Happy to see you! We will be starting soon.

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Welcome

Composting Basics

- ❑ This event will be recorded for educational or promotional use by the University of California.
- ❑ You can watch it on our YouTube Channel later.
- ❑ You will be muted throughout to prevent background noise.
- ❑ **Please post your questions** in the "**Q&A." They** will be addressed at the end of the presentation.
- ❑ **Use "Chat" for non-question conversations or comments.** Change the "To" if needed to ensure your Chat is sent to those who you want to send it to.

Options:

"*Private*" if specific Chat only to an individual participant or speaker
"*Panelists*" if want to send a Chat only to the speakers
"*Everyone*" if you'd like all to see your Chat message

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Who are the UCCE Stanislaus County Master Gardeners?

We extend research-based knowledge and information on home horticulture, pest management, and sustainable landscape practices.

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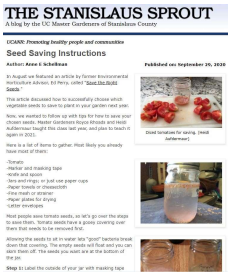
Sign up for our newsletter

- Zoom class announcements
- Gardening & pest management articles

http://ucanr.edu/stansprout


THE STANISLAUS SPROUT
A blog by the UC Master Gardeners of Stanislaus County
UCANR: Promoting healthy people and communities
Seed Saving Instructions
Author: Anne C Schubbeus
Published on: September 30, 2020

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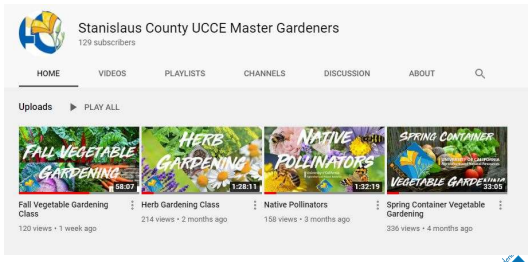

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Meet Your Speakers

• Heidi Aufdermaur

• Terry Pellegrini

Stanislaus County Master Gardeners

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Composting Basics

Special thanks to the UCCE Placer County Master Gardeners

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Agenda

- What is composting?
- What can you compost?
- Composting Methods
- Greens vs. Browns
- The Process
- Troubleshooting

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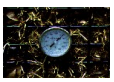
The Composting Process Depends on:

- Organic Matter Composition
- Microorganisms
- Macroorganisms
- Water
- Oxygen/Air Flow
- Temperature







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Composting turns this…into this!

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Composting

- Reduces your environmental impact
- Saves money on mulch and compost
- Is great exercise!

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Benefits

- Helps soil hold moisture
- Improves plant growth
- Provides slow-release nutrients
- Encourages healthy root structure
- Adds beneficial microbes
- Lightens clay soil or helps sandy soils hold water
- Helps reduce weeds

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Poll #1

Freestock.com

Have you composted before? For how long?

Yes, less than 5 years.

Yes, more than 5 years.

Yes, more than 10 years.

Yes, 10 years or more.

No, can't wait to learn more!

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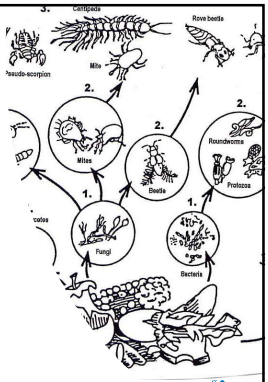
Decomposers

- Grind, chew, suck, bite, & tear material
- Help turn organic matter into compost
- Turning the pile speeds up this process



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Macroorganisms

The decomposers we can see.

- Included are: Ants, centipedes, snails, sow bugs, worms, beetles, earwigs, grubs
- They are they physical decomposers because they grind, chew, suck, bite, and tear material.

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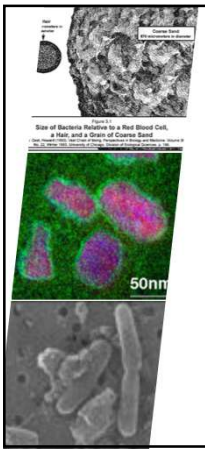

Microorganisms

- **Bacteria** are the powerhouse in the compost pile. They breakdown plant matter & create carbon dioxide and heat.
- In the right conditions, population growth is amazing—bacteria can double every hour!

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Questions?

What do you think is okay to compost?

Type your answer into the chat box.

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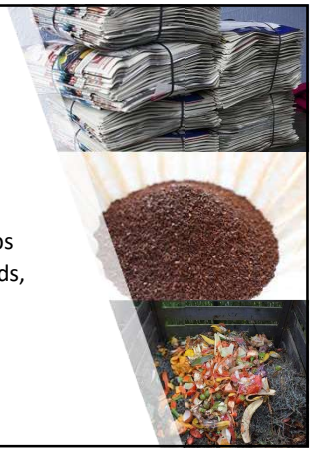
What Can You Compost?

- Grass clippings
- Yard waste
- Leaves, pine needles
- Fruit & vegetable scraps
- Tea bags, coffee grounds, eggshells
- Newspaper
- Shredded wood chips
- Some animal manures



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Do Not Compost

- Dirt/soil
- Ashes from stove, fireplace, BBQ
- Animals products (meat, bones, fish, grease)
- Dairy products
- Sawdust from treated wood
- Diseased plants
- Weeds
- Human or meat-eating animal manures

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Compost is a Mix of:

Browns

- Chopped woody prunings
- Pine needles
- Fallen/dried leaves
- Dried grass
- Straw
- Newsprint
- Most sawdust

Greens

- Tea bags
- Eggshells
- Coffee grounds & filters
- Citrus rinds
- Fruit waste
- Vegetable waste
- Shrub & grass clippings

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Browns (Carbon rich)

- Usually dry, low moisture content
- Lightweight
- Examples: dry leaves, straw, sawdust, wood chips, corn stalks, cardboard, paper



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Greens (Nitrogen rich)

- Needed to help with decomposition
- Examples: vegetable & fruit scraps, grass clippings, coffee grounds
- Rotted manure from non-meat-eating animals like rabbits, goats, horses, fowl *can be used but aren't essential*



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Ratio

- 30 parts Carbon to 1-part Nitrogen
- Example: Two 5-gallon-buckets
  - one green to one brown
  - Compress browns, greens loose

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Poll Time!

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2. What are examples of <u>allowed</u> "browns" or carbon?
(Choose the correct answer)

a) Straw, paper clips, potato chips
b) Straw, dry leaves, wood chips, paper, newspaper
c) Straw, dry leaves, wood ash, paper, newspaper

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3. What are examples of <u>allowed</u> "greens" or nitrogen?
(Choose the correct answer)

a) vegetable or fruit scraps, human or pet waste, coffee grounds
b) vegetable or fruit scraps, meat scraps, bones, dairy products
c) vegetable or fruit scraps, grass clippings, coffee grounds

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4. What materials <u>shouldn't</u> be added to a compost pile?
(Choose all that apply)

a) Bones
b) Dairy products
c) Vegetable scraps
d) Animal waste
e) Newspaper
f) Wood ash
g) Diseased plants or weeds

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Questions?

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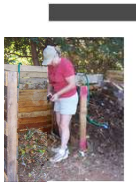

Compost Systems


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Pile vs. Bin


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Compost Tools

- Wheelbarrow
- Hose & nozzle
- Shovels
- Garden/Soil Fork
- Thermometer

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Making the Pile

- Size: 3'X3'X3' to 5'X5'X5'
- Layer bottom with browns
- Materials should be chopped to ½"
- Keep pile moist, like a wrung-out sponge!
- Turn to aerate

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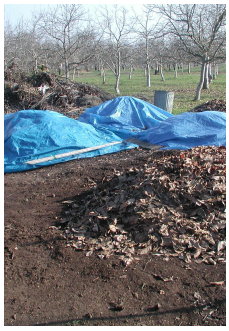

Site Selection

- Shady area if possible
- On a level space
- Near a water source
- Convenient to access
- Inaccessible to pets and rodents
- Keep covered in winter
- In summer, keep wet with a micro-sprinkler

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Standard Composting Method

- Needs a variety of materials
- Turn it each week
- 4-6 weeks for finished compost (summer)

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Rapid Composting Method

- Needs a large supply of organic material
- Requires substantial chopping and shredding and more turning of the pile
- Can take less than one month.

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Passive Composting Method

- Use if a steady supply of organic materials is not available
- Takes very little gardener time or labor
- Requires 6 months to 2 years to produce compost
- Smaller compost area needed, because pile is built as materials are available
- Little if any heat is produced, so weeds & pathogens are not killed

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Poll Time!

37

5. Compost pile size should be:

a) It doesn't matter.
b) 3’x3' to 5'x5'
c) larger than 5'x5'

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6. Which composting method leaves a pile alone for a year?
(Choose the correct answer)

a) Rapid.
b) Standard.
c) Passive.

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7. **Which composting method requires a large supply of materials and can take less than a month?**
(Choose the correct answer)

a) Rapid.
b) Standard.
c) Passive.

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8. **Which composting method needs a variety of materials, weekly turning, and can take 4-6 weeks to produce compost?** (Choose the correct answer)

a) Rapid.
b) Standard.
c) Passive.

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Questions?

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Water & the Pile

- ***Wet pile***: pull it apart, loosen it, incorporate dry materials and remake it.
- ***Dry pile***: turn & rewet material as it is being turned (some browns are hard to moisten)
- Seasonal considerations!!!

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Oxygen

- **Aerobic composting** is preferable
- **Anaerobic decomposition** or fermentation
  - may produce compounds toxic to plants
  - produces ammonia & methane gas – smelly!
- ***Passive aeration:*** air is warmed by the compost process, rises through the pile, pulls in fresh air from the sides.
- ***Active aeration:*** turn and mix the compost, or build the pile effectively so surface air diffuses in

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Balance

- Balance oxygen and water in the compost pile: 50% moisture + 50% O_2
- Consider moisture content of added materials (food scraps!)
- ***Compost should be about as moist as a well wrung-out sponge. It should be moist to touch but yield no liquid when squeezed.***

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Temperature

- Depends on pile size, oxygen & moisture content
- Affects biological activity:
- Microorganisms are active between 95 - 160ºF
- Best decomposer bacteria thrive at 122 - 131ºF.
- Above 140ºF kills pathogens & weed seeds but slows decomposition.

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Weekly Composting Tasks

- Watering the pile
- Aerating or turning the pile
- Testing pile with thermometer
  - Active piles must reach 140-160 °F within 24 hours to kill weed seeds and pathogens

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How Long Process Takes Depends on:

- How hot is your pile?
- What you add to the pile & when
- How often you turn it
- Seasons/temperature
- Standard, passive, rapid, or method

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How long it takes depends on…

- Density of material
- Particle size
- C & N content
- Moisture content
- Aeration
- Volume
- Insulating materials around the pile

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For Best Results

- Optimum is 2 weeks of temperatures around 135º F
- Turn the pile when temps get above or below the optimum range
- If compost is properly moist and turning does not cause temperatures to rise, the compost is finished or needs more nitrogen.

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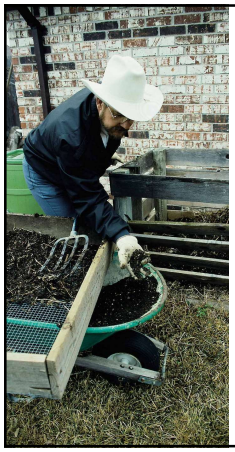

When is it done?

- Materials broken down & unrecognizable
- Temperature is cool
- Feels like a wrung-out sponge
- Should smell earthy

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Last Poll!

Which composting method do you want to try first?

a) Rapid.
b) Standard.
c) Passive.

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Troubleshooting

What to do when problems occur.

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Troubleshooting: Pile with bad odor

- Too much water
- Not enough oxygen
- Too much nitrogen

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Troubleshooting: Pile Won't Heat

- Not enough water
- Pile too small
- Not enough nitrogen/greens
- Particle size too large

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Use Your Compost!

- In garden beds
- In potting mixes for indoor and outdoor plants
- For starting seeds
- To suffocate and prevent weeds
- Add onto your lawn (¼") for nutrients

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Using Mulch

- 1-4” thick around plantings
- 1’ away from trunks
- 1’ away from buildings

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Composting

- Can be exercise disguised as fun ☺
- Is good for the environment
- Keeps materials on site and out of the landfill
- Helps reduce, reuse and recycle materials and nutrients!

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Stanislaus County Free Library

Vicki Salinas, Reference Librarian

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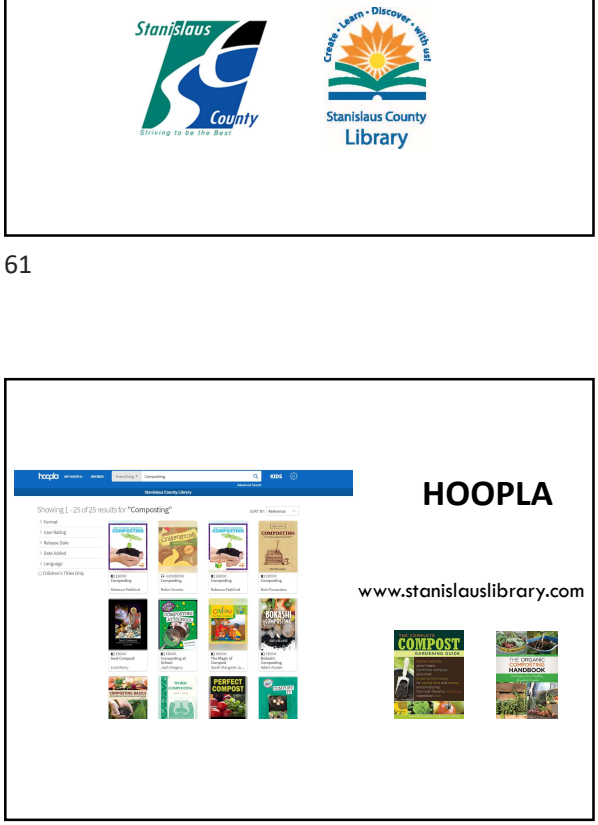

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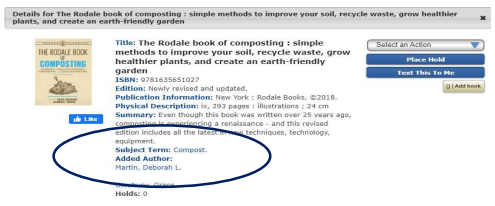

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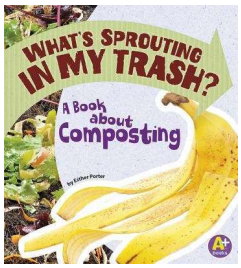

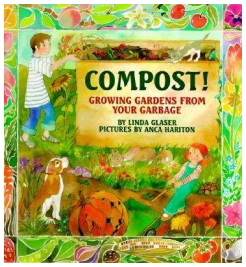

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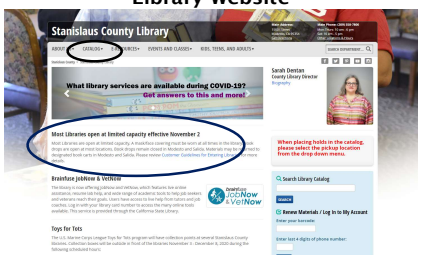

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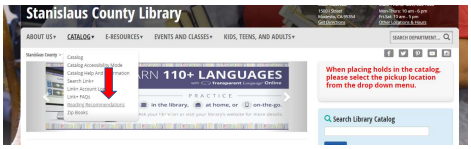
Reading Recommendations



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