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MANAGEMENT OF WASTE BY RECYCLING AND REUSE A GREEN APPROACH

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ABSTRACT:

The entire world facing a various problem in day-to-day life. The one of the biggest problems is pollutions. It creates many problems one of the major problem is health problem due to water, air, sound and soil pollution. In developed and developing country there is a fast growth of industrialization and urbanization. Due to this pollution increases by the wastage materials without proper treatment on it. This can be control by using some suggestions of panels, NGOs, government agencies and ideas of industry experts to improving the systems. It gives us deep information about the different waste management creativities to find out the scope for the improvement in the waste management for the wellbeing of human life.

Keywords: Waste Management, Pollution, Recycle, Reuse.

INTRODUCTION:

The whole world is being polluted through the years and environment protection agencies are fighting against pollution due to no proper management and utilization of waste.In themodern era there is change in life style, different habitation of human beingand occupation. Improving waste management has several benefits leading to human wellbeing. If there is no proper operation on the waste materialsit gives a significant threat to public health rather than growth and other developments. To avoid these problems the government of Indian has launched the Clean India Campaign. The main pollutants are the solid wastes as compare to liquids and gases, which in turn contaminate the water bodies and restrict the free flow and prevent their natural biological purification [1] There are different types of waste, such as household waste, agricultural waste, industrial waste, health center waste, organic waste and toxic waste [2] The accumulation of solid wastes generates various harmful poisonous gases. The major source of solid wastes, suitable systems for their collection and disposal without harming the environment mainly through reduce, recycling and reuse along with those practiced in the awareness of the environment. In recent years, many studies have focused on understanding food waste at the consumer level. Much less research has focused on retailing, even less on the causes and levels of food waste [3] The vision of waste management in India is the use of waste as resources with increased value extraction through recovery, recycling and reuse.

Management of waste by using 12 principles Green chemistry:

These principles demonstrate the breadth of the concept of green chemistry:

1. Prevent waste: Design chemical syntheses to prevent waste. Leave no waste to treat or clean up.

2. Maximize atom economy: Design syntheses so that the final product contains the maximum proportion of the starting materials. Waste few or no atoms.

3. Design less hazardous chemical syntheses: Design syntheses to use and generate substances with little or no toxicity to either humans or the environment.

4. Design safer chemicals and products: Design chemical products that are fully effective yet have little or no toxicity.

5. Use safer solvents and reaction conditions: Avoid using solvents, separation agents, or other auxiliary chemicals. If you must use these chemicals, use safer ones.

6. Increase energy efficiency: Run chemical reactions at room temperature and pressure whenever possible.

7. Use renewable feedstock: Use starting materials (also known as feedstock) that are renewable rather than depletable. The source of renewable feedstock is often agricultural products or the wastes of other processes; the source of depletable feedstock is often fossil fuels (petroleum, natural gas, or coal) or mining operations.

8. Avoid chemical derivatives: Avoid using blocking or protecting groups or any temporary modifications if possible. Derivatives use additional reagents and generate waste.

9. Use catalysts, not stoichiometric reagents: Minimize waste by using catalytic reactions. Catalysts are effective in small amounts and can carry out a single reaction many times. They are preferable to stoichiometric reagents, which are used in excess and carry out a reaction only once.

10. Design chemicals and products to degrade after use: Design chemical products to break down to innocuous substances after use so that they do not accumulate in the environment.

11. Analyze in real time to prevent pollution: Include in-process, real-time monitoring and control during syntheses to minimize or eliminate the formation of byproducts.

12. Minimize the potential for accidents: Design chemicals and their physical forms (solid, liquid, or gas) to minimize the potential for chemical accidents including explosions, fires, and releases to the environment [4].

Disposal of Waste: Main methods of disposal

Waste collection: The ability to manage a complex and large amount of waste is demands upon an effective collection of system. Collection of waste is the interface between the producer and the waste management system. It is the process of removal of waste rejected from generators. This avoids its increase in cities and allows for more treatments [5] The solid waste from rural areas is more of a biodegradable nature & the same from urban areas contains more non-biodegradable components like plastics & packaging. The repugnant attitude towards solid waste & its management is however, common in both the sectors. Waste has an economic advantage in comparison with many biomass resources because it is regularly collected at public expense. The energy content of waste can be more efficiently exploited using thermal processes than with the production of biogas: during combustion, energy is directly derived both from biomass (paper products, wood, natural textiles, food) and fossil carbon sources (plastics, synthetic textiles). For the many countries that continue to rely on land filling, increased utilization of landfill CH_4 can provide a cost-effective mitigation strategy. The combination of gas utilization for energy with bio covers to increase CH_4 oxidation can largely mitigate site-specific CH_4 emissions [6].

Reduction of unpleasant smell: Waste produces an unpleasant odor that is harmful to the environment. The unpleasant smells are spreads various diseases in human beings. As a result, it inhibits their growth. In this way, waste disposal effectively eliminates all these problems.

Reduces pollution: Waste is the main cause of environmental degradation. For example, waste from household' srestaurants hotels and industries pollutewells lakes rivers lands and atmosphere. Therefore, waste management is a very important. So every citizen having that the environment is not polluted. It also improves the hygiene of the city, so that people can have a better environment to live in.

Reduces waste production: Recycling of the productshelps reducing the waste. It also produces new products that are useful again and gives work. Moreover a process of recycling reduces the use of new products. In this way, industries will reduce their productivity. Recycling process creates jobs. The waste management system needs employees. These employees can perform various jobs from collection to recycling. Therefore, it creates opportunities of new jobs for to the jobless people. In this way they give their contribution to the development of society. In recycling processenergy are generated [7].

Reduce and Reuse: Recycle methods of waste reduction, waste reuse and recycling are the preferred options when we minimize the waste.

There are many environmental benefits that can be derived from the use of these methods. They reduce or prevent greenhouse gas emissions, reduce the release of pollutants, conserve resources, save energy and reduce the demand for waste treatment technology and landfill space.

Treatment on Biological Waste: Composting is the controlled aerobic decomposition of organic matter by the action of microorganisms and small invertebrates. There are a number of composting techniques being used today. These contain: vermicomposting in vessel composting, windrow composting and static pile composting. The process is controlled by making the environmental conditions optimum for the waste decomposers to thrive. The rate of compost formation is controlled by the composition and constituents of the materials i.e. their carbon / nitrogen (C/N) ratio, the temperature, the moisture content and the amount of air. Moisture content greatly influences the composting process. The microbes need the moisture to perform their metabolic functions. If the waste becomes too dry the composting is not favored. If however there is too much moisture then it is possible that it may displace the air in the compost heap depriving the organisms of oxygen and drowning them. A high temperature is desirable for the elimination of pathogenic organisms. However, if temperatures are too high, above 75°C then the organisms necessary to complete the composting process are destroyed. Aeration is a very important and the quantity of air needs to be properly controlled when composting. If there is insufficient oxygen the aerobes will begin to die and will be replaced by anaerobes. The anaerobes are undesirable since they will slow the process, produce odors and also produce the highly flammable methane gas. Air can be incorporated by churning the compost [8].

CONCLUSIONS:

The quantities of waste collected and transported need to be supervised against targets, preferably by citizen observing, through effective management information systems and a recording weigh - bridge: computerized in number of cities. The waste-clearance vehicles should be on-road, and these vehicles are implemented in two-shift. Decentralized ward-wise composting of well segregated wet waste in local parks is recommended, for recycling of organics and also for huge savings in garbage transport costs to scarce disposal sites. Cities must fulfill their necessary manage the waste before funding any open functions, while being granted financial autonomy to raise adequate funds. Waste-management and other charges should be linked to the cost-of-living index, along with levy of “administrative charges” for chronic littering. Numbers of cities are providing conditional funding to residential areas or colonies willing to take responsibility for improved waste-management of their respective areas.

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