From Garbage to Gold

Turning Organic Material Remains into a Valuable Resource

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Compost - What is it?

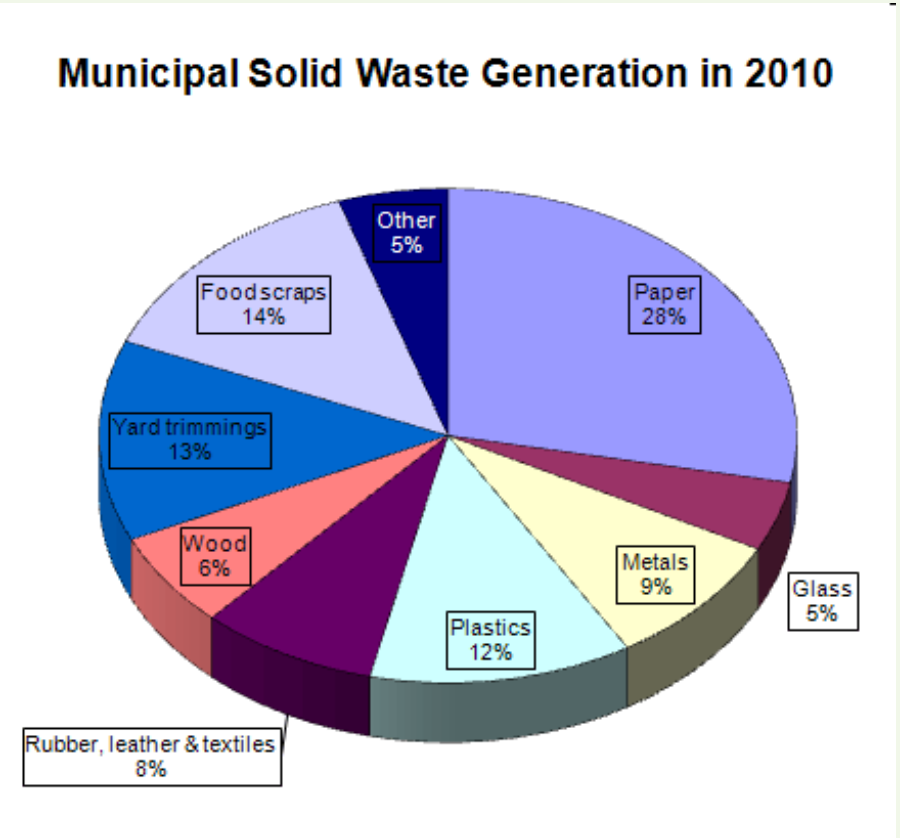
- ‘a mixture of decayed plants and other organic matter used by gardeners for enriching soil’
- ‘Compost is the microbiologically stable end product capable of supporting seedling germination and plant growth that results from a process of organic matter manipulation under specific conditions that support aerobic microbiological activity and elevated temperatures.’

Compost - What is it?

‘Compost is the end product of the decomposition of organic matter.’

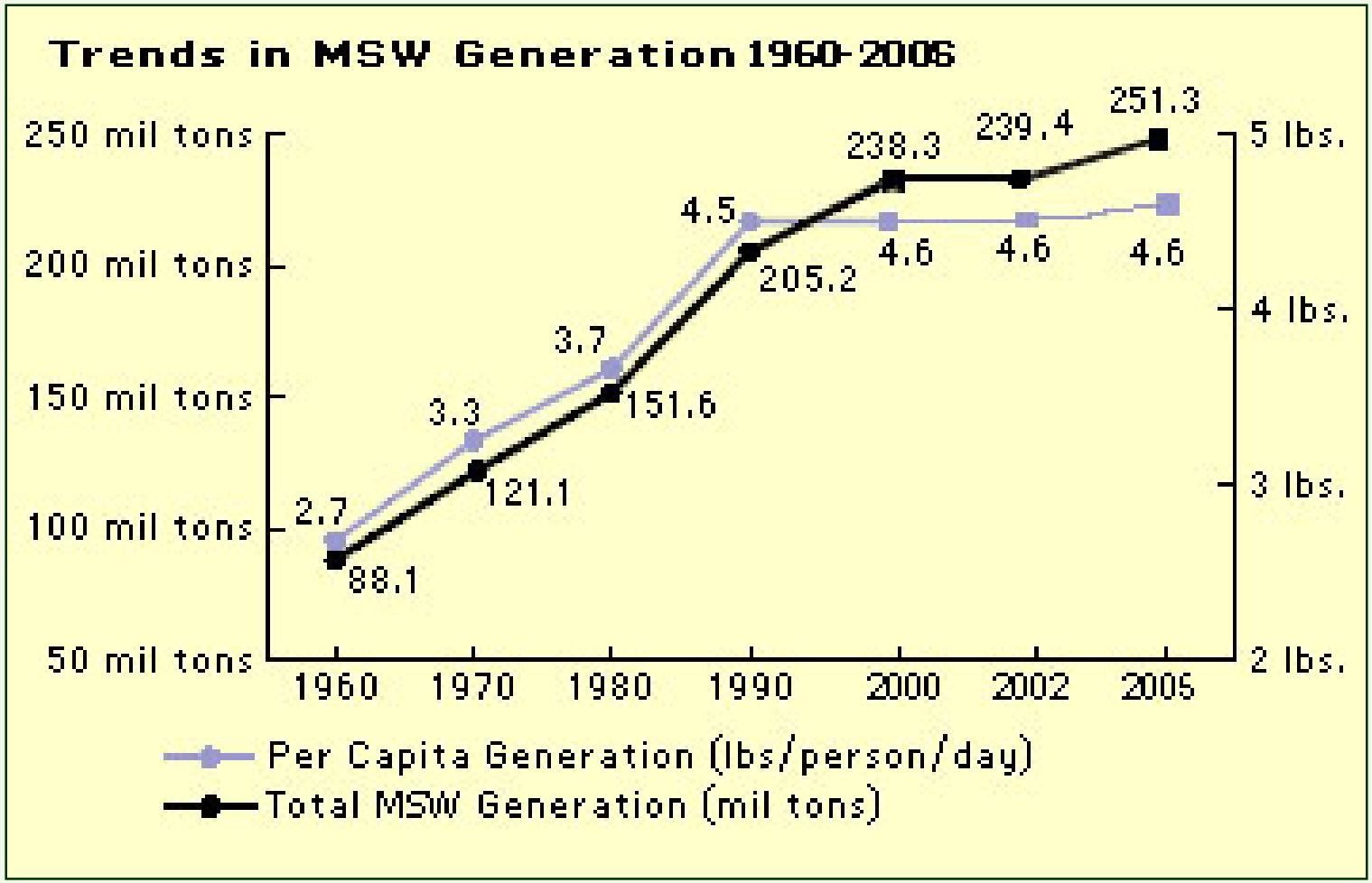
Compost - Why create it?

To decrease waste disposal



http://www.fal.com/solid-waste-management.html#solid-waste

Compost - Why create it?



Compost - Why create it?

Rhode Island - Solid Waste Generation

•Rhode Island generates ~1.5M tons of solid waste each year.

~25% is recycled or composted;

~20% is transported and disposed out of state

~55%, or 750K tons, is currently disposed in the Central Landfill

Source: Rhode Island Resource Recovery Corporation

Compost - Why create it?

- Soil amendment
  - improves soil structure
  - improves drainage
- Nutrient source
  - for plants
  - for soil organisms
- Moisture retention

Compost - Why create it?

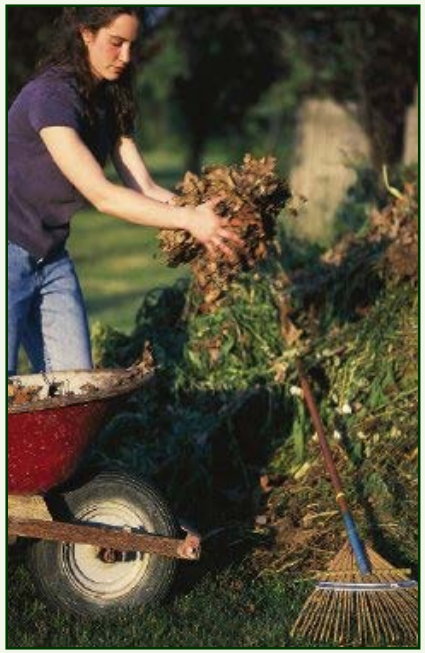
‘Black Gold’

Composting - How to do it

- Collect kitchen organic materials:
  - vegetable & fruit remains
  - coffee grounds & paper filters
  - egg shells
  - nut shells

Composting - How to do it

- Collect backyard organic materials:
  - grass clippings
  - dry leaves
  - shrub & tree trimmings
  - vegetative garden remains



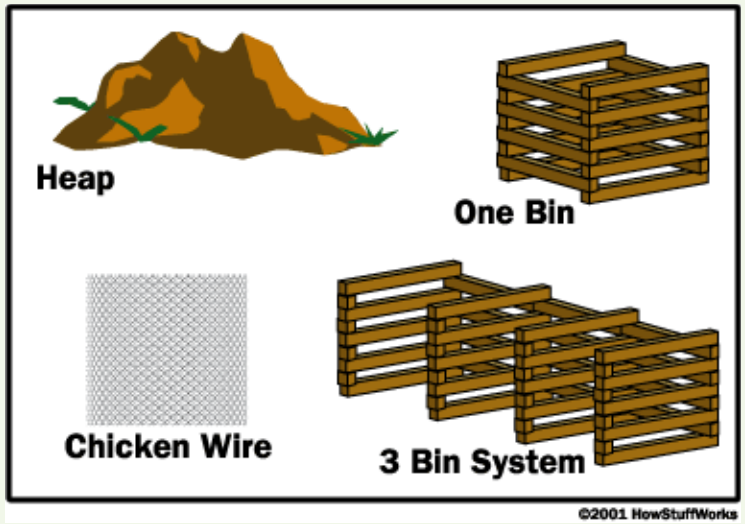
Composting - How to do it

Collect other compostable organic materials:

- weeds
- paper napkins & towels
- tea bags
- hay & straw
- cardboard rolls
- livestock manure (fresh)
- sawdust

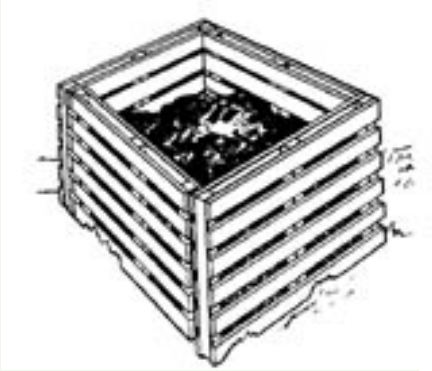
Composting - How to do it

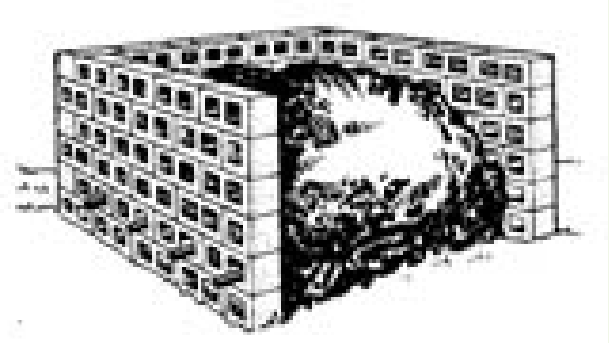
- Choose a convenient, level, well-drained location
- Decide whether or not you'll use a compost bin and what type of bin
- Build a pile that is minimally 3x3x3 feet



Composting - How to do it

Built compost bins





Composting - How to do it

Ready-made compost bins

Composting - How to do it

Compost bins

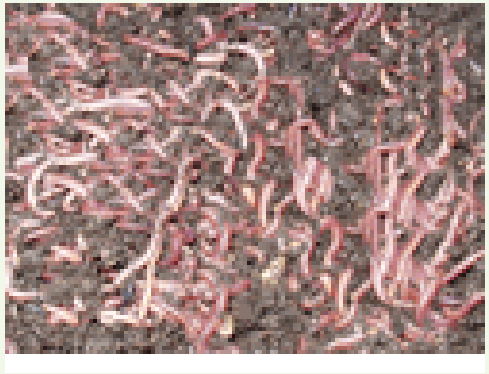
- stationary or static composters - containment, capacity heat retention, aesthetics, low cost
- tumblers - mechanical mixing, rodent deterrent, aeration tools not needed

- digesters (‘vermicomposters’) - useable indoors

Composting - How to do it

Vermicomposting

- Ideal for composting kitchen food scraps
- Use colony of ‘red wigglers’ to decompose matter
- Indoor activity



Composting - How to do it

Building the backyard compost pile

- form a base of coarse twigs
- alternate 4 - 6” layers of high-carbon and high-nitrogen materials
- build into 1 cubic yard pile
- thoroughly mix the layers

Composting - How to do it

- High-carbon material (brown material)
  - dry leaves
  - woody material
  - dried weeds
  - hay & straw
  - paper products
- High-nitrogen material (green material)
  - grass clippings
  - vegetative remains
  - fruit remains
  - coffee grounds
  - some other food remains

Composting - How to do it

General Rules of thumb

- Carbon rich material - brown, dry material
- nitrogen rich - green succulent or wet material
- 3 parts dry (75%) to 1 part wet (25%)

Composting - How to do it

What not to compost

- meat scraps and bones; animal fats
- dairy products
- fish scraps
- dog and cat wastes
- diseased or insect-ridden vegetation
- yard trimmings with chemical pesticides
- coal or charcoal ash
- highly acidic matter

Composting - How to do it

Your job:

- Be conscious of pile placement - limit extremes
- Regularly add material and mix
- Keep it hot
- Periodically moisten
- Let others do the rest of the job….

Composting - How to do it

Their job:

Tertiary Consumers

centipedes, predatory mites, rove beetles, fomicid ants, carabid beetles

Secondary Consumers

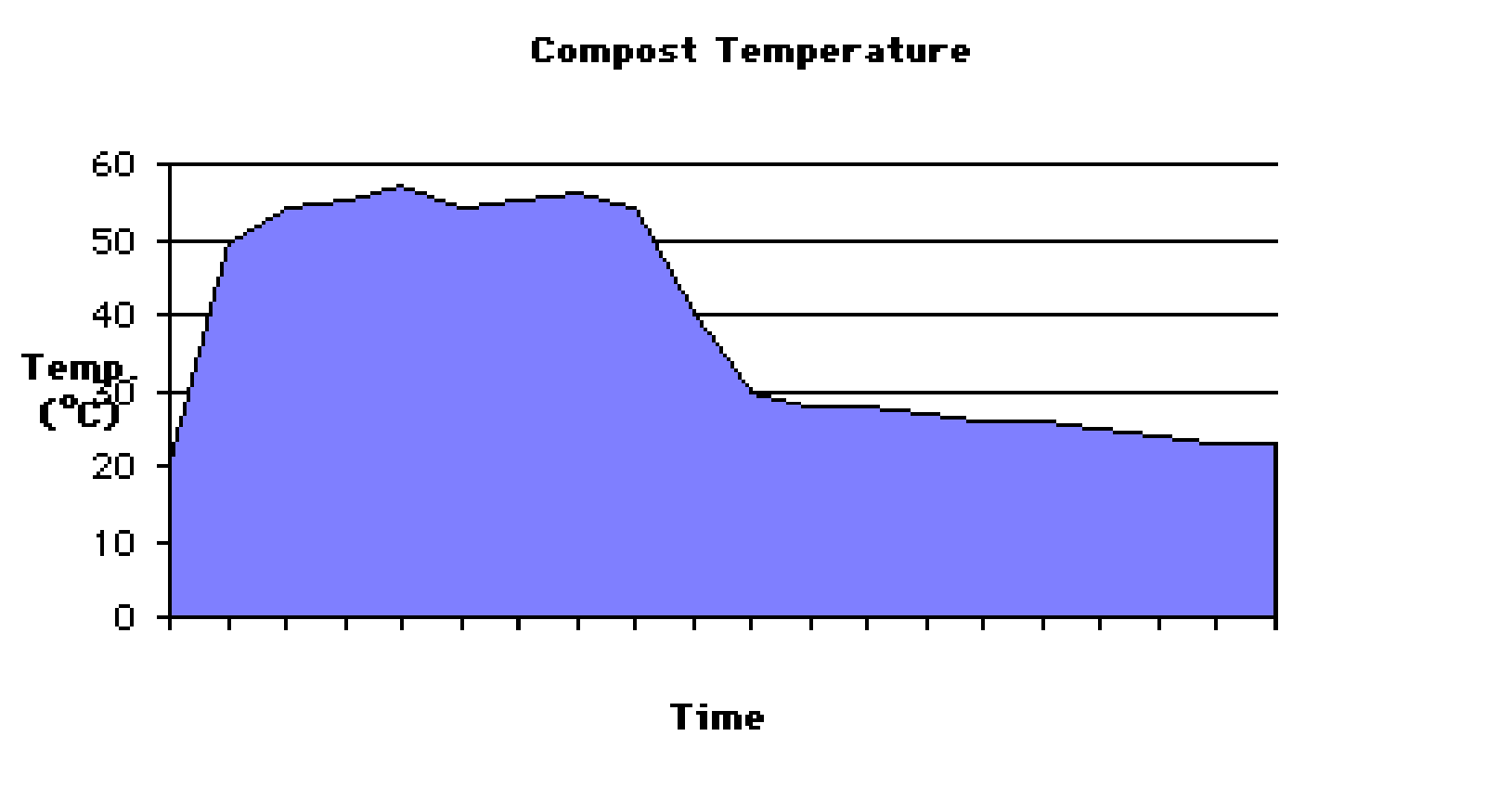
springtails, some types of mites, feather-winged beetles, nematodes, protozoa, rotifera, soil flatworms

Primary Consumers

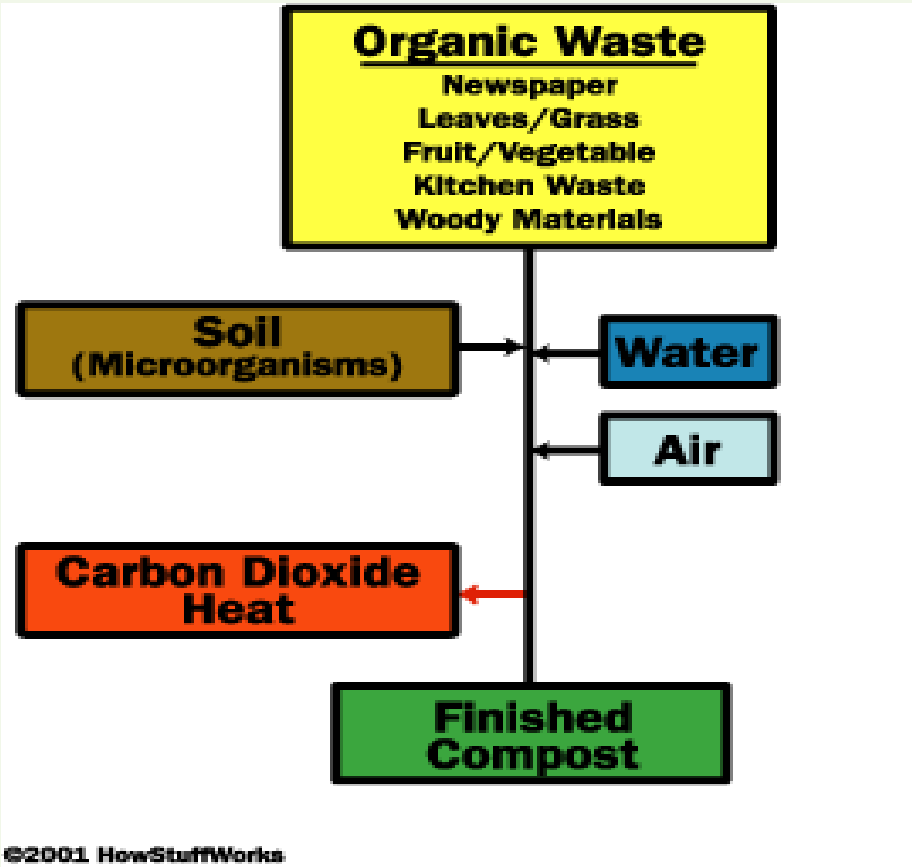
(organisms that eat organic residues)

bacteria, fungi, actinomycetes,
nematodes, some types of mites, snails, slugs,
earthworms, millipedes, sowbugs, whiteworms

Compost - How it 'happens'



Compost - How it 'happens'



Composting - Troubleshooting

Backyard composting

- Nothing happening - add nitrogen, water, aeration
- Too hot - decrease nitrogen by adding carbon-rich materials
- Odor - too much nitrogen, aeration

Vermicomposting:

- Worm die-off - too dry - water the bedding
- Rotting - too much food at once

Compost - When is it ready?

- Backyard composting
  - Depending on the steps taken…

    4 weeks to 3 months
- Vermicomposting
  - 3 to 4 months

Compost Uses

- Add nutrient-rich ‘black gold’ to garden and potted plants
- Use as mulch to retain moisture and temporarily minimize weeds
- Mix into soil to increase porosity, improve drainage, insulate soil

Enjoy!

URI Outreach Center

For information about composting and other environmental topics and programs, contact:

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