

Oregon State UNIVERSITY **OSU**

# Advanced Composting for Beginners

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## Why Compost?

- Manage yard debris
- Manage domestic waste
- Generate soil conditioner



## Organic Matter Improves Soil Quality and Soil Health

- Soil moisture
- Nutrient cycling
- Nutrient holding capacity
- Carbon sequestration
- Erosion reduction



## Successful Composting

- Blend the materials
- Manage to suit your style
- Recognize when it's finished



## Compost: A Three-legged Stool



air      C:N      water

## AIR: Why

- Manage odor, heat, moisture, biology

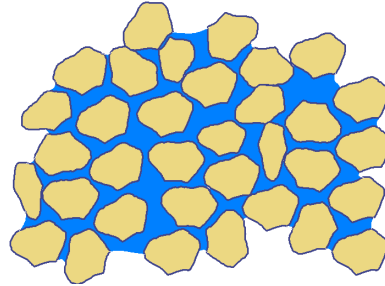


### AIR: How

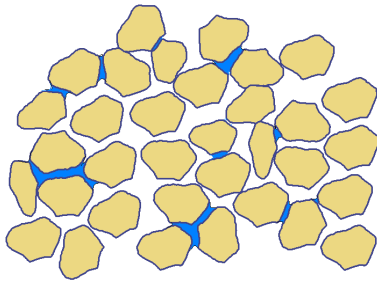
Porosity:  
heterogeneous  
texture  
Turning



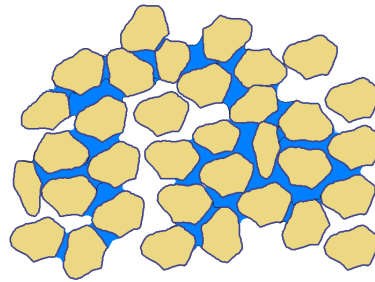
### WATER: Too wet



### WATER: Too dry



### WATER: Just right



### Compost Moisture Squeeze Test

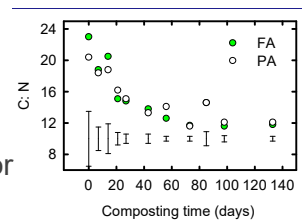
#1 reason for failure: not enough water.  
Squeeze a handful, hard – check for drips, look at your hand.

Too dry	Just right	Too wet
<40%	50-55%	60-65%
>65%	55-60%	
Does not feel moist	1-2 drops	Stream of water
Sheen on gloved hand		Many drops

Courtesy Compost Design Services

### C:N RATIO: Why

Efficient composting  
Odor control  
Balanced diet for microbes



### C:N RATIO: How

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Green stuff and brown stuff  
Who's doing the composting?  
Temperature, composting speed  
Final compost nutrient value

### What is Green Stuff?

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Nitrogen sources: protein  
Fresh green plant materials  
Manures; meat; bone-,  
blood-, hoof-meal  
Bagged fertilizer  
Alfalfa pellets



Water that stays in place

### What is Brown Stuff?

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Carbohydrates: energy  
Absorbency  
Dried brown plant materials  
Paper, cardboard  
Wood working hobbyists



Photo Credit: Best of OSU Archives

### Basic Compost Recipe

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One part green stuff  
Four parts brown stuff  
Air and water as desired

$$1 + 4 = \text{COMPOST}$$

## Speed Survey:

*WHAT IS THE RIGHT WAY  
TO COMPOST?*

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### We're All Right

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Aerobic composting  
Anaerobic composting  
Sheet composting  
Direct soil incorporation



## Some are More Right than Others

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- Effort, time, personal preference
- Weeds, insects, disease problems
- Speed, space
- Nuisance value
- Compost quality

## Methane Digestion

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- No fuss, low work waste disposal
- Converts solids to  $\text{CO}_2$ ,  $\text{CH}_4$  and water
- May produce plant-toxic by products



Gedye: there are many brands

## Turning Compost

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Lift composter from the compost.  
Begin forking the compost into the composter.



Layer in food waste and other fresh materials as you move compost.



Use the fork to break up clumps as you go.



Alfalfa pellets - a good source of N.

## Important Points

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Your composting must fit your lifestyle.

Tool choice is personal.

Compost method choice is personal.

## Pop Quiz: Compost Maturity

*WHEN IS COMPOST FINISHED?*

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## When you say it is

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Intended use?

Very immature  
composts – toxic plant  
effects

Very mature composts  
– soil biology



## Special Topics

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## Pop Quiz: Food Waste

*WHAT KINDS OF FOOD SCRAPS  
CAN BE COMPOSTED?*

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If you can eat it, you can compost it.

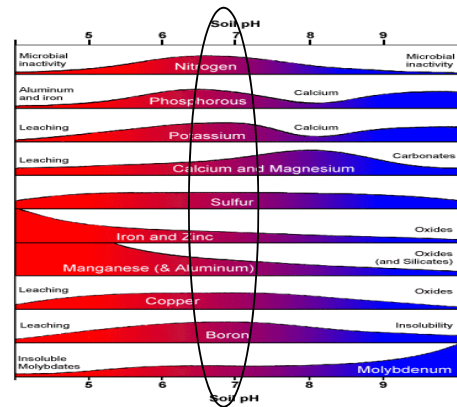


### Safe Food Waste Composting.

- Never put in direct contact with soil
- Never have food as top layer
- Layer in absorbent carbon sources
- Compost aerobically in hot, active pile
- Turn the whole pile when you add food waste
- Turn frequently

### Wood Ash

- Soluble K and P
- Readily available
- Raises soil pH
- Not for acid-lovers
- 5-10 pounds per 100 square feet per year – *no more!*
- Annual soil testing

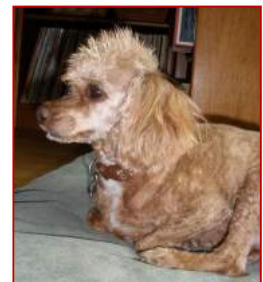


### Pet Waste



### Pet Waste

- Pathogen source
- Consult your hauler
- Bury or process in methane digester
- NEVER put in contact with edible plants or garden soil



## Manure as a Soil Amendment



NO!

Yes!



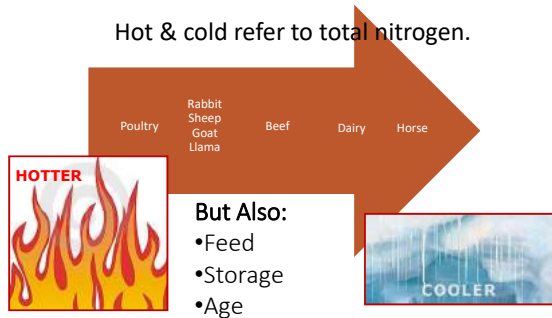
Predator species



Prey species

## Common Manures: Hot to Cold

Hot & cold refer to total nitrogen.



## Manure in the Home Landscape

Apply during the growing season **or**  
 Apply in late summer with a cover crop.  
*Don't apply* in the autumn or early spring.  
 Which part of the crop do you eat?  
 Never use raw hog manure; dog, cat, or human waste.

## Sod



Photo Credit: D Putnam, UC Davis

Keep your compost pile covered during the rainy season



And during  
the dry season.



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## Success with Vermicomposting

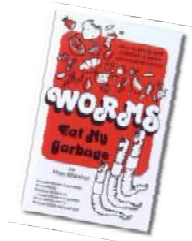
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First Read the BOOK

Worms Eat My Garbage  
by Mary Appelhof

Many editions and revisions

Wormwoman.com



### Vermicomposting

- Select container
- Select bedding
- Locate red wigglers
- Assemble worm bin
- Add food and manage

### Select Container





## Select Bedding

Commercial mix  
Shredded paper  
Newsprint  
Leaf mold  
Manure



## Locate Red Wigglers



## Assemble Worm Bin



## Add Food and Manage

Monitor moisture levels  
Monitor odor  
Monitor egg laying  
Monitor other insects

## Manage the Bedding



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