



Short Communication

STUDIES ON DIVULGING THE ECO-FRIENDLY SOLID WASTE MANAGEMENT TECHNOLOGY TO THE RURAL SHG WOMEN OF MADURAI DISTRICT

K. Suganya

Dept. of Environmental Sciences, Tamil Nadu Agricultural University, Coimbatore

ABSTRACT

Population expansion and urbanization pave way for the increase in solid waste generation in India and other developing countries. Rural habitants were unaware of the risks associated with the improper disposal of wastes and also unaware of the technology that converts waste into wealth. With this in view, a study was undertaken to disseminate the solid waste management technology through vermicomposting among the rural women population of selected three blocks viz., Thirupurenkundram, Alanganallur and Madurai East block of Madurai district during the year 2014 to 2016. Based on the pre-questionnaire survey conducted before the study period, it has been found that the nearly 50% of the women are unaware of the risks of improper disposal of wastes and diseases spread due to improper hygiene. On completion of the study period, the post survey analysis indicated that the rural Self-help group (SHG) women of the targeted villages have a positive approach in handling the solid waste and enriched their skills on production of vermicomposting and thereby improved their economic status through practicing this technology.

KEYWORDS: Solid waste, Earthworms, Vermicomposting.

INTRODUCTION

The term “solid waste” means any garbage, refuse, or sludge from a waste treatment plant, water supply treatment plant and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations. Municipal solid waste generated from the cities comprises of all biodegradable and non-biodegradable wastes. The daily per capita generation of municipal solid waste in India ranges from about 100 g in small towns to 500 g in large towns. The solid waste generated in Indian cities has increased from 6 million tonnes in 1947 to 48 million tonnes in 1997 and is expected to increase to 300 million tonnes per annum by 2047 (CPCB, 2000). In Tamil Nadu, the unsegregated municipal solid wastes generated are collected and are either disposed in low-lying areas or water bodies or disposed along the roadside and are set on fire causing air pollution. The leachate from the dumped solid wastes has caused water pollution, odour nuisance are mainly caused due to the putrefaction of the organic matter present in the unsegregated municipal solid wastes. Hence, the present study was undertaken to improve the knowledge of rural SHG women of targeted villages of three blocks of Madurai district by demonstrating the recycling of solid waste through vermibag technology and also make them aware about the environmental issues related to improper disposal of solid waste.

METHODOLOGY

In all the selected three blocks viz., Thirupurenkundram, Alanganallur and Madurai East block of Madurai district,

an intensive questionnaires survey has been made in total of fifteen villages like Achampatti, Periurseri, Vavadaimaruthur, Kuravankulam, Mettupatti, of Alanganallur block ; Kodikulam, Auyilangudi, Mangulam, Meenakshipuram, Narasingam, of Madurai East block ; Vadapalnji, Sakkilipatti, Pudukulam , Karadipatti, Periyalankulam of Thiruparankundram blocks. Questionnaire was prepared for collecting the basic details of the SHG women and based on the information collected, awareness cum demonstration programme was given to disseminate the solid waste management through vermibag composting technologies and also basic knowledge on health related problems that rises due to unhygienic water usage practices was also imparted. A total of 40 members in each of fifteen villages were given the demonstration programme on Silpaulin vermibag technology. In each village, nearly three to four SHG groups were targeted and in each group 10 members were selected and imparted them with the vermicompost technology. Silpaulin vermibag was erected in the SHG members place and hands on training on vermicompost operations were imparted to the SHG women. Earthworm's viz., *Eudrillus eugineae* and *Eosinea foetida* collected from Vermicompost Unit of Dept. of Soils and Environment, AC&RI, Madurai were utilized for the vermicompost production demonstration unit in the targeted villages.

RESULTS & DISCUSSION

Madurai District has 13 Community Development Blocks, 100 wards and 428 village (Vaheedha Banu, 2015) and solid waste generated details in the city was given in the

Table 1. As per the reports of Madurai Corporation, garbage is generated at the rate of 406 gram per day per head accumulating to a massive quantum of 548 Metric Ton per day. This is slightly higher when comparing similar level of cities where the per capita generation of waste is around 400 grams per day and the reason for the excess rate of creation of waste is due to the heavy influx of floating population. Out the accumulated garbage released by the houses, shops, daily and weekly markets,

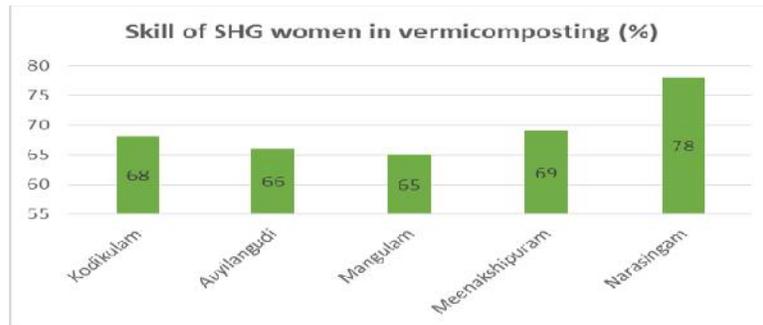
commercial establishments, hotels, hospitals and industries, garbage generated from the house account of 64%. (Madurai Corporation). According to the survey report conducted during the present study, in all the fifteen villages, the 50% of the SHG women were found to be unaware of the problems related to improper disposal of solid wastes and diseases outbreak due to unhygienic practices *viz.*, improper hand washing, improper disposal of waste materials.

S.	Description	Details
1	Per Capita waste generated (Kg/day)	0.382
2	Waste generated per day – approx (MT)	450.00
3	Waste collected per day – approx (MT)	400.00
4	Biodegradable waste (% of total waste)	70%
5	Non biodegradable waste (%)	50 to 45

(Vaheedha Banu, 2015)

The study aims to improve the knowledge of the rural women on this vermicompost technique. Demonstration and Hands training on Silpaulin vermibag techniques was given to the selected SHG members of fifteen villages comprises of three blocks of Madurai District. The targeted women were trained on all the process of vermicomposting; collection of wastes, segregation of biodegradable and non-biodegradable wastes, preparation of compost bag, maintenance of composting bag, harvesting and collection of earthworms etc.,. Post survey visits and analysis revealed that the SHG rural women were aware of vermicompost techniques and also gathered knowledge on proper disposal of solid wastes and also the risks associated with the unhygienic practices. This is in line with the findings of Karuna Jeba Mary *et al.* (2015)

that the SHG members were actively involved in income generation activities. Among all the selected three blocks *viz.*, Thirupurenkundram, Alanganallur and Madurai East block, the villagers had a positive remarks and the percentage of improvement in the solid waste management skills of rural women of five villages in Madurai East block was given in the figure 1. Narasingham village of Madurai East block had a very significant response compared to the other villages like Kodikulam, Meenashipuram, Mangulam, Ayilangudi. The remaining two blocks namely, Thirupurenkundram and Alanganallur also had a very substantial response and behavioral change and also their knowledge on recycling of solid waste got increased.



CONCLUSION

Based on the study, it has been concluded that the targeted rural SHG women of Madurai district have improved their skills on the technology that converts waste into wealth *i.e.*, vermicomposting. It was also revealed that the targeted rural SHG women have raised to 80% in their solid waste management skills and thereby enhancing their socio - economic level.

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