



M.SC, Semester III.
Treatment of Organic Waste
**Treatment Methods of
Organic Waste**



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Treatment Methods of Organic Waste

Introduction & Disadvantages



Incineration

Treatment Method: Burn with high temperature

Treatment Time: several hours

End Product: Ashes (High Toxic)

Requirements: Air pollution monitoring

Disadvantages:

- High construction
- High maintenance cost
- **Air pollution**
- CO₂ emission
- Dioxin
- 20% of **ashes** should be reprocess
- Waste of organic matters



Treatment Methods

Landfill

Treatment Method: No treatment

Treatment Time: Several years ~ decades

End Product: None

Requirements: Space, waterproof layers, air exhaust

Disadvantages: **Air pollution**, **Large Area**, Under earth water pollution, Fire explosion



- Prohibited to landfill without treatment in EU (Council Directive on Landfill 1999/31/EC)

Treatment Methods

Compost

- **Treatment Method:** Fermentation
- **Treatment Time:** 3-6 months
- **End product:** Soil Conditioner
- **Requirement:** Large area, constantly re-pile
- **Disadvantages:** **Smells, space & time**, carbon lose



Treatment Methods

Fast Fermentation

- **Treatment Method:** Microbes decomposition
- **Treatment Time:** 24~72 Hours
- **End product:** Months of storage required before use
- **Requirements:** **Storage area**, small material size, low oil content
- **Disadvantages:** Smells, space, energy consumption



Treatment Methods

Biogas

- **Treatment Method:** Anaerobic bacteria decompose
- **Treatment Time:** 7-14 Days
- **End product:** CH₄ and sludge (further treatment)
- **Requirement:** Highly sealed tanks, large area
- **Disadvantages:** space & time, **high construction cost,** **high**



Treatment Methods