

Understanding the processing options

FACTSHEET 5

*Food and Garden Organics
Best Practice Collection Manual*

Organics processing options

- There are three general treatment options for organic residues:
 1. combustion (including gasification)
 2. composting
 3. anaerobic digestion

Choice of processing option

- The choice of processing technology is primarily governed by:
 - What outcomes council and the community expect to achieve
 - Location and size of proposed site and associated environmental constraints
 - Type and quantity of expected feedstock
 - Investment and operating costs
 - Type of products to be manufactured
 - Sustainability issues (such as measured through LCA or carbon footprinting)

Processing technology types

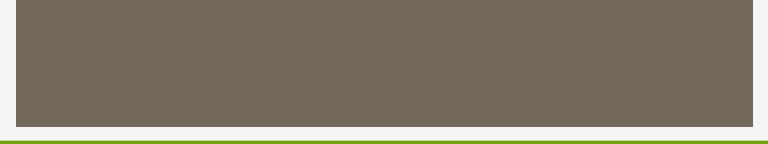
- Vermicomposting
- Open windrow composting
- Aerated static pile composting (with or without covers)
- In-vessel composting (tunnel, box, vertical silo, drum)
- Fully enclosed composting (agitated bed, agitated pile)
- Anaerobic digestion (wet, dry)
- Combustion (including pyrolysis and gasification)

Processing technology comparison

Technology	Aeration	Air purification	Investment cost	Land area required
Vermi-composting	Passive	No, but possible	Low to medium	Large to medium
Windrowing	Turning, passive aeration	No	Low	Very large
Aerated static pile	Positive/negative forced aeration	No, but possible	Medium	Medium
In-vessel composting	Agitation, mechanical turning, forced aeration	Yes, but exceptions	Large	Medium to small
Fully enclosed composting	Agitation, mechanical turning, forced aeration	Yes	Very large	Medium to small

Points for consideration when choosing a technology

- Investment costs (\$ / tonne throughput)
- Operating costs (\$ / tonne throughput)
- Operational experience
- Options for process management
- Options for achieving desired product quality
- Risk of emitting odour / bio-aerosols and releasing leachate
- Ability to process different feedstock
- Options for expanding processing capacity
- Footprint (tonne annual throughput per square meter)
- Energy and water use



NB: Information in this presentation is taken from the *Food and Garden Organics Best Practice Collection Manual* (2012) published by the Department of Sustainability, Environment, Water, Population and Communities. The full document is available on the department's website

www.environment.gov.au/wastepolicy/publications/organics-collection-manual