

SOLID WASTE MANAGEMENT

Higher standard of living of ever increasing population has resulted in an increase in the quality and variety of waste generations. Solid waste means wastes other than liquid or gaseous and accumulate on earth surface causes pollution. These wastes can be classified in following manner. The solid waste may be of two categories.

(1) **Biodegradable**- Degraded by microorganism like bacteria and fungi eg. all the biotic components and products.

(2) **Non-biodegradable**- It can not degraded by bacteria and fungi for eg. polyethene and its products, glasses, and metal.

(A) Sources of solid waste :-

(i) **Domestic wastes** – Useless bottles, cane, packing paper, disposal glass, plastic sheet, paper, medical waste, broken glass etc.

(ii) **Biomedical waste** – anatomical wastes, pathological wastes infectious wastes.

(iii) **Construction waste** – Sand, debris, wood, concrete, broken bricks etc.

(iv) **Horticulture waste** – Vegetable part, residue, leaves and discarded fruits.

(v) **Slaughter house waste** – Clotted blood, waste mater, intestinal or undigested food etc.

(vi) **Industrial waste** – It included large no of material including factor rubbish, packing raw materials, organic waste, metals, alkali and acidic, ash from thermal power plants, radioactive waste from Nuclear power plant scrub leather etc.

(B) Effects of solid waste :- People clean their houses and commercial area and dump the waste material on soil it causes several problems.

(i) Foul smell – Decomposition of biotic waste release harmful gases release foul or anoxious smell in environment which can be harmful for the localities.

(ii) Good Platform for the vector of diseases- Mosquitoes, flies, insects and rats grow rapidly on dumping area and causes harmful effects on human health.

(iii) Spreads of diseases- Harmful bacteria, viruses and fungi grows on dumping area and causes harmful diseases.

(iv) Toxicity- Toxic metals, inorganic wastes, insecticides, cleaning agents etc accumulates on environment and makes polluted. These toxicants goes in to the ground water by rain water and make polluted.

(v) Global warning- Organic waste like animal dung, human excreta and agriculture waste release CH_4 , NH_3 and CO_2 are causes green hours effects on environment.

(3) Managements of solid waste for the best management of solid waste works on 3R pattern for safe life and environment.

(a) Reduction in use of raw material- reduce the use of raw material will decrease the production of waste'

(b) Reuse of solid waste- Used material like paper, glass, polythene, metals and rubbers products reuse it will also decrease the demand of new material.

(c) Recycling of solid waste- Recycling of wastes products like metals, glass, paper can be recycling by several processes and can make new products.

Matter which can not be use in 3R patterns and are known as discarded solid waste and these can be dump on earth surface by following methods.

(1) Sanitary Landfill- It is modern technique to fill the non-fertile land, usually the dumping area is covered with plastic sheet which protect the contamination of ground water.

(2) Biogas Plants- Animal wastes, plant wastes dead leaf, and cell debris produce the methane gas during anaerobic decomposition and decomposition of biotic wastes in the tank, we can trap the gas by biogas plants and use as a source of energy.

(C) Biofertilizers- After decomposition in biogas plants the waste material we can use as a source of energy.

(D) Composting- Animal wastes, plant wastes dead leaf, and cell debris etc can be decomposed by the using of earthworms.

(E) Incineration- Burning of solid waste at high temperature more than 900°C but this process release harmful gases in the environment but it is a big tool to for solid waste managements.

(F) Pyrolysis- Solid waste is kept in the closed chamber at high temperature in the absence of O₂, it reduce the size of waste we can dump that waste in a small place