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A study on the Effect of Garbage on Environment and its Management.

Alka Gupta*, and Susmita Bajpai.

Department of Chemistry, Brahmanand P.G. College, Kanpur, India.

ABSTRACT

Garbage dumps are health and environmental hazards for the millions of people living there. Crowds of ragpickers, pigs, cows, dogs and cats are seen wallowing in the garbage. How do the residents of colonies treat their garbage? Unfortunately every day the houses are swept clean and garbage tripped over the boundary wall on to the back lane. The boundary wall no longer provide protection against diseases and pollution. Different types of garbages such as hospital wastes, non- biodegradable wastes, biodegradable mass and toxic chemical wastes affects our health and environment very badly. Since it is our garbage, we produced it, so we must dispose of it in a fitting manner. It is our responsibility to clean and keep our neighbourhood and our city.

Keywords: garbage, environment, management, hazards.

**Corresponding author*

INTRODUCTION

In most localities there is an overflow of open garbage dumps in the by lanes, parks and on the road side. Besides being eyesores, these garbage dumps are health and environmental hazards for the millions of people living there. Crowds of rag pickers, pigs, cows, dogs and cats are increasing day by day. This rotting biodegradable matter is a breeding ground for flies and mosquitoes, germs responsible for plague, tuberculosis, cholera, dysentery, diarrhoea, leprosy, eye infections, skin allergies and breathing problems.

The approximate composition of city garbage is 50% organic matter, 25% plastic and 25% other matter. The uncleared garbage stays in the city and year after year the heap increases and hence cities are becoming more and more unhygienic. There are too many open eating stalls on our road sides stall owners rarely have a bin for leaf plates or wrappers. Most people are so used to this situation that they do not even bother to search for civic authorities dust bins. They just throw the wastes on the road or in a corner. Untreated organic matter, if left in the heat and humidity even for a short time, start decomposing and then it becomes a stinking permanent mass.

It is our garbage, thus we must dispose of it in proper manner. The three steps of garbage management of a city corporation are collection, transportation and disposal. The maximum expenditure in garbage management is on transportation. Article 21 of our Constitution gives us the right to clean and wholesome environment.(1) To live in a garbage free city, the residents should collectively sue the municipal corporations in courts and thus force them to remove garbage from cities.

RESULT AND DISCUSSION

Everyday the houses are swept clean and garbage tripped over the boundary wall on to the back lane. There, it piles up and slowly becomes a permanent heap for the neighbours, who only add on to it. It rots, stinks, breeds flies, mosquitoes and bacteria, the boundary wall no longer provide protection against diseases and pollution. A perfumed hanky on the nose cannot keep the stench away. Garbage can be segregated into five types. Some of these can be treated or disposed off separately. These are:

- Hospital Wastes
- Non-biodegradable wastes that can be recycled
- Non-biodegradable wastes that cannot be recycled
- Toxic Chemical wastes
- Biodegradable mass

Hospital wastes

Of the total waste produced in hospitals, approximate 47% is biomedical waste which is hazardous as it is contaminated with disease-causing pathogens.(2) Body fluids, dripping with blood, discarded medical equipment, soiled cotton, plasters, dressings and surgical and autopsy wastes can become a major health hazard as they provide fertile environs for bacteria, viruses and other micro organisms to multiply. Pathogens like Escherichia, Salmonella, Vibrio, Hepatitis are prevalent and active till these wastes are incinerated and can be carried far away through various agents. The list of diseases caused due to improper disposal and treatment of hospital wastes endless, but the majority of them are deadly, such as AIDS, Viral hepatitis, tuberculosis, bronchitis, gastroenterities and other skin and eye related disorder.

Hospital waste should be segregated and incinerated. No biomedical waste shall be stored beyond a period of three days. All biomedical wastes which are not incinerable shall be pretreated, disinfected and shall be disposed off in an environmentally sound manner. Different coloured bins have been provided for different types of wastes. Controlled air incinerators are the best incinerators to get rid of all types of hospital wastes. In these incinerators the heat and air for combustion is regulated in such a way as to first volatilise/gasify the waste in conditions of inadequate air and then totally destroy the waste by adequate heat and excess air.

Non-Biodegradable but recyclable wastes

The predominant non-biodegradable but recyclable waste is plastics. There would not be a single household which is not discarding some plastic trash everyday. House wives either sell these materials to local kabari or throw them with the garbage. In almost all eventuality the plastic trash reaches the big kabari who, in turn sells all this to a whole seller and finally to plastic recycling units. The raw material for the manufacture of plastic items constitutes resins, which consist of thousand of particles, which melt into a syrupy liquid when heated and can be shaped into almost any form.(3) The other recyclable but non-biodegradable garbage are non-ferrous metals. Most of this garbage is imported from other countries and recycled here. The metallurgical process used in these metals are highly inferior, producing a lot of pollution and toxic wastes. Lead is one of the toxic wastes all over the world. Lead storage batteries are used to provide power for electrical systems of automobiles electronic instruments, computer etc. As the labour is quite cheap in India, lead smelting is quite profitable and popular. Places near lead smelter air has a very high lead. Phasing out is the best solution to eliminate the risk of lead pollution in the environment. The alternative storage cells such as silver-zinc cell and Ni-Fe cells are rather more efficient than lead storage cells which are being used in aeroplanes all over the world.

Non-Biodegradable, non-recyclable garbage

House construction is one of the very big industries in India. This leaves a lot of silicates as a garbage which have to be disposed off at a landfill site. Though landfill sites should only be used for disposing of non-biodegradable garbage, but biodegradable garbage is also disposed of at such site. Solid wastes deposited in landfills degrade chemically and biologically to produce solid, liquid and gaseous substances. Biological activity within a landfill first results in aerobic decomposition. An aerobic decompositions sets in once the oxygen supply in the pit is exhausted. This produces organic acids, carbon dioxide, sulphates of iron, manganese and a substantial amount of methane.(4) To tap the gas being released from the dump, large perforated coiled pipes can be inserted at different locations in the area for drawing out the gas.

Some Toxic chemical garbage

The garbage from market places which have drycleaning units, dyeing units, furniture shops, leather processing units, acid cleaning units, paints and varnish shops, tyre and vehicle workshops and LPG gas cylinder stores.

The list of chemicals present and their probable effects on health and environment is presented below.(5)

S.No.	Chemical in Garbage	Effects on health and environment
1.	Ammonia	Light headedness
2.	Chromium	Carcinogenic
3.	Cadmium	Hair loss, Osteoporosis, affect liver and kidney
4.	Caustic Soda	Skin rashes
5.	Lead	Deposited in bone marrow and numerous harmful effects
6.	Sulphur dichloride	Pungent smell
7.	Amyl acetone	Eye, nose and throat irritation
8.	Benzene	Carcinogenic
9.	Carbon tetrachloride	Damages optic and cranial nerves
10.	Formaldehyde	Irritant to mucus membrane
11.	Formic acid	Eye irritant, allergen
12.	Napthalene	Excessive perspiration
13.	Trichloro ethane	Heart attack, miscarriage
14.	Toluene	affects central nervous system

Bio-Degradable garbage

In nature, all dead matter is gradually acted upon by the forces of nature such as the sun, wind, rain and microbes which serve to breakdown complex materials into simpler molecules. If such material is left to decay on road sides it begins to decompose and stink and invites many diseases. Instead, the process of decomposition can be used to convert organic wastes which we generate everyday to produce compost which can help us keep our surrounding clean and green.

The various methods of compositing are as follows.(6)

Anaerobic	Aerobic	Vermicomposting
can be used for generating biogas	very little odour can be completed in 2-3 weeks.	odourless, rich in macro and micronutrients, can be dried and stored easily
Disadvantages- It takes long time (4-8 months)	Attracts animals unless properly covered and protected, maintainance of 55°C temperature	Earthworm needed safe to hande, controlled conditions like moisture, temperature necessary
Needs a patch of land	Requires land and sheds	Land, water, sheds and earthworms.

CONCLUSION

To live in a garbage free city, phase out the heaps of open stinking garbage from their localities by starting a scientific, eco-friendly decentralized garbage management scheme. Community participation and co-operation of the public are vital for efficient waste management. Garbage should be collected from door-to-door and taken to the community bin. Sorting of recyclable matter should be undertaken by the employees of the contractor. The contractor should provide his workers with a uniform, gloves and boots for segregation of garbage. Biodegradable matter should be converted into compost by vermicasting. This compost can be sold and will be another source of income.

When residents start understanding garbage management, the two separate bins are used i.e; green bin for biodegradable garbage and yellow bin for non-biodegradable garbage. If people become more responsible about the amount of garbage they produce and about segregating it perhaps we can avoid creating new generations of ragpickers. If the children could be freed from such activity, NGO’s could focus more on education and other alternatives.

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