Municipal Composting

REPUBLIC SERVICES
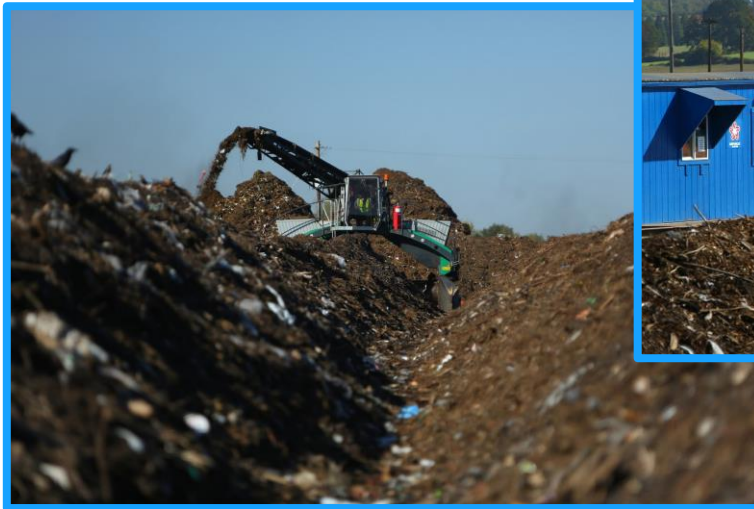
What is Composting?

1. **Complex ecosystem of microbes...**

    - It is a biological process

2. **...that break down organic feedstock...**

    - Green waste – yards, parks, grounds

    - Food waste

        - Fruits, vegetables, etc
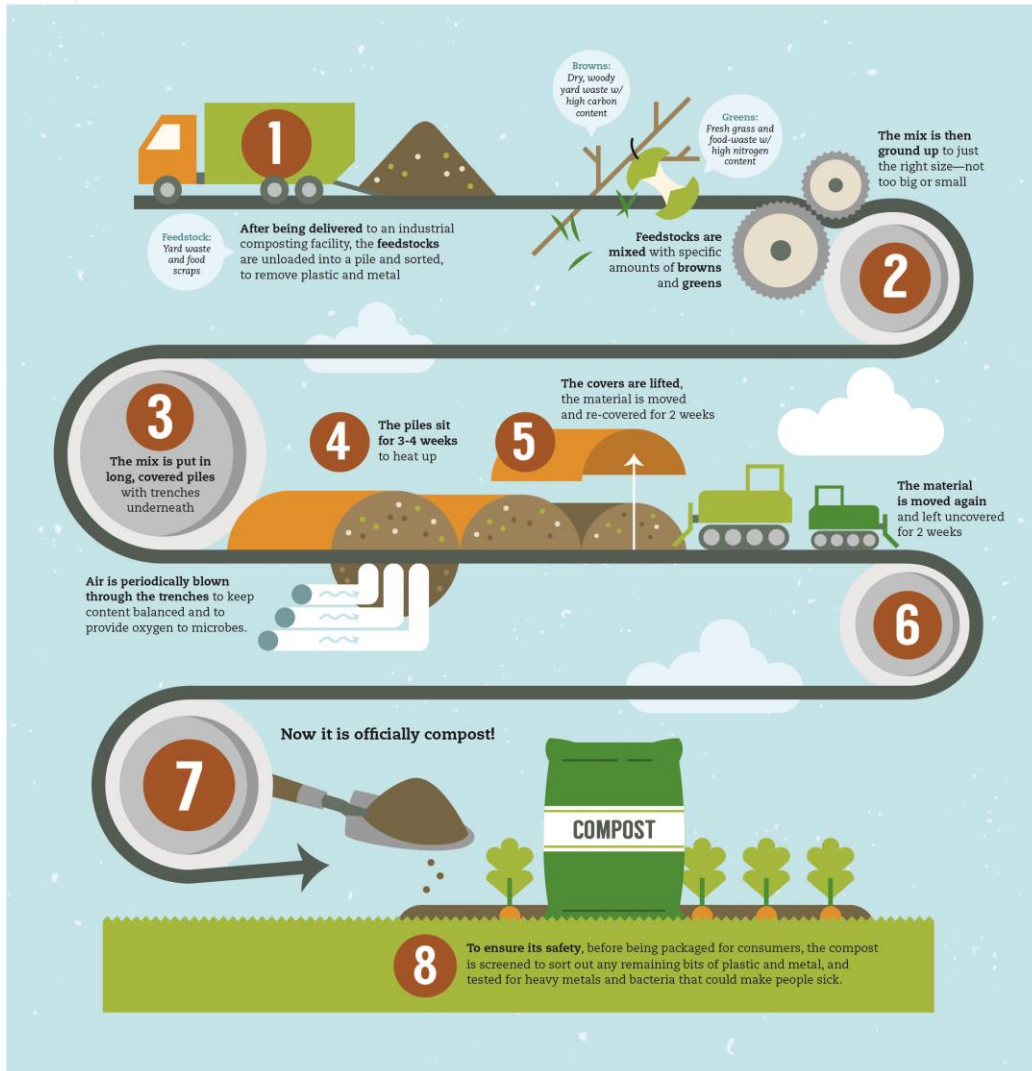
        - Meats, cheeses (with exceptions)

3. **...in a compost "manufacturing" facility.**

    - Investment and equipment varies depending on inputs/outputs

How does it work?

- Multi-step process that requires daily care, management
  - Nutrient balance
  - Particle size
  - Moisture content
  - Oxygen flow
  - Temperature

- Same conditions as any solid waste management facility
  - Permits
  - Operations
  - Compliance

Benefits

- Improves soil conditions

    - Structure, porosity, density (better root environment)

    - Water holding capacity

    - Supplies macro and micronutrients

- Erosion control

- Reduces organic matter in landfills

- Sustainability – recycling of organics

- Service desired by environmentally focused residents

→ *Great option for compliance with landfill organics bans*

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Feedstock Considerations

Generators

Residential

Commercial

Industrial

Organic Material

- Leaves, grass clippings
- Yard trimmings
- Flowers and weeds
- Small branches
- Unpainted wood
- Fruits, vegetables
- Coffee grounds
- Meats, dairy, seafood
- Soiled paper
- Shredded paper
- Animal waste, diapers
- Bones, eggshells
- Compostable dishwear
- Food packaging
- Bagged food waste
- Grease, liquids
- Animal byproducts

Collection Method

Technology Considerations

- **Capital: $500k – $20M+, Tip fee = $60+/ton**

- *Type, amount, mix of organics determine facility needed*

  - Traditional (typically 90% green waste, 10% food)

    - Passive/Open Pile

    - Aerated/Turned Windrows

    - Aerated Static Pile (ASP)

    - In-vessel composting

  - Emerging (higher amount of food waste)

    - Covered, Aerated Static Pile (CASP)

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Challenges

- Feedstock Contamination

- Odors

- Vectors/Pests

- Leachate/Runoff

- Herbicides, Heavy metals, Pathogens

- Compost End Markets

- Compost Quality

→ *Requires significant financial and operational commitment*