MANTECH Publications

Journal of Research in Environmental Sciences and Engineering
Volume 3 Issue 3

A Review Study on "Solid Waste Management for Village Ambewadi Tal- Karveer Dist- Kolhapur"

Radha Ajay Powar
Student
Department of Technology
Shivaji University
Corresponding Author's E-mail: *radhapowar1521@gmail.com*

Abstract

This paper reviews the utilization of organic waste for composting. Production of municipal waste continues to rise, which causes loss of resources and increased environmental risks. By open dumping and land filling will cause environmental degradation and harmful disease. Composting is the most appropriate economical solution to overcome the problem due to municipal waste. The total waste generated in India is 1.54 lakh metric tons per day in which 50% of total waste is organic wastes, composting has emerged as one of the best methods for treatment of wastes. Composting reduce the volume of waste generated as well as provide nutrients for plants, also helps in segregation of waste at source. In term of the factor affecting the composting process, temperature, ph, moisture contents and carbon nitrogen ratio are the main factors that contribute to the efficiency of the composting process. This paper shows information on the composting for treating waste as a means of pointing the environmental pollution concerns. Adding additives to the compost have also received much attention in recent years as they enhance the rate of degradation.

Keywords: *Municipal Organic Waste, Composting, Environmental Pollution, sustainable waste.*

INTRODUCTION

As the population increases rapidly in India which causes high rate generation of Municipal Solid waste. Municipal Solid Waste contains both domestic and commercial waste. The large amount of waste creates lots of problems in day to day life of living creatures and also in Environment. It requires application of some effective strategies for proper disposal of MSW/organic wastes. Composting is one of the best technologies to treat waste in a more sustainable way, from many decades composting has been used as a recycling Solid waste Organic matter it improves the soil fertility, soil structure and it also maintain the moisture content of the soil. Composting is a natural process that turns organic material into a valuable humus substance, this substance called compost and the waste is composed with the help of worms is known as vermicomposting is a wonderful conditioner for soil, during composting microorganisms such as bacteria and fungi break down complex organic. A growing emphasis has been placed on the three R's: Reduce, Reuse, and Recycle. Composting provides a means of accomplishing all the three of R's. Through composting the amount of garbage sent to the landfill is reduced, the organic matter is reused rather than dumped, and it is recycling into a useful soil amendment. Natural ecosystems have a proven method of breaking down organic materials into a useful end product. The decomposers found within the food chain breakdown natural organic waste and turn it into humus, the organic components of soil. Waste management is all about how to dispose of all the things don't want on the farm. Composting is a sustainable waste management practice that converts any volume of accumulated organic waste into useable product. The study of waste production and management leads itself to an interdisciplinary study. Further more people can gain awareness of individual's role in the world today as they learn how waste is produced and how it can be reduce for it is after all our youth to whom this planet belongs.

LITERATURE REVIEW

Saleh Ali Tweib et.al., (2011)

Composting has been used as a means of recycling organic matter back into the soil to improve soil structure and fertility. The composting process has received much attention in recent years because of pollution concerns and the search for environmentally sound methods for treating waste. Waste volumes continue to rise, which leads to loss of resources and increased environmental risks. Open

dumping and sanitary landfill is a major method for waste disposal, the Land filling of biodegradable waste is proven to contribute to environmental degradation, mainly through the production of highly polluting leachate and methane gas .Composting aims to stabilization of waste for land filling, volume and mass reduction of solid waste and return of organic substances to the natural cycle. Composting is an environmentally friendly method rather than directly dumped into earth and it method is useful to convert organic waste to useful products and that would otherwise have been land filled.

The Municipal Solid Waste Generation, Recycling, and Disposal in the United States (2007)

This "Methodology for Estimating Municipal Solid Waste (MSW) Recycling Benefits" is intended to provide a clear and complete explain action of the process used by EPA to develop estimates of the benefits associated with municipal solid waste (MSW) recycling. This methodology helps to serve as a crosswalk and explains how EPA's MSW characterization data (as reported in "Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2006" (Characterization Report), are input into the Waste Reduction Model (WARM) in order to derive benefit estimates. Also, this methodology provides further specifics regarding the Characterization Report and WARM, and helps to further document the linkages that exist between waste management, and its potential contributions to climate change and energy conservation.

Bera, R et.al., (2013)

Organic soil management has become the pressing need today for reversing the cycle of soil degradation and thereby putting a step forward towards soil and crop sustainability. At the same time sustainability has been farfetched even after application of organic soil inputs over a period of years. Practical experience has indicated three regulating avenues in the way of achieving the above set target i.e., i) Quality of soil input ii) quantity of application and iii) unit cost. Hence, an effective composting method, which enables the production of good quality compost at an economical cost, can only meet the criteria for sustainable organic soil management The present study at Maud tea estate (Maud T.E.) in Assam, India under FAO- CFC-TBI Project, 2008-2011; was aimed at comparative evaluation of different available and practiced composting methods viz. Vermi,

Indigenous, Biodynamic and Novcom composting in terms of their end product/ compost quality as well as respective cost. Study revealed that comparable values were obtained for all types of compost in terms of physical properties, organic carbon, C:N ratio, stability, maturity and phytotoxicity status. However, compost produced under Novcom composting method showed better results in terms of total NPK content (i.e. nutritional content) and microbial population

Santha Sheela Nair (2012)

The waste is generally generated at household level and also at community level e.g. market, common streets etc. In order to properly manage this waste with minimum effort and cost, focus must be on management at the household level. The waste which cannot be managed at household level and that collected from market place should be handled at the community level. Simply, only cost effective and decentralized user friendly technologies should be disseminated.

The following steps may be followed for introducing community based Waste Management System: Information Collection, Participatory Planning and Preparation of GP/ Block level action plan.

R Ramesh et.al., (2016)

Solid waste management has become a practical necessity in rural areas too. Next to becoming Open Defecation Free (ODF) villages, the Swachh Bharat commitment demands rural households to dispose of garbage in a scientifically sensible manner. Domestic refuse from individual households should not become a cause for unsightly streets and unhealthy rural environment. An essential requisite for a healthy rural environment and quality living is the Gram Panchayats (GPs) should put in place an arrangement for garbage collection and disposal in a manner that is socially acceptable and technically sound. In the absence of an effective system in place, it is unjust to blame the households of irresponsibility. The Government of India (GoI) through the Ministry of Drinking Water and Sanitation (MDWS) has geared up the initiatives to facilitate such a process.

Vikas D. Bhavsar (2016)

The rural waste management has been regularly voiced in India. With the emerging concern on large quantity of the waste being produced both in the form of solid and liquid waste, the concept of waste management becomes one of the key focus of sustainable development principles which is based on policies, and

practices that are resource-conserving, follow standards that can be met in the long term, and respect values of equity in human access to resources. There are in Rural area there is the waste management is very important because the people are suffering serious problems including the growth of water borne diseases such as diarrhoea, malaria, dengue, cholera and typhoid. In definitional terms solid and liquid waste management (SLWM) is the collection, transport, processing, recycling or disposal of waste materials, usually ones produced by human activity, in an effort to reduce their effect on human health or local aesthetics or amenity.

CONCLUSION

Based on the study it can be conclude that composting is the best way to reduced or recycle the municipal waste and it causes less pollution and more beneficial to the environment as well as to the economy when compared to current methods of waste disposal into open dumps. The compost has a lot of benefits like:, reduce surface and water leachates, minimise landfill space, methane emissions, air pollution from burning waste, transportation costs etc. Compost can be used as organic fertilizer in agriculture field in place of chemical fertilizer. However, the composting process and compost quality can be improved by adding poultry manure, cow manure, yard waste etc. Finally, it is concluded that composting is the best method to reduce or recycle the Municipal Waste and also helps in agricultural field where the compost is useful for growing crops and vegetables with the help of compost and it also increase the employment. It also decreases the rate of pollution from landfills and opens dumping.

REFERENCES

I. R Ramesh and P SivaRam (2016) “Solid Waste Management in Rural Areas a Step –by- Step Guide for Gram Panchayats” Centre For Rural Infrastructure National Institute Of Rural Development & Panchayati

II. Prof. Vikas D. Bhavsar and Prof. Prajesh M. Pate (2016) IN RURAL AREA “SOLID AND LIQUID WASTE MANAGEMENT” International Journal of Science, Environment and Technology, Vol. 5, No 6.

III. International Journal of Scientific and Research Publications, Volume 3, Issue 6, (June 2013) “Comparative Evaluation of

Compost Quality, Process Convenience and Cost under Different Composting Methods to assess their Large Scale Adopt ability Potential as also Complemented by Compost Quality Index" Bera, R., Datta, A, Bose, S, Dolui, A.K, Chatterjee, A.K, Dey, G.C., Barik, A.K., Sarkar, R.K., Majumdar, D. and Seal, A.

IV. Santha Sheela Nair "Solid and Liquid Waste Management in rural areas" by UNICEF (2012) Secretary Government of India Ministry of Rural Development Department of Drinking Water Supply.

V. Saleh Ali Tweib, Rakmi Abd Rahman and Mohd Sahaid Kalil, (2011) "A Literature Review on the Composting" International Conference on Environment and Industrial Innovation. IPCBEE vol.12 (2011) pp. 124 & 127

VI. The Municipal Solid Waste Generation, Recycling, and Disposal in the United States "Methodology for estimating municipal solid Waste recycling benefits" (November 2007)