Large Scale Vermicomposting

Philippa Stanley
Environment Director
ORM Waste Management plc
We’ve Got Worms!
Who are The ORM Group of Companies?

WORM BREEDING
Organic Resource Management Ltd

- Existing worm breeders with 20+ years of experience
- Network of >100 breeders within UK and Ireland started 1999
- Provides support and training to ensure consistent supply of worms
- Appeals to landowners & farmers wishing to diversify
Who are the ORM Group of Companies?

WORM BREEDING

WASTE MANAGEMENT
Biodegradable Waste Management
Who are ORM Waste Management plc?
It all started with the humble worm…

- About 3000 species, less than 30 found in UK & Eire
- Breathe through their skins – must remain moist
- No eyes, but are light sensitive
- Hermaphrodites
- Live on diet of organic materials
- Burrowing worms leave casts on the surface
- Surface dwelling worms live in woodland environments
Epigeic – surface dwelling worms

Dendrobaena sps.
Outdoor Breeding Beds
Hermaphrodites do it on their side....
Cocoons
Manual Harvesters........
Now more mechanised!
Indoor Fattening Trays
Indoor Fattening
Sorting the worms
Composition of MSW

- Compositional analysis of MSW indicates that 50 – 60 % by weight is biodegradable
Harvested worms ready for work

- Foot & Mouth outbreak
- ABP Regs
- Precluded worm digestion of catering wastes
- Started looking for pre-composting system
Composting Methods

• Static piles
  – Long time to compost

• Open windrows
  – Labour intensive

• In-vessel ‘box type’ systems
  – Infrastructure costs prohibitive

• EcoPOD Technology
Ecopod
Ecopod
Sealing the POD...
Temperature Linked Aeration & Remote Monitoring
Why Use EcoPOD?

- Flexible: feedstock, capacity, location
- Leachate, odour, and vectors are controlled
- No wind blown litter
- No turning required
- Less weather dependent
Search for a suitable shredder..
Bag & Tub Our Finished Products

- Mobile bagging machine
- Tows behind pickup
So where are we operational?

- Norfolk (2 sites)
  - Mixed organics – catering wastes
  - Mixed organics - feathers
- Nottingham (1 site)
  - Mixed organics
- Northern Ireland  1 site
  (currently in the planning process)
- Republic of Ireland 1 site
- 6 other locations in the pipeline
- Estimated tonnage 350,000 tonnes pa by 2007
ORM North Norfolk
ORM North Norfolk
Vermidigestion Beds

ORM Waste Management plc
Coloured mulch
End Products
Compost products

Multi Purpose Compost from the Wormcast company
100% Organic Peat Free

Wormcast Enriched Compost from the Wormcast company
100% Organic Peat Free
Research Projects

- Bangor University
- University of East of England

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Growth Trials - Tomatoes

Total number of tomatoes harvested

Percentage Vermicompost

0 20 40 60 80 100

Total number of marketable tomatoes

Percentage Vermicompost

0 20 40 60 80
Grassland Biomass

Grassland biomass (g dry weight m⁻²)

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dry weight (g)
Why hasn’t it been done before?.....

- Vermiculture & Vermicomposting is popular in USA and Australia & now becoming more popular in Europe.
- Various trials conducted in UK & Ireland
- Quantities of worms needed
- Worms have needs!
- In 1980s and 90s - wrong time and place
- Too obvious
• In Ancient Egypt, earthworms were considered so indispensable to the agricultural economy that Cleopatra supposedly declared the earthworm sacred, and any export of earthworms was subjected to the death penalty.
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