



SRI RAAJA RAAJAN

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Anna University)

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Tractor PTO operated Pesticide Sprayer

Objective of this project is to avoid the human injuries due to sparing the pesticides to the crops. Pesticides are very harmful to our body. A man, when continuously inhaling the pesticides drizzling. While spraying the pesticides to the crops, which will leads to the organ dead. To avoid this cause the humans uses mask. It can only minimize the cause but won't stop the cause. Secondary thing is the human can cover only a limited area per day may be approximately 8 to 10 acres.

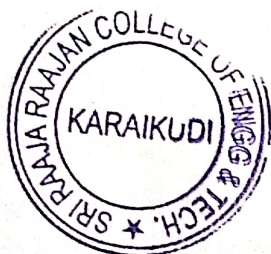
To overcome the above two issues. The tractor is designed to spray the pesticides. When tractor is used for spraying the pesticides, it can cover over 20 acres per day. It is comparatively more than 2 times of human effort.

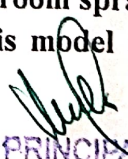
Normally the rotavator is used to cultivate the field before seed sewing. The rotavator joints are used to make link with High Pressure water pump. High pressure water pump is placed in the top of the carrier. At the bottom side a 9" pulley is used. At the top of the carrier 6" pulley is used. This pulley ratio is used to increase rpm of the HPWP. Again a 6" single belt pulley is used to connect the PTO setup with HPWP.

A throttle valve is used to maintain the pressure in the water pump. This HPWP has single inlet and double outlet, which means this system has nozzle to spray the pesticides. The remaining concentration is directed to the tank. One nozzle can cover up to 180 degree. The movement of the nozzle is controlled by a switch. Also the velocity of the nozzle can be controlled by separate Circuit. This circuit acts as voltage controller.

Tractor can move in idle speed to cover the area. Within 10 minutes 1 acre can be covered because side to side coverage is 36 to 40 feet range. By applying the clutch the driver can able to stop the system for a little bit of time.

Comparatively to other model, this model is cheap, low maintenance, No need of extra knowledge to operate. According to drone this type of broom sprayer is cheap. Drone pilot certificate course must need to operate the drone. This model doesn't require any external experience to operate it.




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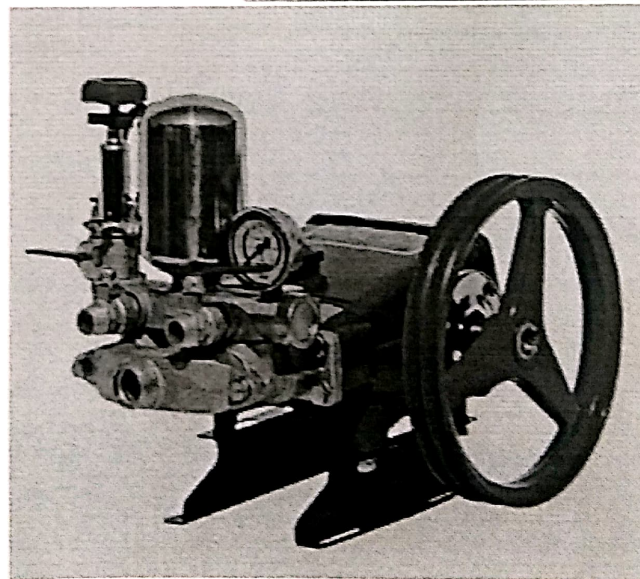
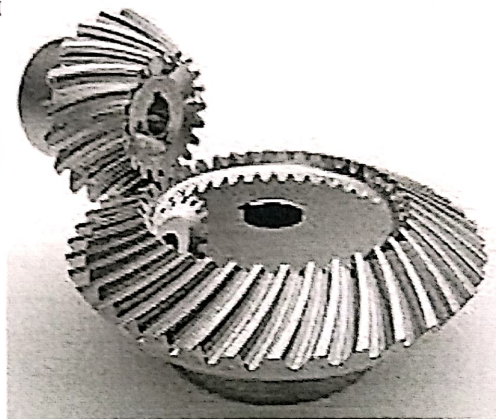
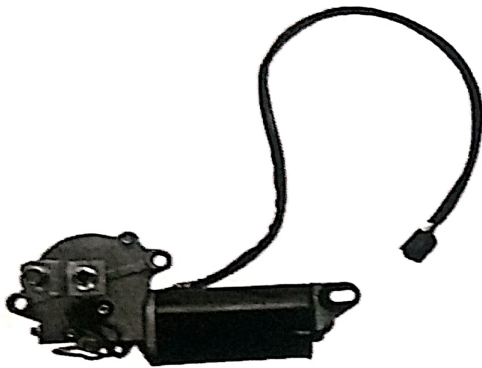
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Fuel expense for pesticide spraying to 1 acre is about 50 to 70. Spraying mechanism is fully controlled by 12v wiper motor which was used in vehicles.




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Quotation

Tractor PTO operated Pesticide Sprayer

Sl.No	Items	Price
	Front Wheel Assembly Work	
1.	1000 liter square tank	6000
2.	spray gun system	35000
3.	High pressure water pump	18000
4.	9" 2 belt pulley	3500
5.	6" 2 belt pulley	2500
6.	2 belt (Fenner)	3500
7.	PTO outer joint with star head	4500
8.	PTO inner joint with star head	4500
9.	2 Bearing	3000
10.	9" Pulley Shaft	3000
11.	Tank carrier setup with 4 stands	20000
	TOTAL	103500



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