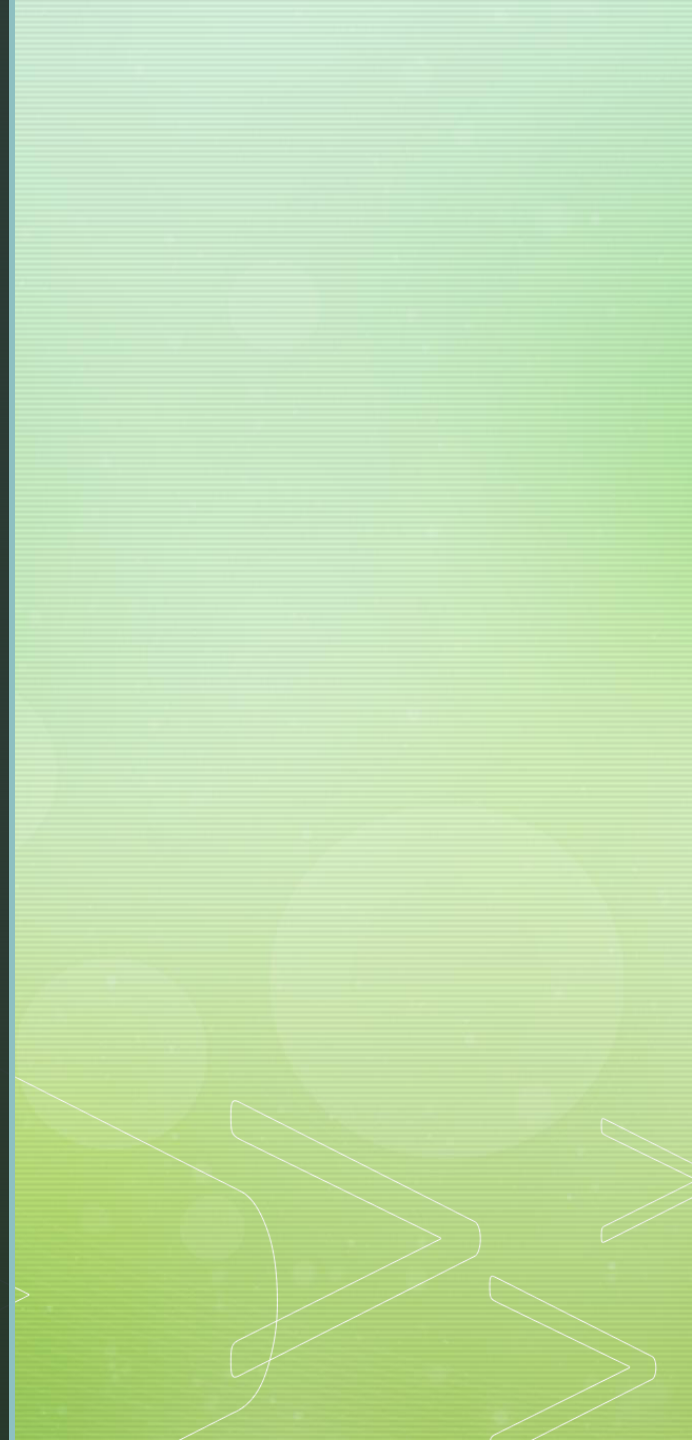


# WASTE MANAGEMENT



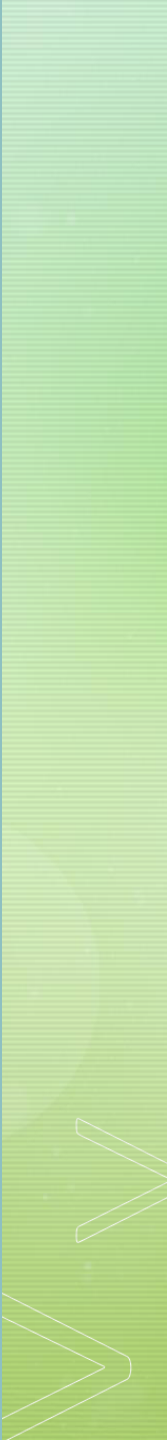
DR MUSTAFA WAHEED KHWAJA

COMMUNITY MEDICINE DEPARTMENT





# LEARNING OBJECTIVES

- Explain the importance of waste management in health.
  - Describe management of waste [organic of human and animal origin] as per water carriage system
  - Describe the management of waste [organic of human and animal origin] as per conservancy system
  - Describe management of solid waste.
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- A conservancy system focuses on the overall management of solid waste, encompassing various waste management activities, while a water-based conveyance system specifically deals with the transportation and treatment of liquid waste, primarily wastewater or sewage.



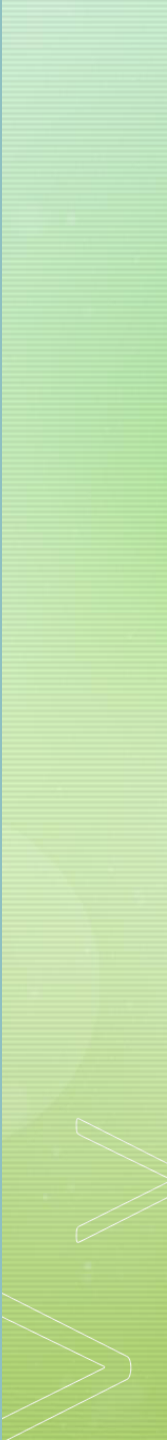


# ROLE OF WASTE MANAGEMENT IN PUBLIC HEALTH

- Effective waste management is vital for preserving public health. It prevents the spread of diseases, controls disease vectors, protects the environment, ensures occupational safety, and promotes the well-being of communities.
- By prioritizing proper waste management practices, we can create healthier and safer living environments for everyone.



# Disease Prevention

- Disease Prevention: Improper waste management can lead to the proliferation of disease-causing organisms.
  - Waste, especially biomedical waste from healthcare facilities, can harbor pathogens such as bacteria, viruses, and parasites.
  - Adequate waste management practices, including proper collection, storage, transportation, treatment, and disposal, help prevent the spread of infectious diseases by minimizing the exposure and transmission of these pathogens.
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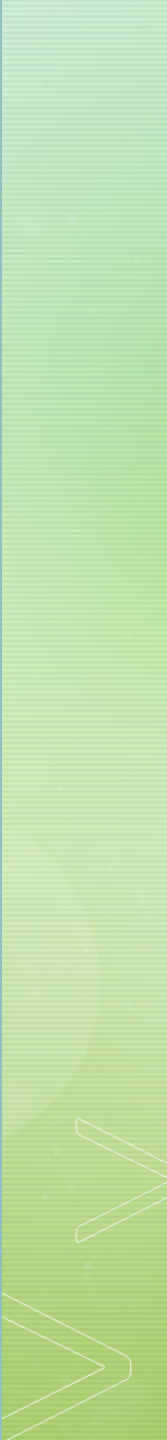
# Vector Control

- Vector Control: Inadequate waste management can attract disease-carrying vectors like flies, rodents, and mosquitoes.
- These vectors can thrive in waste and spread diseases such as dengue fever, malaria, and cholera.
- By implementing effective waste management strategies, including proper containment and timely removal, the breeding and proliferation of disease vectors can be controlled.





# Environmental Protection

- Environmental Protection: Improper disposal of waste can have detrimental effects on the environment, which, in turn, can impact human health.
  - Dumping waste inappropriately can contaminate soil, water bodies, and air, leading to pollution and the release of harmful chemicals and toxins.
  - These pollutants can find their way into food chains and drinking water sources, posing risks to human health. Proper waste management practices, such as recycling, incineration, and controlled landfilling, help mitigate environmental pollution and minimize health hazards.
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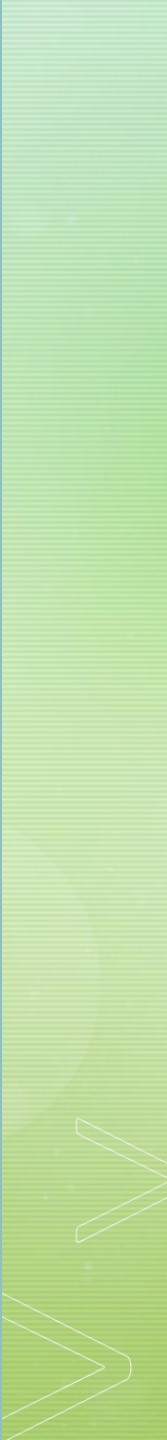
# Occupational Safety

- Occupational Safety: Healthcare workers and waste management personnel are directly exposed to potentially hazardous waste materials.
- Implementing appropriate waste management protocols ensures their safety by minimizing the risk of injuries and infections. Adequate training, proper handling techniques, and the use of PPE are crucial in safeguarding the health of those involved in waste management activities.





# Community Well-being

- Community Well-being: Proper waste management contributes to the overall well-being of communities.
  - Clean and hygienic surroundings promote a healthier living environment, reducing the risk of illness and improving the quality of life for residents.
  - Additionally, efficient waste management systems instill a sense of civic responsibility and encourage community participation in maintaining cleanliness and hygiene standards.
- 



## Pharmaceutical and Chemical Waste

- Pharmaceutical and Chemical Waste: Proper management of pharmaceutical and chemical waste is crucial to prevent health and environmental risks associated with expired or unused medications and hazardous chemicals.



- Recycling and Resource Conservation: Emphasizing recycling and resource conservation in waste management promotes sustainability, reduces carbon footprint, and conserves natural resources.





- **Public Awareness and Education:** Promoting public awareness and education on waste management empowers individuals to make responsible choices and actively participate in waste reduction efforts.





- Emergency Situations and Disease Outbreaks: Effective waste management is crucial during emergencies to prevent health risks and environmental hazards, especially in handling medical waste and PPE during disease outbreaks.





- Regulatory Compliance and Policies: Government regulations and policies establish standards for waste management to protect public health, and compliance ensures a safe and healthy environment.










- Conservancy system are The system is unhygienic since everything is visible. Water Carriage Systems are The system is hygienic. Sewers are laid below the ground and hence excreta etc.
- A conservancy system focuses on the overall management of solid waste, encompassing various waste management activities, while a water-based conveyance system specifically deals with the transportation and treatment of liquid waste, primarily wastewater or sewage.





## Steps involved in the management of organic waste in water carriage systems:

- **Collection:** Systematic gathering of organic waste from human and animal sources, such as wastewater and sewage.
  - **Transportation:** Transporting the collected waste to treatment facilities or disposal sites through sewer networks or septic tanks.
  - **Treatment:** Employing physical, chemical, and biological processes to remove contaminants, reduce the organic load, and disinfect the waste.
  - **Disposal or Reuse:** Properly disposing of the treated waste or utilizing it for non-potable purposes like irrigation or industrial processes.
- 
- 



- **Monitoring and Quality Control:** Regular monitoring of treatment processes, effluent quality, and compliance with regulatory standards.
- **Environmental Protection:** Preventing water contamination, minimizing pathogen and pollutant release, and promoting sustainable water resource use.
- It's important to consider local regulations and infrastructure availability when implementing waste management practices. Regular maintenance and resource allocation are necessary for effective systems that protect public health and the environment.





# Management of organic waste in a conservancy system

- Segregation: Organic waste, including food scraps and animal waste, is separated from other waste types.
- Collection: Organic waste is collected separately in dedicated containers or collection points within the conservancy system.
- Composting: The collected organic waste is taken to composting facilities or bins for controlled decomposition with microorganisms, resulting in nutrient-rich compost.





- **Vermicomposting:** Some conservancy systems use specific worms to accelerate decomposition, producing nutrient-rich vermicompost.
- **Reuse or Disposal:** Compost or vermicompost can be utilized as soil amendments in gardening, agriculture, or landscaping, or distributed to farmers. If not reused, it can be disposed of responsibly.
- **Education and Awareness:** Promoting education on organic waste management and the benefits of composting is vital for fostering responsible waste practices.





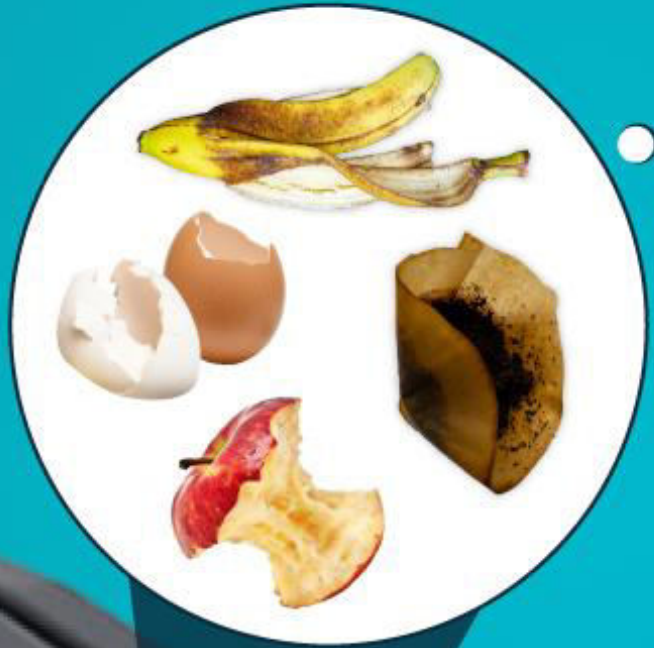


# Organics from your garbage become compost

They are separated first and sent to a composting facility



*Environmental Services*



# Compost Bin

Wood pallets are available free from many sources and can be easily recycled into compost bins. Yard waste can be composted in this simple unit, where it will sit undisturbed for slow decomposition.

## A common method of building a compost pile:

**1** Place down a layer of coarse material such as branches.

**2** Add a 6- to 8-inch layer of organic material such as shredded leaves or grass clippings.

**3** Add a 1-inch layer of manure or rich garden soil.

**4** Repeat these layers and keep the pile moist.

**5** Stir the pile weekly during the summer and monthly during the winter.

Select pallets with narrow gaps.



Use metal posts and wire to secure and fasten pallets together.

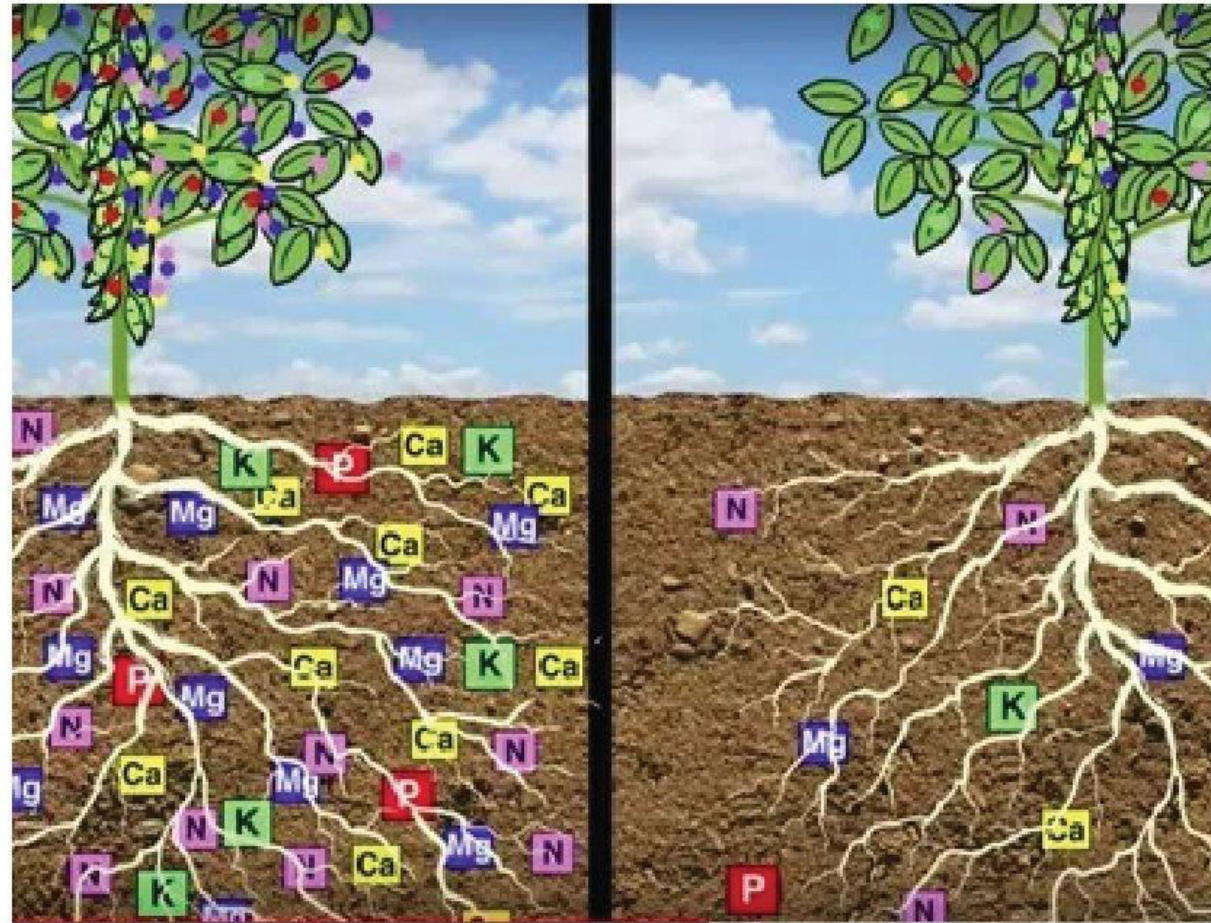


# PLANT BOOSTER

**GROW**  
VERMICOMPOST



**NO**  
VERMICOMPOST



Segregating  
Waste Drive  
by Community  
members





# ORGANICS

## ✓ YES

Food Waste



Food Soiled Paper



Plants



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## ✗ NO

No Plastic & Styrofoam



No Glass & Metal



No Rubber Bands, Twist Ties, & Produce Stickers



No Yard Waste



No Coffee Cups



No Diapers



NO PET WASTE



ECOSAFE-6400

COMPOSTABLE

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## Management of solid waste

- **Generation:** Solid waste is generated from households, industries, and commercial establishments.
- **Segregation:** Waste is segregated into recyclable, non-recyclable, and hazardous categories.
- **Collection:** Waste is collected from different sources using trucks or collection centers.
- **Transportation:** Waste is transported to treatment or disposal facilities.
- **Treatment:** Waste is treated through recycling, composting, or waste-to-energy processes.
- **Disposal:** Non-recyclable waste is disposed of in properly managed landfills.
- **Monitoring and Regulation:** Waste management activities are monitored to ensure compliance with regulations and environmental protection.



# Solid Waste Management



Thank  
you

