Advanced Composting for Beginners

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Why Compost?

Manage yard debris
Manage domestic waste
Generate soil conditioner
Organic Matter Improves Soil Quality

- Soil moisture
- Nutrient cycling
- Nutrient holding capacity
- Disease, weed suppression
- 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.

<table>
<thead>
<tr>
<th></th>
<th>Too dry</th>
<th>Just right</th>
<th>Too wet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture Level</td>
<td>&lt;40%</td>
<td>50-55%</td>
<td>60-65%</td>
</tr>
<tr>
<td></td>
<td>Does not feel moist</td>
<td>1-2 drops</td>
<td>Stream of water</td>
</tr>
<tr>
<td></td>
<td>Sheen on gloved hand</td>
<td>Many drops</td>
<td></td>
</tr>
</tbody>
</table>

Courtesy Compost Design Services
C:N RATIO: Why

Efficient composting
Odor control
Balanced diet for microbes
C:N RATIO: How

Green stuff and brown stuff
Who’s doing the composting?
Temperature, composting speed
Final compost nutrient value
What is Green Stuff?

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?

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

Photo Credit: Best of OSU Archives
Basic Compost Recipe

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?
We’re All Right

Aerobic composting
Anaerobic composting
Sheet composting
Direct soil incorporation
Some are More Right than Others

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

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

Gedye: there are many brands
Turning Compost
Lift composter from the compost. Place on chicken wire or hardware cloth. Begin forking the compost into the composter.
Layer in food waste, fresh grass clippings 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

Tool choice is personal.

Compost method choice is personal.
Pop Quiz: Compost Maturity

WHEN IS COMPOST FINISHED?
Intended use?
Very immature composts – toxic plant effects
Very mature composts – soil biology
Special Topics
Pop Quiz: Food Waste

WHAT KINDS OF FOOD SCRAPS CAN BE COMPOSTED?
If you can eat it, you can compost it.
Safe Food Waste Composting.

Never put food 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
The diagram shows the distribution of various elements in soil pH levels:

- **Microbial inactivity** at low pH levels.
- **Nitrogen** peaks at neutral pH (7) but is active across a wide pH range.
- **Phosphorous** shows a peak at high pH levels.
- **Calcium** is active across a wide pH range.
- **Potassium** shows a peak at high pH levels.
- **Calcium and Magnesium** are active across a wide pH range.
- **Carbonates** are present at high pH levels.
- **Sulfur** is active across a wide pH range.
- **Oxides (and Silicates)** are present at high pH levels.
- **Iron and Zinc** are active across a wide pH range.
- **Manganese (and Aluminum)** shows a peak at high pH levels.
- **Oxides** are present at high pH levels.
- **Copper** is active across a wide pH range.
- **Boron** shows a peak at high pH levels.
- **Molybdenum** is present at high pH levels.

The diagram illustrates how different elements are affected by soil pH changes, with some elements being more active or present at specific pH ranges.
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
Common Manures: Hot to Cold

Hot & cold refer to total nitrogen.

But Also:
- Feed
- Storage
- Age
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

- Container
- Shredded paper
- Soil
- Eggshells
- Worms
- Water
Add Food and Manage

Monitor moisture levels
Monitor odor
Monitor egg laying
Monitor other insects
Manage the Bedding