



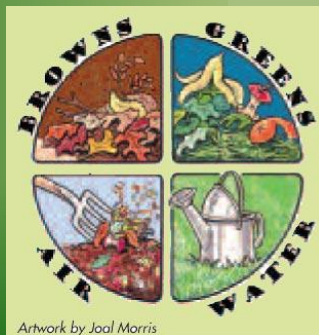
Student Compost Cooperative

Basics and troubleshooting

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5 Factors of Success

1. TEMPERATURE
2. SUBSTRATE
3. MOISTURE
4. AERATION
5. MIXING



5 Factors of Success

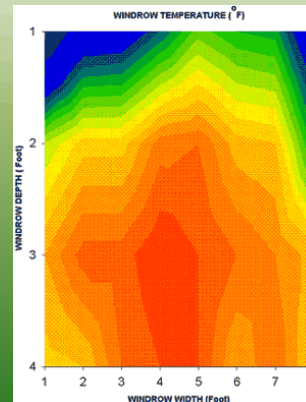
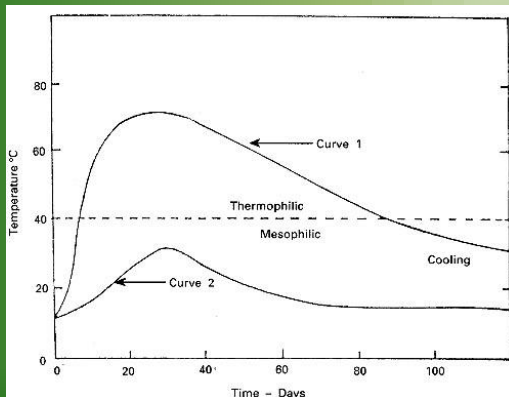
1. TEMPERATURE

2. SUBSTRATE

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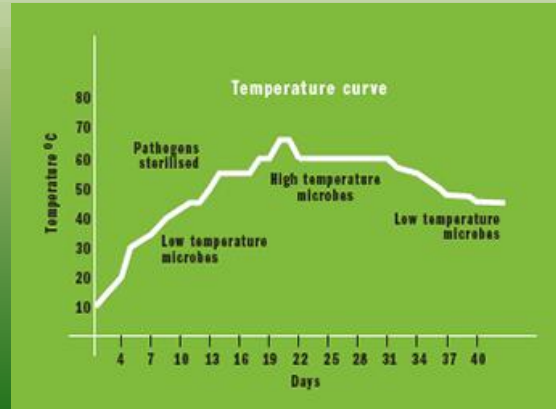
4. AERATION

5. MIXING



TEMPERATURE

- **Master variable**
- Heat generated by microbial action
- Indicates microbe health
- 40-60 degrees C (100 to 140 F)
- Temp peak in 1-2 days (for small/medium pile)
- Above 40 C for 5-14 days
- Size determines temperature curve



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SUBSTRATE

- **Browns and Greens**

- **Browns**

- Low nitrogen
- Low moisture
- 1 part brown (by weight)



- **Greens**

- High nitrogen
- High moisture
- 1 part green (by weight)



- **Particle size**

- ↓ size = ↑ surface area = ↑ action

- **BULKING AGENTS**

- big pieces = more air

RELATION TO TEMPERATURE

- Heat generated by microbes' consumption and waste.
- Warm compost=feasting microbes

List of Browns

leaves, paper, peat moss, sawdust, cornstalks, hay and straw, grass clippings, garden waste

List of Greens

Kitchen waste such as vegetable scraps, old food, coffee grounds, egg shells,

DO NOT COMPOST!!!

Meat, dairy, oils or oily foods, meat-eater manure, catlitter, chemicals, synthetic materials



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MOISTURE

- 50-60% moisture
- Damp, not wet
- Microbes' living medium
- Add water when turning

RELATION TO TEMPERATURE

- Movement and reproductive medium for microbe's
- Warm compost = moving microbes
- Facilitates decomposition



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AERATION

- **Compost is aerobic**
- ↓ Particle size = ↓ aeration
- Bulking agents = ↑ aeration
- Related to mixing
- Temperature spikes

RELATION TO TEMPERATURE

- Microbes need to breathe
- More O₂ = more microbes
- More microbes =
faster compost



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MIXING

- Promotes aeration
- Distributes and removes pockets of
 - air
 - Moisture
 - Microbes
 - Substrates
- **Makes microbes happy**

RELATION TO TEMPERATURE

- Microbial facilitation
- Mixing = temp spikes
- Cold indicates turning needed



TROUBLESHOOTING

Indicators of imbalance

- No/slow decomposition → Causes: Too brown or dry, needs turning
- Low temp → Causes: too dry or brown, needs turning
- High temp → Causes: Too green, too much heat trapped
- Bad smell → Causes: Too wet or green, needs turning
- Pests → Causes: Unwanted materials, easy access



Hey, this food should be in the compost. Beary bad!



MICROBES AND YOUR COMPOST

- Think of it as a microbe farm
- You provide the home, food, water-all the inputs needed to raise healthy creatures.
- In return, the microbes efficiently convert your waste into rich growing medium for plants.



QUESTIONS AND LINKS

- <http://www.compostingcouncil.org/>
- http://compost.css.cornell.edu/Composting_homepage.html
- <http://whatcom.wsu.edu/ag/compost/>
- http://casfs.ucsc.edu/education/instruction/tofg/download/unit_1.7_compost.pdf
- <http://www.compostinfo.com/tutorial/microbes.htm>

