

# Agriculture Three in One Mechanism

Ingale Rahul Mukund<sup>1\*</sup>, Gomsale Ravi Ratan<sup>2</sup>, Jadhav Ravindra Dilip<sup>3</sup>, Jadhav Vaibhav Sunil<sup>4</sup>,  
T. R. Patil<sup>5</sup>

<sup>1,2,3,4</sup>Student, Department of Mechanical Engineering, Matoshri College of Engineering and Research Centre,  
Nashik, India

<sup>5</sup>Professor, Department of Mechanical Engineering, Matoshri College of Engineering and Research Centre,  
Nashik, India

**Abstract:** The paper deals with utilization of alternative energy and it's converted into the energy, that's utilized to drive the assorted units of the system. Throughout this paper we tend to had tried to elucidate but the assorted agriculture equipment's unit combined and work in conjunction with potency with reducing the manufacturing value that is in a position to be in low-cost sire.

**Keywords:** cutting machine, spraying machine, dusting machine, agricultural vehicle.

## 1. Introduction

For the right growth of plants like tomato, cotton, graphs etc. there's would like of keeping away this plants from completely different sickness and conjointly the unwanted grass ought to be aloof from the farm field once the precise interval of your time. For this heap of effort are need and conjointly the various agriculture equipment's that required heap of cash. The agriculture instrumentality like spraying machine, dusting machine, cutting machine are wont to spray the pesticides solid liquid or mist and also the cutting machine is employed to reap or used as a grass cutter within the farm field. Conjointly the pesticides are spreads for rising the standard of the crop thus the pesticides ought to be sprayed uniformly everywhere the plant. For spraying the pesticides uniformly the spraying machine and dusting machine is needed.

## 2. Documentation Review

B. Venu: a star grass cutting is machine that uses slippery blade to chop field at a good length .even additional refined device square measure there in each field. Power consumption becomes essential for further [1]. V.Vasu, R. Joshua: Energy demand is that the live thread for our country. Finding resolution to fulfill the energy demand is nice challenge to the someone engineers, interpreneurs & businessman of our country [2].

## 3. Methods

Convectional methodology: within the typical method the instrumentality use for agriculture purpose was a separate unit like spraying machine dusting machine, cutting machine as

shown in below figure.

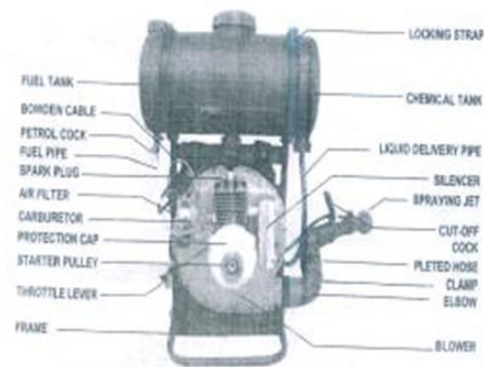


Fig. 1. Spraying machine



Fig. 2. Cutter machine

### 1) Developed Method

Below Figure Shows three Mechanism place in on the sole foundation that's utterly totally different from the quality technique throughout that all the three equipment's where operational as single unit.

\*Corresponding author: rahulingale54@gmail.com



Fig. 3. Multi-purpose machine

#### 4. Problems in Agricultural Fields Equipment's

The main downside we tend to discovered was that the price of equipments likes spraying machine, dusting machine and cutting machine. Conjointly the supply of such machine within the single unit. Conjointly the convectional equipments used, needed the fuel for his or her operating this increase the upkeep of the instrumentation. Conjointly the matter like pollution is caused by the convectional equipments. If the equipments area unit performing on the electricity then the work is stopped throughout the time once the electricity isn't gift this cause delay within the operating, which might increase the malady within the plant if electricity isn't gift for the many days. Conjointly the cutting the grass within the farm field needs range of labors that is kind of troublesome currently every day, conjointly the fees to be pay area unit increasing day by day that can't be cheap for the poor farmer. And conjointly the work isn't tired time. Conjointly the convectional dusting machine is incredibly pricey and it works on the tractor machine. The price of tractor machine in terribly high. This tractor machine and dusting machine is out of father of poor farmer.the cutting machine value is additionally terribly high and cutting of grass within the farm field needs to be done unceasingly this needs heap of labors suggests that additional increase within the value whereas doing the farming. The spraying machine is that the most significant currently days because of that the value is increasing, conjointly it's operated with the assistance of electricity of diesel machine suggests that it'll not be able to operate while not the electricity or the diesel machine. The diesel machine can cause pollution. The soaking is additionally the most perform to be performed just in case of tomato farm field within the Rainey season. The upkeep instrumentation is incredibly pricey of all this instruments. The breakdown of one half can value an excessive amount of to the farmer.

##### 1) Need

V.The main aim behind this is often to construct the instrumentality that area unit essential for the farm field with the acceptable value which can be cheap for the poor farmer and conjointly the potency of the instrumentality ought to be high, so all farmer will like it 1st rather aiming to the convectional equipments. The opposite want is that the labor handiness, currently on a daily basis the labor isn't being simply accessible. Conjointly if they're accessible the operating value of them is incredibly high and also the potency of the labor is incredibly low. This could cause the operating time to be increase. Thus the work won't be completed within the given time. Once we

use the convectional machine just like the diesel machine the most drawback caused by this machine is that the pollution. The pollution is that the main drawback currently on a daily basis. as a result of the pollution the human life is obtaining disturbed and conjointly the temperature of the atmosphere is increasing this disturbed the human comfort. Conjointly there area unit a great deal nonconventional energy supply accessible in our close which may be used instead of the convectional supply of energy. We tend to area unit exploitation the alternative energy because the main supply for finishing the various operation. If we tend to don't use the alternative energy it'll be wasted. Conjointly it's no harmful impact like polluting the encircling atmosphere. And conjointly the alternative energy is freely available, we tend to must not pay money for it. The trappings of alternative energy is incredibly simple and conjointly conversion of it into the electricity is incredibly simple. The equipments needed for the conversion of alternative energy is well accessible within the market with the acceptable low value.

#### 5. Construction and Working

##### 1) Construction of spraying machine

It incorporates star plate, battery, on off switch, pump fluid caring pipe or tube, nozzle, fluid containing tank, one twelve V dc motor, and power sending wire.

##### 2) Operating of spraying machine

The alternative energy is cornered with the assistance of star plate this energy is keep within the battery. Once the on off switch is on at that point the facility is given to the pump the pump get operated it pumps the fluid from the fluid tank this fluid is competent the tube towards the nozzle wherever the nozzle can spray the fluid uniformly over the plant. We will use this machine as a souse machine by removing the nozzle, as per demand within the farm field. The twelve V dc motor is employed to regulate the angle of spraying machine as per performed.

#### 6. Construction and Operating

##### 1) Construction of spraying machine

It incorporates star plate, battery, on off switch, pump fluid caring pipe or tube, nozzle, fluid containing tank, one twelve V dc motor, and power sending wire.

##### 2) Operating of spraying machine:

The alternative energy is cornered with the assistance of star plate this energy is keep within the battery. Once the on off switch is on at that point the facility is given to the pump the pump get operated it pumps the fluid from the fluid tank this fluid is competent the tube towards the nozzle wherever the nozzle can spray the fluid uniformly over the plant. We will use this machine as a souse machine by removing the nozzle, as per demand within the farm field. The twelve V dc motor is employed to regulate the angle of spraying machine as per performed.

##### 3) Construction of dusting machine

It carries with it rotary fan, geartrain arrangement ,dusting pipe, star plate, battery, motor, powder containing instrumentation, switch, adjusting rod.

#### 4) *Operating of dusting machine*

The star plate trappers, traps the solar power and also the power is keep within the battery. This power is employed to drive the system. The switch is on and also the power is given to drive system that operates the rotary fan. The powder to be spray falls down ahead of the rotary fan by mean of gas pressure the powder is forced out of the pipe. The adjusting rod is employed to regulate the powder falling from the powder instrumentation in keeping with demand.

#### 5) *Construction of cutting machine*

It consists of motor, cutting blades, switch, star plate, battery, adjusting stand.

#### 6) *Operating of cutting machine:*

The solar power treed within the star plate is keep within the battery. This energy is given to the motor due this the motor begin running. The cutting machine is connected to the motor, once the availability is given to motor, motor begin running because of that the cutting machine starts. The grass is treed within the cutting blades attributable to this the grass is being cut.

#### 7) *Advantages*

- Pollution free.
- Cost effective.
- Easy operating.

- Multiple operations are often performed at a time.
- Portable.
- Less maintenance price.
- High potency.
- Construction is simple.
- No want of trained operator.
- Smooth operating.
- Controlling of operation simple.

### 7. Conclusion

In this approach we tend to conclude that, the various operation are often performed at a time while not polluting the surroundings and by mistreatment the non-convectonal power supply with high potency.

### References

- [1] Solar grass cutter with linear blades by mistreatment scotchs mechanism,. Sept2014 by B Venu & B. Sagar,
- [2] Solar sprayer- associate degree agriculture implement Sept 2010 by V.Vasu & R Joshua.
- [3] Sharma R.R. 1996, Sustainable star thermal power generation technologies in India context printed within the proceedings of international conference and renewable energy, organized yank society of applied scientist.