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Proposed Plan of Solid Waste Management For Indira Nagar, Uttan.

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***Abstract*—** *Solid waste management had become a critical issue in rural areas as well as urban areas in India. In developing countries, the rate of generation of waste is very high. Any changes in lifestyles of urban areas attract the rural people leading to generate waste. The high rate of generation of waste is due to increasing industrialization and other developments and it creates major impact on environment. Two main activities to manage solid waste are recycling and composting. This paper focuses on the proper management of the waste generated and the its treatment used, to help the selected village known as Indira Nagar, Uttan.*

***Keywords*—Refused derived fuel, Vermicomposting, Integrated solid waste management.**

I. INTRODUCTION

Solid Waste Management (SWM) is an organized process of storage, collection, transportation, processing, and disposal of solid refuse residuals in an engineered sanitary landfill. It is an integrated process comprising several collection methods, varied transportation equipment, storage, recovery mechanisms for recyclable material, reduction of waste volume, and quantity by methods such as composting; refuse derived fuel (RDF), waste to-energy, and disposal in a designated engineered sanitary landfill. The selection of a suitable SWM process is driven by the source and quality of waste produced. Solid waste is generated from a number of sources which include households, commercial areas, industries, institutions, construction and demolition sites, wild and domesticated animals, parks, and streets.

In India, specially in rural areas as well as in urban areas the major problems affecting solid waste management are unscientific treatment, improper collection and storage. In village level the amount of solid waste is high due to agricultural waste, animal waste, domestic waste. Presently the non-biodegradable materials like plastic, e-waste are increasing. The improper management makes environment unfit.

Solid waste management is a practice in which the waste is stored properly. Then the waste is collected, transported to the treatment plant. Further the refused waste is disposed properly in an organised way. In urban areas, the waste which is generated is stored at community bins and transported to the dumping site. Then this waste is directly burn out. Whereas in the coastal areas the waste is dumped into the sea but this method is very costly and not environment friendly.

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Management of solid waste is a growing concern to the general public at large, local authorities and business communities in cities and town across India. The improper management of Solid waste leads to the pollution. Using public space as dumping area for waste, was the growing problem. The organic waste used in fields, often contaminates with plastic and hazardous waste. Direct release of chemicals in water bodies create water pollution.

The purpose of SWM is to collect waste at the source of generation. Recovery of the recyclable materials for recycling purpose. The main object is to convert organic waste into compost and non-recyclable materials are use for making RDF. This paper is helps to solve the problems are selected area and plan for integrated solid waste management suggest. This lead towards the direction are own. It provides efficient and economical collection and recycling process.

II.MATERIAL AND METHOD

2.1 SOLID WASTE SURVEY

Sr. no.	Waste Types	Waste Types (%)
1	Organic	70.35
2	Fine Earth	7.00
3	Demolition Debris	3.00
4	Plastic Materials, Polythene Bags, Thermocol	10.35
5	Metals	0.30
6	Glass	1.00
7	Soiled Papers, Card Boards	6.00
8	Textiles	0.13
9	Miscellaneous	6.92
TOTAL		100.00

TABLE NO. 01

It is necessary to measure the quantity of waste which is generated. First of all, waste characterization assessment or study of characterization of waste was adopted.

(i). Waste collection: To study the waste characterization, collection of waste sample is done from bins. Then, about 5kg. of waste is collected.

(ii) Sorting: The waste collected from solid waste community bins were sorted, classified, weighted. After this biodegradable and non-biodegradable waste are collected in different bags and then set to lab.

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2.2 PROPOSED PLAN FOR INDIRA NAGAR TO OVERCOME PROBLEM DUE TO WASTE

The ISWM scheme for Indira Nagar, Uttan have been designed to reduce the generation of waste at the source. Also, the amount of waste which is going to or sent to landfill after the recycling or treatment should be minimum in volume. The main factor in ISWM is community or individual person ISWM is successful achieved by their participation.

ISWM SCHEME

1. Segregation of waste at house level. In this, individual participation is important. Separate containers should be used, community bins are provided with leads and placed by using GPS.

2.Composting should be done with the help of experts.

3.To avoid sweeping , open dumping, regular monitoring is necessary.

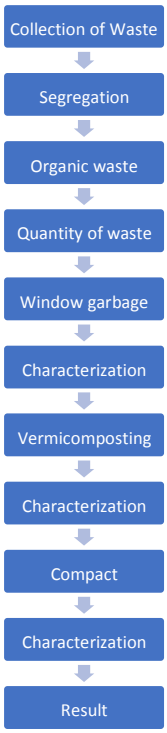
4.Appoint 'NGO' for awareness of people and organize various Campus exhibitions documentary filters.

5. Active participation of community in recycling and preparation RDF.

2.3 METHODOLOGY

1.Vermicomposting

The method of preparing enriched compost with the help of the earthworms is called Vermicomposting. It is the product of decomposition process. This compost improves biological, chemical, and physical properties of the soil.



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MATERIAL:

The material required for Vermi-composting are:

- 1st Layer - Dry leaves [5 cm]
- 2nd Layer - Organic waste [8 cm]
- 3rd Layer - Farm waste , cow-dung [9 cm] • 4th Layer – Earthworms (EiseniaFoetida) • Water as required .

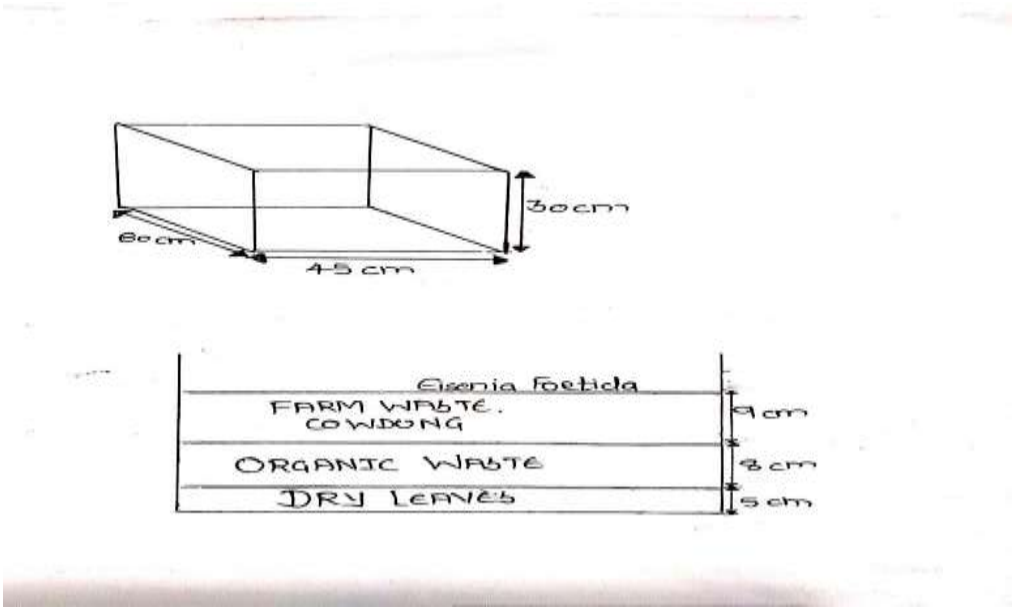

FIG NO.01 DESIGN OF PIT

2.REFUSED DERIVED FUEL

RDF is produced from domestic and business waste which include biodegradable material as well as non-recycling material. Materials such as glass and metal are removed during the treatment process,since they are non-combustable. The metals are removed using a magnet while the glasses by the mechanical screening. After that an air knife is used to separate the light weight materials from the heavy one. The light materials have high calorific value and thus they create the final RDF. The residual material can be sold in its processed form (depending on the process treatment) as a plain mixture or it may be compressed into pellet fuel, bricks or logs and used for other purposes either stand-alone or in a recursive recycling process.RDF is extracted from municipal solid waste and other waste using a mix of mechanical and/or biological treatment methods.

The production of RDF may involve the following steps:

- Bag splitting/Shredding

Sr. no.	Test	Result	Unit

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1.	**Moisture**	**35.6**	**-**
2.	**Temperature**	**26**	**°C**
3.	**Nitrogen**	**0.75**	**%**
4.	**Phosphorous**	**0.32**	**%**
5.	**Potassium**	**0.25**	**%**
6.	**pH**	**6.09**	**-**

- size screening
- agn

etic separation
- Air classifier (density separation)

RESULTS

Sample Name :-Vermicompost.
Sample quantity :- 86gm.

CONCLUSION

The location is selected by keeping in view that the polluting environment created by the Solid waste. The detailed analysis of the waste helps in selecting suitable managing practise for waste disposal. The awareness of people regarding the reuse, recycle, reduce can lead to decrease in the waste load which is coming on Municipal Corporation.

It accelerate the burning process. We proposed a proper solution for the Indira nagar waste as it was suggested to utilize compost as organic fertilizer through the vermicomposting. Also the RDF is used as a fuel in various industries, as a substitute of coal, wood from dry waste.

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