

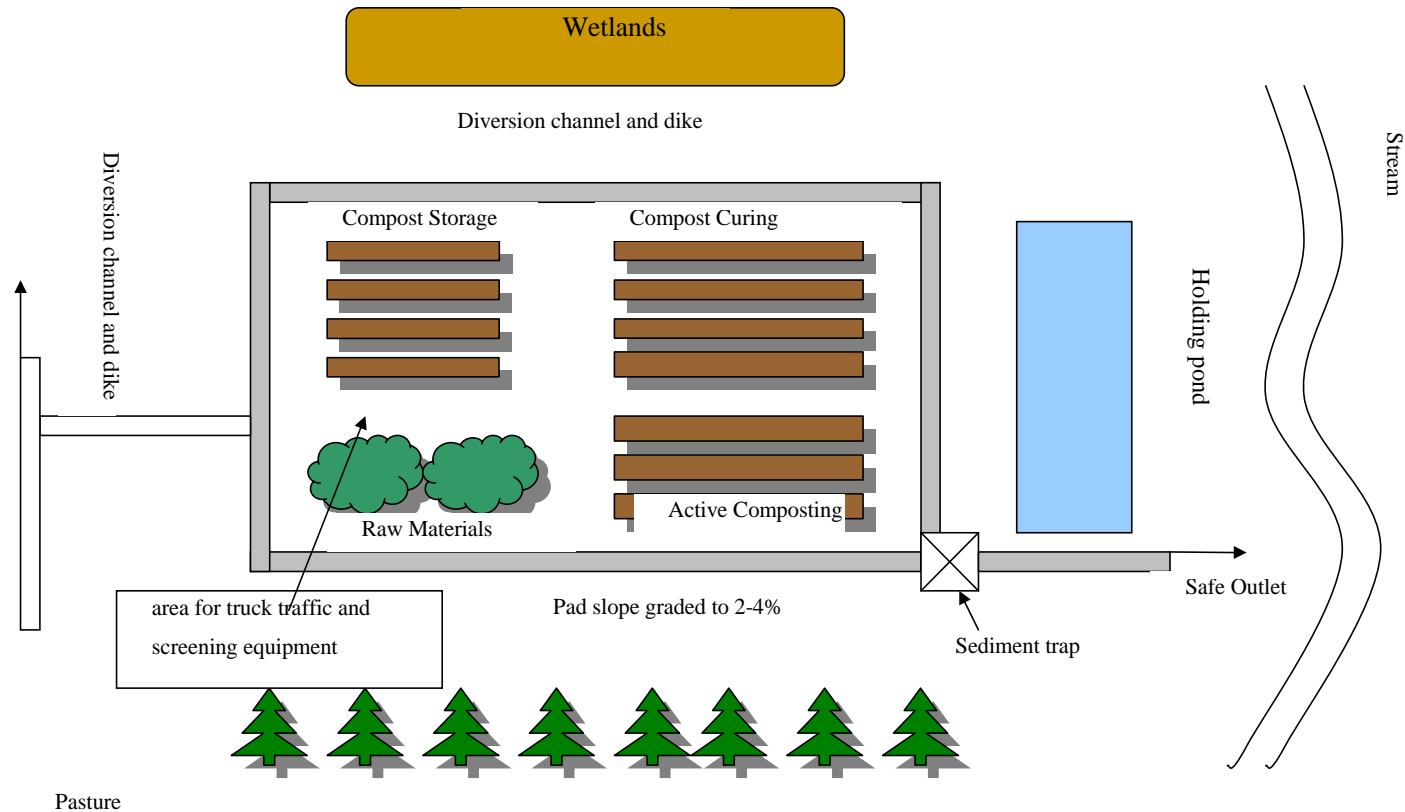
Composting Site Selection

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Composting Site Selection

- Incorrect compost site selection can cause major problems, both in the short and long term.
- Can start with a preliminary sketch
 - Prevailing winds
 - Traffic flow
 - Landscape
 - Run off
 - Surrounding land uses
 - Environment information

Sample Layout and Drainage System



Buffer Zones

- Buffer zones to minimise potential environmental impacts
- To protect water sources
- Horizontal and vertical separation distances

Considerations when selecting a site

- Dwelling
- Commercial buildings
- Industrial building
- Farm
- Roadway
- Water courses
- Water table
- Bedrock



Other considerations

- Composting surface 1%-6% slope
- Avoid flood plains, high ground preferable
- Drain to settling pond then normal run off
- Downwind of sensitive receptor (odour dust etc)
- Aesthetics
- Animal by products (not usually applicable for greenwaste)

General Area Requirements

- Depends on Compost technology (windrows or invessel)
- Throughput
- Raw material storage
- space for finished product
- Buffer areas (odour, noise, pollution control)
- Holding ponds
- Fire lane
- Truck queuing
- Vehicle parking
- Future expansion
- Biofilter (could be 50% of total surface area for composting)

Area Requirements for Windrows

- Equipment
- Volume of material handled
- Shape of pile
- Daily volume of material to be composted
- Pile dimensions
- Windrow volumes and numbers
- Sketch layout



Area Requirements for In-vessel (not generally for greenwaste)

- Far less than windrows
 - Volume of finished compost
 - Curing time
 - Pile height and spacing
 - Equipment movement

Curing and Storage

- about $\frac{1}{2}$ of original volume
- Area requirements can vary from 25% to 200% of the size of composting area
- Spacing requirements depend on
 - Volume of finished compost
 - Length of time required for curing and storage
 - Pile height and spacing
 - Equipment movement

Additional Factors to Consider

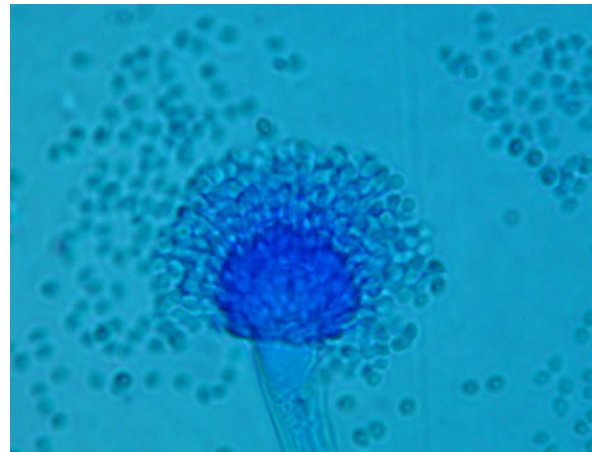
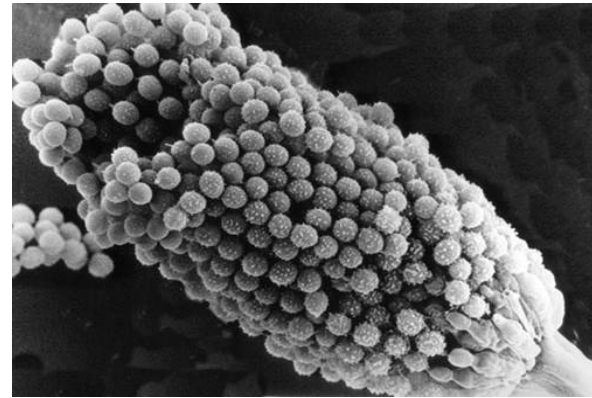
- Water Quality
 - Managed through proper siting, compost mixtures, pile management
- Run off and Leachate
 - Can be managed through good composting
 - Land application and recirculation of run off

Odour

- To minimise odour
 - Maintain pile porosity at 40% or greater
 - Mix appropriate materials (high C:N ratio controls ammonia release)
 - Small piles to avoid compaction
 - Aerate piles (5-10% O₂)
 - Moisture 45%-55%
 - Good pile drainage, no puddles

Bioaerosols

- Composting is a microbial process
- Agitation of the compost produces bioaerosols
- Literature review carried out by Cre members indicated potential health risk to general public is minimal, can be managed if certain procedures carried out
- Document outlines set back distance depending on certain factors, feedstock, prevailing winds, topography, pile management
- EPA recommend baseline monitoring



Vectors (less of a problem with greenwaste composting)

- Vectors are animals and insects or pests that carry pathogens from one host to another
- Control measures
 - Maintain clean site
 - Combine fresh putrescible organics with C source-cover with finished compost to deter flies, birds etc
 - Promote rapid decomposition through aeration
 - Rodent control-hawk, specialist pest control companies

Dust

- Dust Control
 - Keep materials damp
 - Damping down of hard capped areas
 - Maintain clean site

Noise

- Audible noise depends on
 - Loudness
 - Frequency
 - Daytime and background noise
- Some levels decrease with distance from source
- Buffers of trees, bunds and distance

Fire Hazard

- Rare occurrence
- Adequate water supply
- Road configuration
- Fire certificate for composting buildings