DESIGN AND FABRICATION OF KITCHEN WASTE PROCESSOR

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Abstract:
Now days it is very difficult to handle, shipment of all kind of kitchen wastes as source to disposal dumping yard, it may be outside city limit. Also it creates health related lot of problems such as bad smell and all which will creates lot of diseases for living beings. Also it involves transportation and cost effective. It is very challenge to handle practically with the available facilities. In this project work considering all relevant problems, hereby considering any kind of wastes produces from kitchen place as source in Metro Politian cities like Bangalore, it is one of the top 10 countries in the world in terms of per capita food waste which ranges from 900 to 1200 tons of total waste generated per day. The combination of high food consumption rate and very low food waste recycle rate, results in mountains of food dumped into landfills where they get burned and therefore produce harmful gases. In this project work, we are introducing a practical solution for every household to recycle the food waste instead of sending it to the landfill. The solution is to designed and fabricated an eco-friendly machine that converts all kitchen waste may be vegetable, fruits and food effectively into decomposed compost (Natural fertilizer).

Now days it is practically very challenge everywhere the use of recycled food waste as compost and which improves the soil health and structure, increases drought resistance and reduces the need for supplemental water, fertilizers and pesticides. The practically composting process is fully automated, it consists of several steps under controlled environmental conditions (i.e. temperature, humidity) to fasten the process. A mechanism is designed such a way that to reduce food waste volume by over two-thirds. Also, experiments were conducted to figure out the best conditions of temperature, moisture content and the bulking agent that would result in a high-quality homemade fertilizer within hours. Finally all processed kitchen waste decomposed into compost and chemical analysis have been carried out to check the composition such as phosphorous, nitrogen and sulphur etc., for suitability in agriculture soil containments, to support and help to grow further all vegetables, fruits and grains. The aesthetics aspect was considered by designing an elegant and socially accepted compact machine with a suitable size and to be placed in any house hold kitchen.

Introduction:
The project idea introduces a novel design for kitchen waste convertor witch enhanced capacity to convert the kitchen waste into useful of fertilizer for the agriculture. Thus, results in the environmental pollution control. The principle followed in the design phase is to completely convert the kitchen waste in fertilizer in cost effective way, which involves the initial shredding of kitchen
waste and remove the moisture, healthy moisture removal in the special type of heating coil. The final crushing of the kitchen waste to convert into zero moisture at the final output of fertilizer.

**Objectives:**
The major objectives of the project are:

To Design all kitchen waste processor machine to process kitchen-waste compost which Includes Body, Driving mechanism, hopper and mechanical blade arrangement for Chopping & finally it will convert into compost kind of fertilizer.
1. Designing an additional system which pays for the supplied kitchen-waste. This will encourage residents to use this kitchen waste processor and also motivate them for segregation process.
2. Fabrication of machine components and assembly.
3. Testing and demonstration of processing operation.
4. To carried out chemical analysis of compost.

**Methodology:**

**Waste input:** it involves the feed of kitchen waste into machine. The kitchen waste contains vegetable waste, fruit waste, and dry/wet leaf.

**Weight:** in this, it checks the inputs quantity and show the how much reward they get for their kitchen waste.

**Reward:** In reward system depends on weight of the kitchen waste they get the reward for example for 1 kg of input they will get 10 rupees.

**Chopping process:** this project uses chopping mechanism to cut the input waste into small pieces, it helps to increase in moisture absorption rate. Here blades are used to cut the kitchen waste into small pieces.

**Decomposition process:** in this process after completion of the chopping operation, very small particles are left for decomposition process for 1 day by adding the additives.

**Heating process:** in this process, in order to increase the decomposition process heat is required and the temperature is maintained in between 40 to 60 c.

**Fertiliser:** finally by doing all this process we get the fertiliser. Which can be used for all crops, houseplants, flowers, home gardens, etc?
Result And Conclusion:

The following conclusions have been drawn completely for design and fabrication of kitchen waste processor to convert into decomposed compost, which can be used as a natural fertilizer.

1. Kitchen waste processor have designed and fabricated, a thorough survey was conducted through journals and source from some of parts at Bangalore to collect details of amount of waste disposal and methods to process them which is included in this report.
2. Many different designs at the prototype was tried and tested before concluding the final design and hence the robust design was brought up for processing vegetable waste and leaf waste.
3. Vegetable waste and leaf waste was successfully processed and output in the fertilizer form which was further tested for chemical composition analysis and its nutrition contents.
4. Decomposed compost may be used for suitable soil containments for agriculture growers.