

Design and Implementation of Waste Composting Machine

Samruddhi. S. Mhetar¹, Ashwini. S. Eksambe², Namrata. K. Kamble³, Vidya. S. Javade⁴

Student, Electrical Engineering, SITP, Yadrav Ichalkaranji, India¹

Student, Electrical Engineering, SITP, Yadrav Ichalkaranji, India²

Student, Electrical Engineering, SITP, Yadrav Ichalkaranji, India³

Guide, Electrical Engineering, SITP, Yadrav Ichalkaranji, India⁴

Abstract: Currently the problem of waste management for the people has increased. So, it is important for us to manage waste. Compost machine is a great way to manage waste. Composting is the decomposition of organic waste. Organic waste which is an important part of municipal solid waste. Composting is used to recycle organic matter. Organic manure is used to keep the soil fertile. Today more attention is paid to the composting process in the past year as increasing waste can increase the concern of pollution in the future. It can affect human life. We have created a compost machine using the new Technic. The composting machine is fully automated. Fertilizer is made in this machine in minimum time. A lot of processing is done in the machine.

Keywords: Organic Waste, compost machine, waste management, fertilizer

I. INTRODUCTION

Garbage management is the biggest need. About 50% of the world's waste is due to waste. Solid waste and Inorganic waste are two types. It contains high concentration of solid waste which can cause bad smell which can affect human life as well as soil damage. This is the right way to go. Therefore, for domestic disposal of household waste, waste was divided into two parts, dry waste and wet waste. Organic waste is an important component. Fertilizer is made by composting organic waste. The same fertilizer is used for crops in the field.

The old type of process takes a long time to process and has a high odor and cleanliness. And nowadays the process takes less time to process and they have less odor and uncleanliness. The best composting machine today is designed to look attractive. In which crushing is done first, organic food, plant leaves are mixed together and finely chopped by a blade, then heating process is done to reduce the moisture in the chopped mixture, then stirring process is done for uniform heating. After all these processes you can easily and cleanly fertilizer.

1.0 METHODOLOGY

The compost machine is fully automatic. In this machine the waste is converted into compost. It must first collect food waste. They grind it in the garbage machine. Garbage is handled with the help of heater. The waste is stirred to get the heat uniformly. It takes a maximum of 24 hours to prepare the waste manure. This fertilizer is used for agriculture. He was good at farming.

2.0 LITERATURE SURVEY

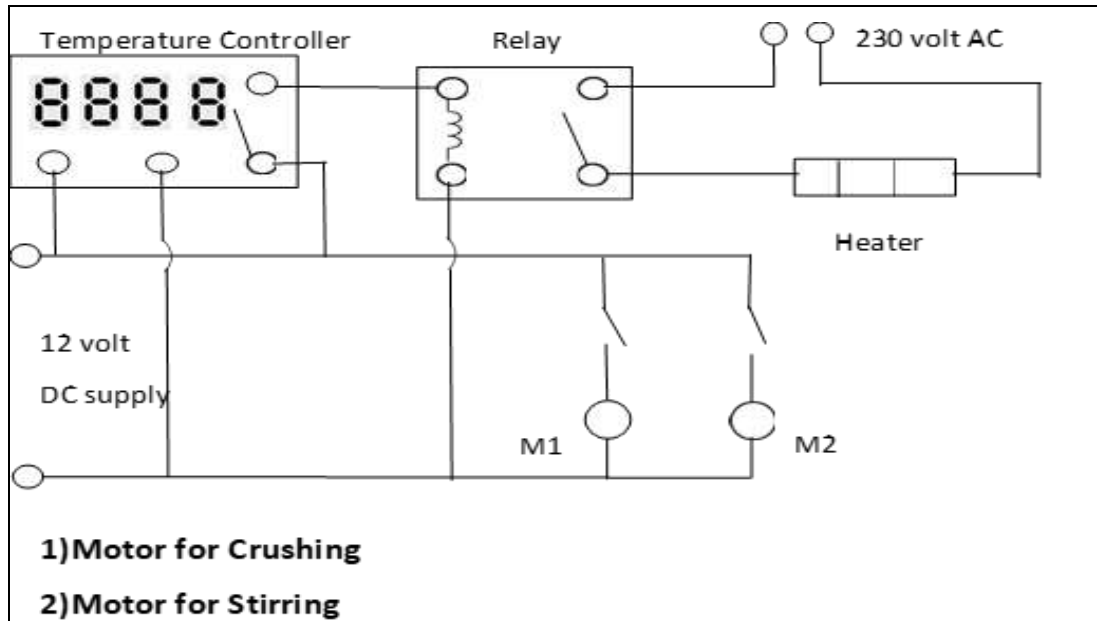
Tom. L. Richard

A good way to make compost is to separate the waste, reduce the moisture, mix it properly. The compost system needs to be processed step by step for it to work properly.

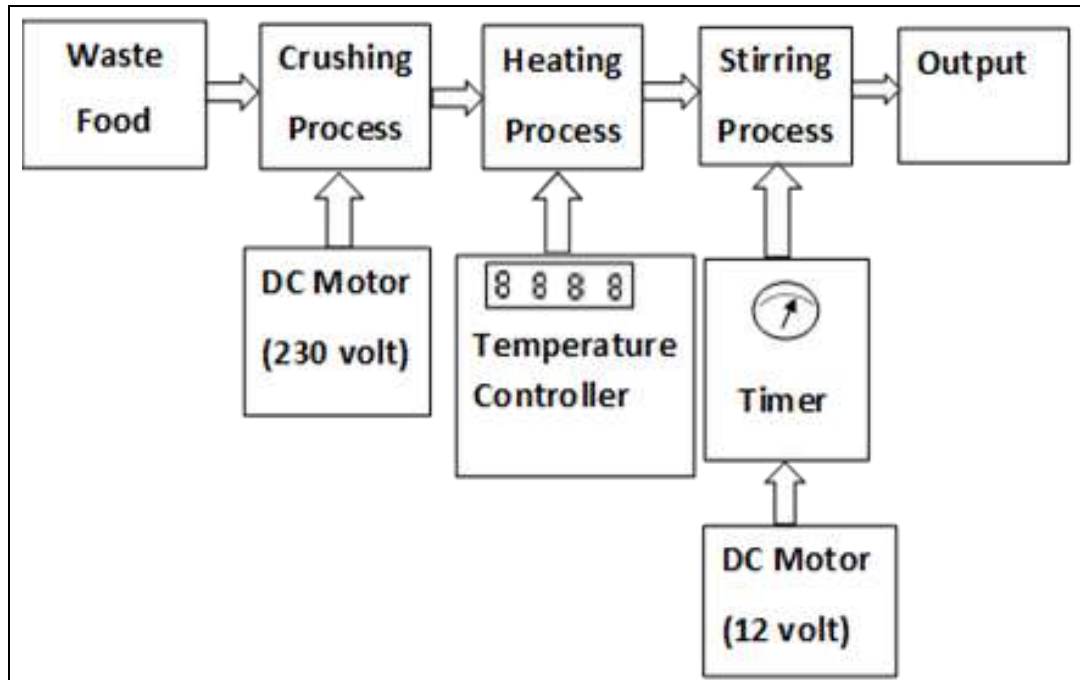
H. C. Hargraves

It is highly efficient to convert municipal solid waste into compost and recycle it. This fertilizer is used in agriculture.

3.0 CIRCUIT DIAGRAM:



4.0 BLOCK DIAGRAM:



5.0 COMPOSTING PROCESS:

There are three steps in this process-

- 1) Cutting
- 2) Heating
- 3) Starring

6.0 COMPOST MACHINE WORKING PROCESS:

The composting machine is designed to convert waste into compost.

They are processed as follows-

- Waste is loaded into that composting machine.
- This waste is finely chopped with a cutting blade.
- The waste is heated with the help of a heater to get rid of the moisture.
- Garbage is stirred to uniformly heat the waste.
- The prepared manure is collected by opening.

7.0 PROBLEM STATEMENT:

Organic waste pollutes the environment around us. Therefore, waste is separated naturally and the process takes longer. The environment gets polluted during this process. This project is useful for overcoming these problems. It is now easier to dispose of waste. It does not require much effort. It involves direct decomposition of waste.

8.0 OBJECTIVE OF PROJECT:

The main purpose of this project is to design smart machine. And get good quality fertilizer.

9.0 ETHNOGRAPHY RESEARCH:

Ethnography research is part of the literature survey. The study of people and their production environment and how they use specific products.

10.0 DESIGN CRITERIA:

This compost machine is very useful. The design is such that the customers will like it and the machine can be easily used by the customers as it is a fully automatic machine. It just needs to be littered. Then we should set the temperature as we want. After that we will get good quality fertilizer.

1. Product Collection-

In cities people do not have time so they can collect garbage daily and put it in small quantities in the machine or store it in five to six days and put all the garbage at once.

2. Compost Handling-

The use of compost is very good. This means that if compost is collected in a bucket after a certain period of time, it can be used for garden work.

3. Less Noise-

The use of compost is very good. This means that if compost is collected in a bucket after a certain period of time, it can be used for garden work.

11.0 COMPONENTS USED:**1 TIMER-**

Timer is used in this machine. We set the time for stirring process.

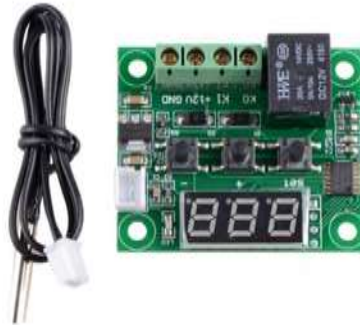
**2 HEATER-**

The waste that is put in this machine. The waste is dried with the help of heater.



3 TEMPERATURE CONTROLLER-

The temperature controller works to control the heat given to the waste particles.



6 RELAY-

Relay is used to switch on and off the heater element.



5 DC MOTOR-

DC motor is used to drive crushing blade and steering mechanism.



II. CONCLUSION

Solid waste management has become important in India. A big role is played by the compost machine. So that the problem of waste is eliminated. There are several ways to convert waste into landfill. But it takes more land and can smell bad. A compost machine is the best solution for this. In which good quality manure is prepared by taking minimum time. Its volume is low. The fertilizer obtained from it can be used for agriculture.

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