# The Status of Vermicomposting in North America

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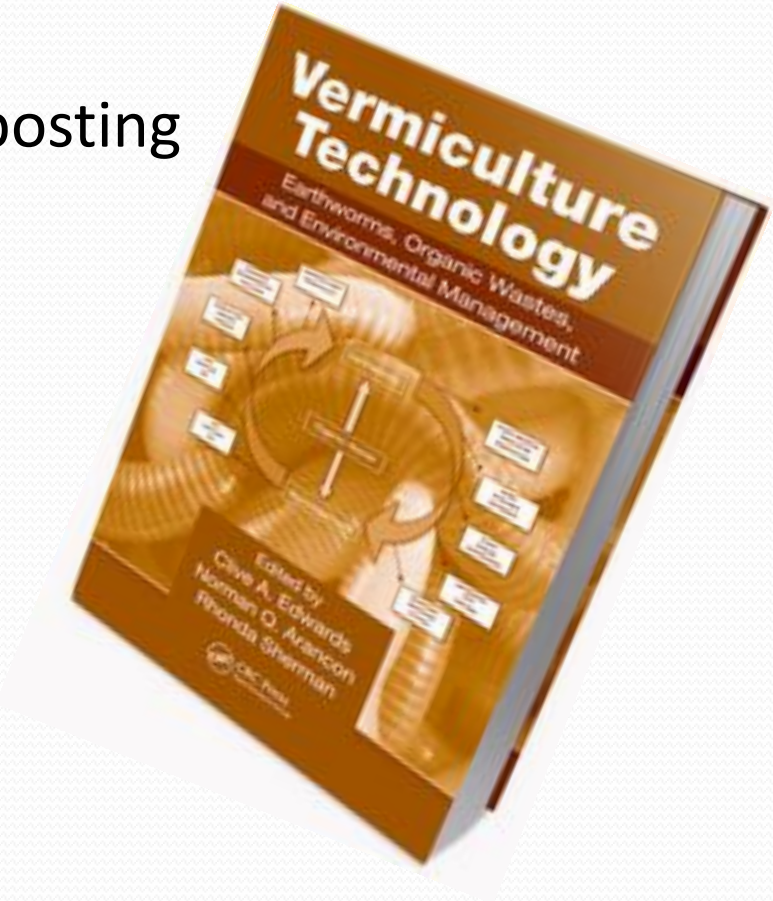
# Chapter in Our New Book

- ***Vermiculture Technology: Earthworms, Organic Wastes & Environmental Management***
- First scientific book on vermicomposting
- 600 pages
- Publisher: CRC Press
- Ask me for a flyer



# Distinguishing Characteristics of Earthworm Operations

- Emphasis or purpose of operation
- Feedstock (sources, types of earthworm feed)
- Region
- Vermicomposting system
- Earthworm species utilized

# Vermicomposting vs. Vermiculture

- *Vermicomposting* facilities utilize earthworms to convert waste products to soil amendments
- *Vermiculture* facilities concentrate upon production of earthworms for sale


# Feedstock as Income vs. Expense

- Large vermicomposting facilities typically follow model of composting operations
- Feedstocks include yard debris, vegetative food residuals, herbivorous animal manure, cardboard & paper waste, biosolids
- Pre-composting manures, yard debris and food residuals often takes place prior to vermicomposting

# Temperate Regions Predominate

- Large outdoor windrow facilities are common on West Coast
- Southeastern U.S. is the second major region for vermicomposting (covered systems more common)
- Rest of N. America has indoor and in-vessel systems

# Vermicomposting Systems

- Pits, trenches, beds, bins, trays, windrows, wedges, & continuous-flow digesters
- Indoor systems may be in permanent buildings, polyethylene structures, Quonset huts, or pole barns with adjustable sides on soil, asphalt, or concrete
- In-vessel digesters vary according to ability to control:
  - Temperature, moisture, aeration, feedstock application, separation of vermicompost from incoming feedstocks

# Factors for Differences in Systems

- Geography
- Amounts of feedstocks to be processed
- Availability of capital investment, land, existing buildings, and labor
- Accessibility of water or concern for its conservation
- Whether operation's emphasis is upon vermicomposting or vermiculture
- State or local regulations

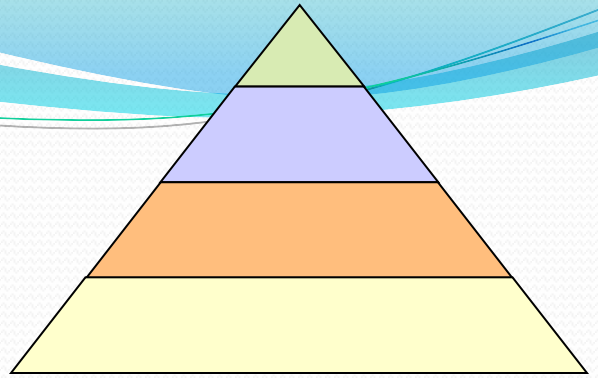
# Earthworm Species Used

- *Eisenia fetida* has leading role among earthworm species throughout U.S. and Canada
- Some vermicomposting operations have mixed species
- Vermiculture operations may breed more than one earthworm species
- Increasing interest in cultivating species other than *E.f*
  - *Eisenia hortensis* (European nightcrawler) in particular
  - Lesser interest in *Eudrilus eugeniae* (African nightcrawler), *Perionyx excavatus* (blueworm), *Pheretima hawayana* (Alabama Jumper)- (limited to warmer climates)

# Commercial Vermicomposting as a Private Enterprise

- **Composting** facilities in N. America may be owned either:
  - Privately
  - By a municipality
  - By joint-partnership of the two entities
- Less common to find a vermicomposting operation owned by a municipality
- Vermicomposters must focus on profit-making potential

# Pyramid Schemes



- Gross representation of potential earthworm reproductivity coupled with phenomenal forecasts of future demand = duped investors
- “Buy-back contracts” sold to investors who are promised exorbitant rates of return
- Reports of questionable activities have come from California, Oklahoma, Florida, Ohio, Nevada, New Mexico, and other states
- *Beware*: if it sounds too good to be true, it probably is!

# Top Reasons for Facility Failure

- Undercapitalization
- Difficulties with regulators
- Unstable markets
- Inadequate marketing methods

# Vermicompost or Castings?

- ‘Vermicompost’ and ‘castings’ are used interchangeably
- ‘Castings’ is term of choice for most growers
- Scientists call it ‘vermicompost’
- ‘Vermicompost’ can be perceived as containing compost

# Sales of Vermicompost & Extracts

- Vermicompost has a way to go before it's as accepted as peat moss, cow manure, etc. in garden centers
- Compost currently has greater market recognition than vermicompost
- Huge gap in marketing between the 3,000 composting facilities in N. America and 100's of vermi operations
- Gap may shrink as more composters and soil blenders add vermicompost to their mixes
- Growing trend: brewing and sale of vermicompost extract; large spike in sales in 2009

Some producers charge $400 per cubic yard for their vermicompost

# How to Bring Vermicomposting on Par with Composting Industry

1. Vermicomposting must be recognized by solid waste sector as a viable alternative for managing organic residues

   - Receive municipal tipping fees and grants

2. Greater attention should be focused on marketing vermicompost and referring to published research studies

3. Composters and soil blenders who add vermicompost to their products could secure a greater fraction of the marketplace

*cont….*

# Vermicomposting Recommendations

*continued…*

4. Composting companies could do on-site vermicomposting and partner with nearby vermiculture or vermicomposting facilities
5. On-site vermicomposting for institutions and businesses has huge potential as future growth industry

   - Vermicomposters can sell earthworms, in-vessel systems, and/or expertise
6. Increasing research efforts into pathogen reduction via vermicomposting may establish vermicomposting as a valuable means of processing sludge & contaminated waste

# Vermicomposting Recommendations

*continued…*

7. Further identify the biological mechanisms in vermicompost responsible for increased growth and vitality of plants

    - Will promote wider use of vermicompost in agricultural and horticultural settings

8. Hope that a decrease in dubious investment schemes will result from an increase in the dissemination of factual information about vermicomposting

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Based on book chapter "The Status of Vermicomposting in North Carolina" by Rhonda Sherman & Peter Bogdanov in ***Vermiculture Technology: Earthworms, Organic Wastes, and Environmental Management***