KHAIRA COLLEGE , KHAIRA ,BALASORE

DEPARTMENT OF CHEMISTRY

YEAR	NAME OF THE SEMINAR TOPIC	NO. OF PARTICIPANTS	DATE
2022-2023	Solid Waste Management In India	68	19.04.2023

Departmental Seminar topic '**Solid Waste Management In India** ' held on 19.04.23 , 11am at Auditorium under the Presidentshif of Principal, Chief Speaker S.N.Rout, Reader in Chemistry, Dr.H.K.Mahatab College ,Kupari,Bls and Staff members , Honours students .

(1) India is rapidly shifting from agricultural based nation to industrial and services oriented county. India has different geographical and climatic regions and four seasons, accordingly residents living in these zones have different consumption and Waste generation pattern. Municipal Solid Waste Management (MSWM), a critical element towards sustainable metropolitan development comprises segregation, storage, collection, relocation, processing and disposal of solid waste to minimize its adverse impact on environment. Several studies suggest that reutilization of solid waste is not only a viable option to MSWM but also desirable socially, economically and environmentally.

(2) Following major categories of waste are generally found in MSW of India like -

i) Biodegradable waste like food, kitchen waste, green waste of vegetable, fruit, flowers, leaves, paper etc.

ii) Recyclable waste like glass, bottles, cans, metals.

iii) Composite waste like torn clothes, waste plastic toys.

iv) Inert waste matter like Construction and Demolition debris, dirt.

v) Domestic hazardous waste like waste Medicine, E-waste, Paints, Chemicals. Light bulbs, Fertilizer and Pesticide containers, Batteries, Shoe polish.

(3) Critical examination of important parameters of MSWM practice with respect to Indian scenario is described briefly as -

i) Generation of wastes from residential, commercial and institutional sources.

ii) On-site handling, storage and processing .

iii) Collection

iv) Transportation

v) Processing

vi) Recycling

vii) Disposal

(4) The following disposal practices are in use in India :-

a) Open dumping :-

In India , MSW generated is usually directly disposed on low lying area in routine way violating the practices of sanitary land filling. Unscientific dumping is prone to flooding and major source of surface water contamination during monsoon and ground water contamination.

b) Land filling :-

Land filling would continue to be extensively accepted practice in India, through metropolitan centers like Delhi, Mumbai, Kolkata & Chennai have limited availability of land for waste disposal and designated landfill sites are running beyond their capacity.

c) Landfill gas to energy plants :-

Planning Commission Report (2014) indicated that 62 million tons of annual MSW generated in urban area can produce 439 MW of power from combustible component, 72 MW of electricity from landfill gas and 5.4 million metric tons of compost for agriculture use. The energy potential from landfill gas at selected sites in Delhi is 8.4 MW, Mumbai= 5.6 MW, Ahmedabad = 1.3 MW and Pune had 0.7 MW annually.

(5) Biological treatment of Organic Waste :

The waste generated in India has more organic content than that generated by developed countries. Following composting methods are commonly adopted in India.

i) Aerobic composting :
In big Indian cities , power driven composting units have mean installed.

ii) Vermi- Composting :
Vermi-composting is carried out by introducing earthworms on semi decomposed organic wastes. India's biggest vermi composting plant of 100 million tons per day capacity is located in Bengaluru.

iii) Anaerobic digestion :

Anaerobic decomposition of waste is known as biomethanation process. A number of biomethanation schemes are under planning and inception stage in cities such as Delhi, Bangalore, Lucknow to utilize waste generated from vegetables market and yard wastes.

iv) Thermal Treatment :
Thermal treatment of solid wastes can be accomplished by Incineration, Pyrolysis and Plasma Arcgasification. In India for burning hospital waste, small incinerators are used. In India, limited Gasifiers were installed to burn Agrobiomass. Two gasification units has been installed, one at Nohar, Hanumangarh, Rajasthan and another at Gaul Pahari campus, New Delhi. Refuse derived fuel (RDF) is another technology which uses to produce power/thermal energy from MSW and reduce load on landfill. A few RDF plants were set up at Hyderabad, Guntur and Vijayawada in Andhrapradesh.