism which opens the orifice in the seed container and releases the seeds into the burrows. Scotch-yoke mechanism is a reciprocating mechanism which converts the rotational motion of the wheel into linear motion. The reciprocating part is coupled to the sliding yoke with a slot that engages a pin on rotating part. All the systems are synchronised and powered by the rotation of the wheel.

1. MECHANISM USED FOR DIGGING:

The digging mechanism uses a slider crank mechanism. This basically contains a crank, a connecting rod, a slider and a guide. The rotary input is given to the crank which is transmitted to slider through the connecting rod and makes it to undergo oscillatory motion. While each body has six degree of freedom, the kinematical condition leads to only one degree of freedom. In order for the crank to rotate fully the condition L> R+E must be satisfied where R is the crank length, L is the length of the link connecting crank and slider and E is the offset of slider . A slider crank is a RRRP type of mechanism i.e. It has three revolute joints and 1 prismatic joint. The total distance covered by the slider between its two extreme positions is called the path length. The slider also rotates about its axis to make it more effective in any soil conditions. The rotation of slider is powered a motor.

ADVANTAGES:

The advantages of our model are listed below:

* Increases the efficiency of farmers to accomplish the task of seed sowing.
* It is cost effective and easier to use.
* Regulation and the slot size can be modified according to each seed.

APPLICATIONS:

The Vidhai finds extensive use in agriculture, especially in horticulture where the spacing between the seeds is very important. This also helps to reduce the wastage of seeds. Seeds of any size and shape can be sown with the help of this machine. The distance between each seed can be altered by gear ratios.