

ORGANIC WASTE COMPOST MACHINE: A REVIEW

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Abstract:

Composting is process of reuse of degradable components to conserve sources that we use in day to day life. The composting methods has received more attention due to pollution issue and the search for ecofriendly methods for treating waste. Waste volumes increases rapidly, which leads to loss of ecosystem. Dumping in fertile land may cause permanent infertility of that land, the Land filling of biodegradable waste is proven to contribute to environmental degradation, mainly through the production of highly polluting greenhousegases. Composting deals to controlling of waste for land filling. Reduction of solid waste and return of organic substances to the natural cycle. This paper reviews information on the composting techniques forconserving environmental factors

1. INTRODUCTION:

In India waste generated daily according to report of Government of India's Ministry of Urban Development. As the cities are increasing with vast migration of public from one place to another, the waste is also increasing day by day [9]. Most part of the waste is used for unscientific landfilling or irregular dumping on outskirts of cities, which is the big reason for global warming because the green-house gases emit from that landfill. The available waste management system containing collection, storage, transportation, and processing of waste is not properly done.

In relation with MSW management, one of the big problem being faced by towns or cities is that the quantity of solid waste is increasing and government bodies are not capable to modify he facilities require to manage it. A survey is conducted by Natural Environmental Engineering Research Institute, Nagpur in most cities and predict about 59 000 Tons of MSW generated per day. The efficient method to dispose the organic waste is by composting it to use in agriculture field. Composting is an oxygen needed process in which microorganisms degrades the organic waste to nitrogen rich manure. Currently only 9-10% of organic waste generated utilized for

composting. Different type of methods is used to convert compost from organic waste by various enterprises and government bodies

The compost quality is depending upon the type of organic waste, procedure of composting, time period etc.

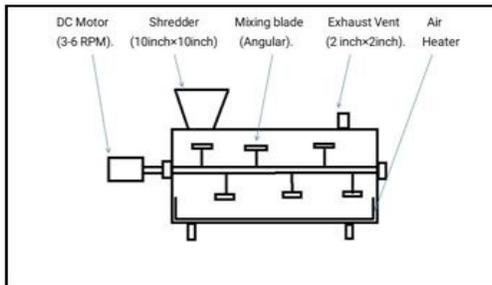
[1] In India, the potential of producing organic waste is about 4.4 million tons each year [9]. The main problem in generation of good quality compost is that there is inappropriate MSW management system. The proper arrangement of biodegradable and non-biodegradable waste is important to obtain good quality of compost. There are two types of organic waste found in cities.

The large amount of municipal, industrial, and agricultural wastes has led increasing environmental, social and economic problems. Stringent environmental regulations for waste disposal and landfills make finding new sites for waste disposal and management a growing challenge. Additionally, landfills use arable lands and soils which can be used for agriculture. The two primarily environmental concerns related to landfills gas emission. The extract produced from landfills may contain a most of toxic and polluting contents. If managed improperly, waste liquid canpollute groundwater and surface water. Landfill gas outflows are a blend of risky gases, and different gases, for example, benzene. A few components of landfill gas might be profoundly harmful, different parts can incorporate alkali, and other Sulfur mixes, which deliver the awful scent. The generation of these landfills depends on the constitution of the disposed material. The more organic wastes are dumped, the more gas is produced by decomposition, the dampening content is increased, and thus the more extract is produced. Moreover, disposal sites produce

noise, dust and odor which make the surrounding area undesirable for habitation. Solid waste management requires the application of effective strategies for proper wastes disposal and treatment. Successful waste policy requires a five-step waste management hierarchy. As demonstrated in Figure 1.1, the hierarchy consists of waste prevention, reuse, recycle, recovery, and disposal. Recycling involves conserving resources and preventing material from entering the waste stream. Biological treatment technologies. Permanently remove the organic material from the waste zone.

other organizations in the industrial, commercial and institutional sectors use on-site composting facilities.

ORGANIC WASTE COMPOST MACHINE



LITERATURE REVIEW

J. C. Hargraves The recycling of Municipal Solid Waste by using composting is very efficient. The compost can be used for agriculture but it has to be nutrient rich and low metal content. For good quality compost the garbage has to be separated at early stage. The metal content can be increased if sewage sludge is added into the compost. [1]

K. R. Atalia The management of municipal solid waste can be increased by developing technology or method to convert waste into useful product. The organic waste which is biodegradable can be converted to environmental friendly organic compost. The organic compost increases soil productivity, decreases environmental pollution and reduces cost. The excess use of chemical fertilizers is hazardous to soil as well as to the environment as it causes water and air pollution. The composting is beneficial as it reduces landfilling, decreases water pollution due to contamination, minimizes the transportation cost etc. The composting is sustainable and wealth generating method. [2]

Tom. L. Richard The ideal way to produce compost is by separating the waste, reducing the size and proper mixing. The step by step process has to be done to make good system of composting. While designing the system following factors has to be considered: cost such as operational, maintenance and capital, market for the compost, flexibility etc. [3]

Sutripta Sarkar In many cities the proper management of waste is major problem. The organic composting is good way

to handle the waste. The heating is self-generated by micro-organisms, which produces manure, biogas etc. The degradation process can be accelerated by the thermophilic phase. The moisture has to be about 60% and the temperature is in the range 65°C-67°C. [4]

Mohd Sahaid Kalil The landfilling is considered to be used for waste management. But because of it the green-house gases liberates to the atmosphere. The organic waste should be composted to increase the quality of the soil. [5]

Ajinkya Hande By using the shredder the organic waste can be chopped to small particles so that proper aeration is done. Due to which the manure is formed in less time and the farmer will get good quality manure at low cost. [6]

El-Sayed. G. Khater The chemical and physical properties of manure made from the organic waste is studied. The properties such as porosity, water holding capacity, pH, Carbon: Nitrogen ratio, etc. are studied. The manure quality is depends upon the proportion a physical existence. [7]

Christiana.Oa , Adepo S. Olusegunb IOSR Journal of Engineering (IOSRJEN) www.iosrjen.org ISSN (e): 2250-3021, ISSN (p): 2278-8719 Vol. 04, Issue 04 (April. 2014), ||V6|| PP 29-33

As families and communities search for safe and effective ways to manage kitchen wastes, composting becomes a more attractive management option, this not only restore value to it but also lead to a reduction in the amount of waste that require disposal. [8]

Carmel Carey, Warren Phelan and Conall Boland Environmental RTDI Programme 2000 - 2006 ENVIRONMENTAL PROTECTION AGENCY Comhshaoil PO Box 3000, Johnstown Castle, Co. Wexford, Ireland.

Organic waste (i.e. food and garden waste) constitutes the single largest component (~36%) of household waste. Irish waste management policy requires source separation of organic household waste to divert this material away from landfill to higher treatment options. The preferred sustainable option is to biologically treat organic waste and produce a valuable reusable end product, i.e. compost. [9]

4. CONCLUSION

The organic waste compost machine helps rapid composting by increasing temperature of a compost gradually. The flexibility is increased and the total volume of organic waste is minimized. Also the quality of the compost is depending

upon factors such as moisture content, pH, temperature, time etc.

The time require to form compost is reduced as compared to natural usual time.

By the process of aerobic decomposition of organic biodegradable waste, the quantity decreases that can solve the size of organic waste management.

The organic waste is also a good and healthy compost for agricultural use. Also it does not have any reversible effect on environment.

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