Northern Shenandoah Valley Master Gardener Association

Beginning Vegetable Gardening Series

Webinar 5 of 6: Seed Saving and Composting the Biomass

Presenters: Elaine Specht and Jerry Jorgensen

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Why save seeds?

- Preserve an heirloom variety
  - Bradford Watermelon
- Gradually improve a variety specific to your own location
  - 3 seeded peanuts
- Save some money
- Fun!

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Materials: Gathering, Extracting, Cleaning, Drying

- Buckets
- Paper bags
- Bowls
- Glass jars
- Water
- Paper plate
- Desiccant/Silica Gel

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Materials: Packaging

- Envelopes
- Glass jars
- Pill bottles
- Pen/pencil
- No plastic (unless seeds are very dry)

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Two Types of Seed (well, actually three)

- **Dry**
  1. Gather
  2. Extract
  3. Dry
  4. Clean
  5. Package and Label

- **Fleshy**
  1. Gather
  2. Extract (Ferment)
  3. Clean
  4. Dry
  5. Package and Label

Dry Seeds, e.g, Kale, Peas, Lettuce, Basil

1. Gather
   - Allow seed pod to dry on the plant
   - Collect seed pods before seeds drop
2. Extract/Dry
   - Hang upside down in a paper bag
   - Shake in a paper bag
4. Clean
   - Separate seed from chaff
5. Package and Label
   - No plastic

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Fleshy Seeds, e.g, Tomato, Cucumber

1. Gather
   - Leave fruit on plant until very mature
2. Extract
   - Slice along the equator
   - Squeeze seeds and pulp into a container
   - Add water
   - Ferment
     - May see white mold (that's okay)
     - 70-85 degrees (room temp), no direct sun
3. Clean
   - Add more water and agitate
   - Mature seeds sink
   - Pour off top water and repeat several times
   - Put in colander and rinse
4. Dry on a paper plate
5. Package and Label

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Tomato
Solanum lycopersicum

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In-Between Fleshy / Dry Seeds

- Examples: Peppers, Winter Squash, Watermelon
- Treat like dry, but also can ferment
- Be sure protective film around seed is gone

Pepper
Capsicum spp.

Seed Storage

- Cool
- Dry
- Dark

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Heirloom vs. Hybrids

And their impact on seed saving

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How Seeds are Made

Pollen (male)
+ Egg (female)
= Seed

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Heirloom
Open-Pollinated / Self-Pollinated

California Wonder
Capsicum annum

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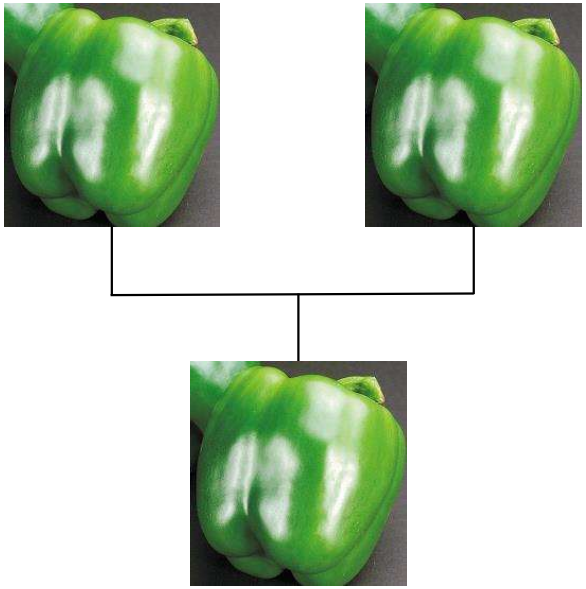
Heirloom
Open-Pollinated / Self-Pollinated



California Wonder
Capsicum annum

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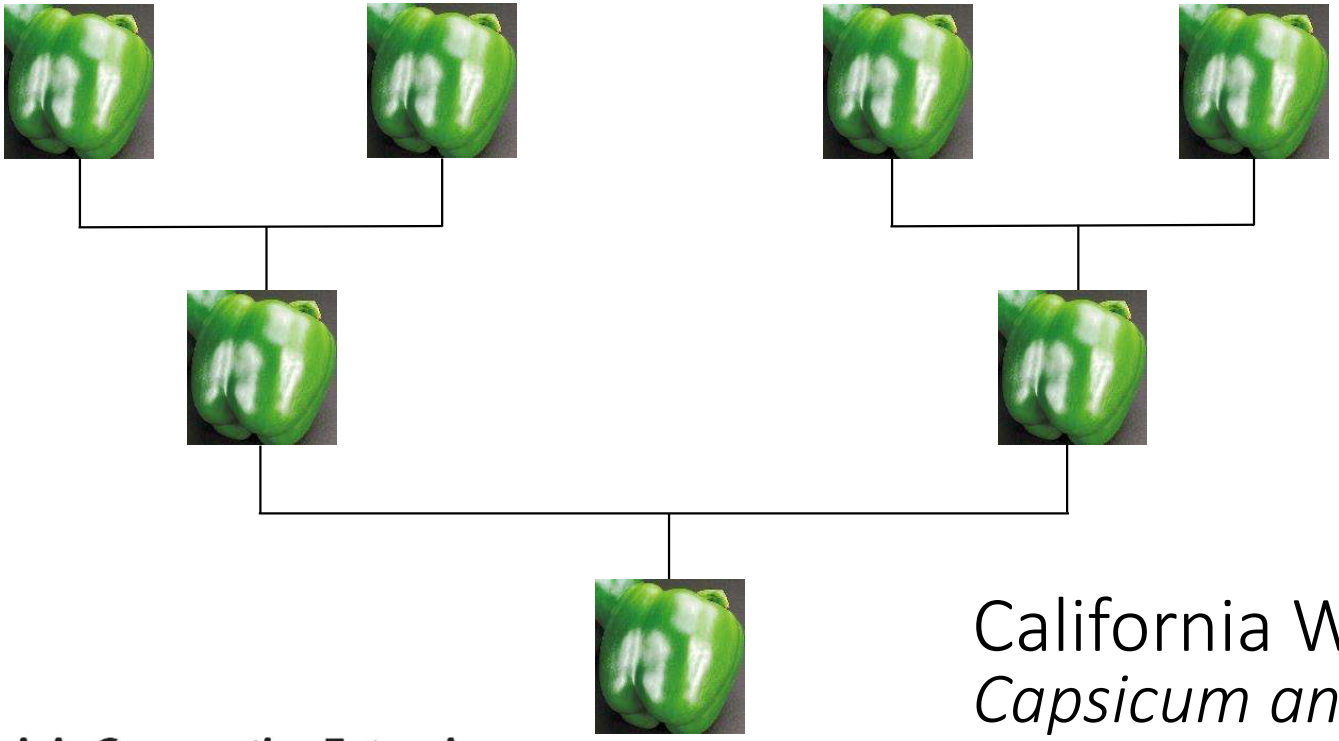
Heirloom
Open-Pollinated / Self-Pollinated



California Wonder
Capsicum annum

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Heirloom
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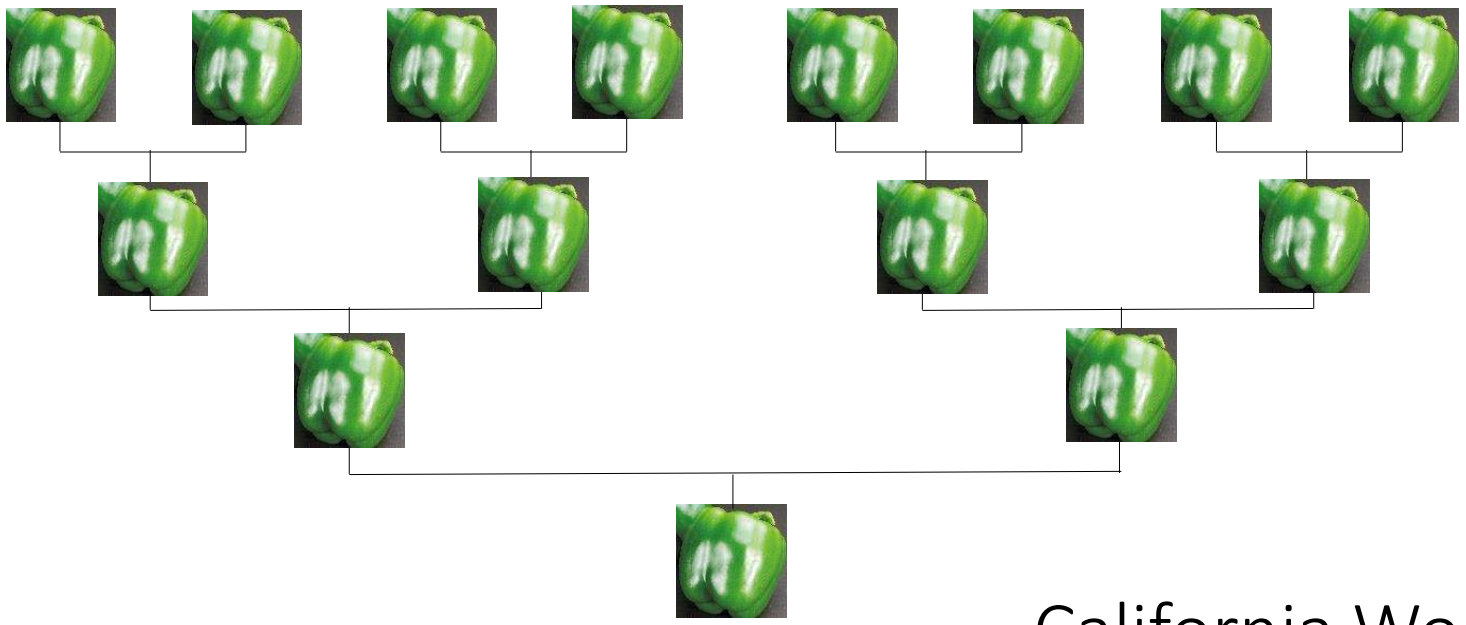

California Wonder
Capsicum annum

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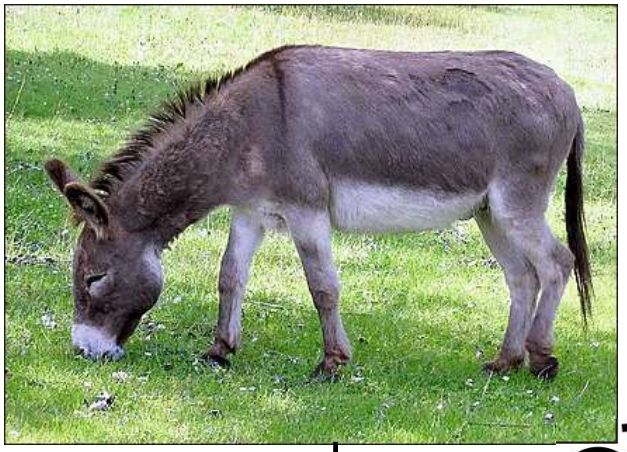
Hybrids

Horse

♀

Donkey



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Mule
Lovely, but sterile

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Hybrid Plants

Mountain Fresh
Lovely, but unpredictable results from the seeds

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Hand Pollination

- Manually touch pollen from another plant to the stigma
- Remove stamen
- Isolate flower while seed forms (such as with a mesh bag)

Resources

- Seed Saving for the Home Gardener https://extension.umaine.edu/publications/2750e/
- Storing Vegetable and Flower Seeds https://extension.colostate.edu/topic-areas/yard-garden/storing-vegetable-and-flower-seeds-7-221/

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Visit Our Seed Lending Libraries

- Clarke County Library, 101 Chalmers Court, Suite C, Berryville
- Bowman Library, 871 Tasker Road, Stephens City
- COMING SOON: Handley Library, 100 W Piccadilly St, Winchester
- Page Public Library, 100 Zerkel Street, Luray
- Shenandoah County Library, 514 Stoney Creek Blvd, Edinburg
- Samuels Public Library, 330 E Criser Rd, Front Royal

http://nsvmga.org/programs/seed-lending-library/

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Contact Our Green Help Lines

County	Phone	Email
Clarke	540-955-5164	NSVMGA.info@gmail.com (include "Clarke County Gardening Question" in the subject line)
Frederick	540-665-5699	GreenHelpLine.FrederickCo@gmail.com
Page	540-778-5794	NSVMGA.info@gmail.com (include "Page County Gardening Question" in the subject line)
Shenandoah	540-459-6140	greenhelpline@gmail.com
Warren	540-635-4549	GreenHelpLine.WarrenCo@gmail.com

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Visit us at Farmers Markets

Market	Location	Days We're There
Freight Station Market	Winchester	1st and 3rd Saturdays
Massanutten Country Corner	Luray	2nd and 4th Saturdays
Barn Street Market	Woodstock	4th Saturdays (except June 19)
Strasburg Market	Strasburg	Every Saturday

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COMPOSTING

What is it?

The activity or practice of converting garden and kitchen waste to compost.

This begs the question: What is compost?

A mixture of various decaying organic substances, such as dead leaves, plant material or manure, used for fertilizing soil.

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HOW COMPOSTING WORKS

WASTEWELL

PLANTS LIVE IN HEALTHY SOIL. FRUITS AND VEGGIES ABSORB THE NUTRIENTS FROM THE SOIL TO GROW.

WE EAT FRUITS AND VEGGIES FROM HEALTHY PLANTS. SOME NUTRIENTS REMAIN IN THE FOOD SCRAPS.

WORMS AND MICROORGANISMS BREAK DOWN THE FOOD SCRAPS INTO NUTRIENTS THE PLANTS CAN USE TO GROW.

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Why should we create compost?

Creating compost will provide you with material which can be used to improve the quality of your soil.

Reduces the amount of yard waste sent to landfills.

Composting reduces the quantity of methane gas produced in landfills. Methane gas is a greenhouse gas.

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How does compost improve the soil?

Adding composted material to soil will:

- Increases the nutrient-holding capability of the soil.
- Turns the soil dark brown or blackish, thus increasing the heat-absorbing capabilities to a small extent.
- Reduces soil erosion by reducing soil surface crusting and promotes water infiltration into soil, rather than running off.
- Decreases the bulk density of the soil, making it easier for roots to penetrate the soil and creating a less compact soil.

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Additional Benefits

- Provides food for earthworms, soil insects, and microorganisms that contribute to soil quality.
- Promotes healthy plants that are less susceptible to diseases and insect pests, reducing the need for pesticides.
- Helps to recycle plant material and return nutrients to the garden or landscape that might otherwise be sent to landfills at considerable expense both in dollars and in wasted landfill capacity.

What should we compost (most common)

Plant Material

- Grass clippings (if not treated with herbicides or other pesticides)
- Leaves.
- Yard trimmings, flowers, and house plants.
- Hay and straw
- Wood chips and sawdust (in small amounts, not treated).

Food Scraps

- Fruit, vegetable scraps, egg shells.
- Coffee grounds and tea bags.
- Food-soiled paper napkins and paper towels

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Items not to compost

Food

- Meat, grease, bones.
- Cheese, sour cream, butter, salad dressing.
- Egg yolks
- Peanut butter.

Other Items

- Coal or charcoal ash.
- Black walnut leaves, twigs.
- Pressure or other treated wood, shavings or sawdust.
- Dead Animals/Rodents
- Animal Waste

When in doubt –Leave it out

Manure, Hay and Straw

In the past, manure, hay and straw were routinely added to compost piles.

Many home gardeners have reported damage to vegetable and flower crops after applying horse or livestock manure, compost, hay or grass clippings to the soil. The symptoms include poor seed germination and death of young plants.

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The Culprit

Aminopyralid, clopyralid, fluroxypyr, picloram and triclopyr are in a class of herbicides known as pyridine carboxylic acids.

This class of herbicides is being applied by farmers to fields to eliminate spiny pigweed and other weeds. These herbicides pass through the animal's digestive tract and are excreted in urine and manure. They can remain active in the manure even after it is composted. They can also remain active on hay, straw and grass clippings taken from treated areas.

Once in the soil, they affect vegetables that are planted

If you are going to acquire manure or hay for composting, talk to the farmer and make sure that his fields have not been treated with any of these herbicides.

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The Container

To save space, keep your yard looking neat, and speed up composting time, contain your compost in some type of structure.

The composting container can be man-made using simple materials or a purchased container.

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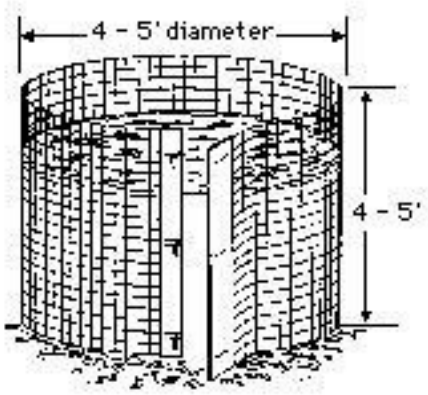
Man-Made Containers

The goal is to hold your compostable materials in a cylindrical or cubical mass that is about 3 to 5 feet in each direction. Smaller sizes do not create enough heat, and larger sizes do not allow enough penetration of air and water. There should be openings to allow for the addition of water or removing finished compost.

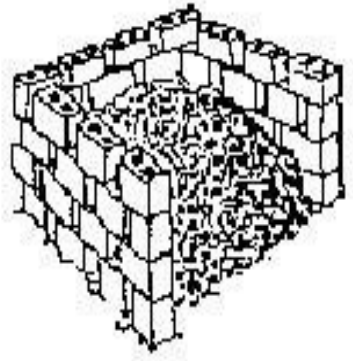
Examples of Man Made Containers

The structure can be built from cement blocks, brick, wood, woven wire fencing, metal posts or other materials. Wood should be rot resistant or pressure treated with a wood preservative. Avoid timbers treated with creosote or pentachlorophenol.

Wire fencing composting bin



Cement block composting bin



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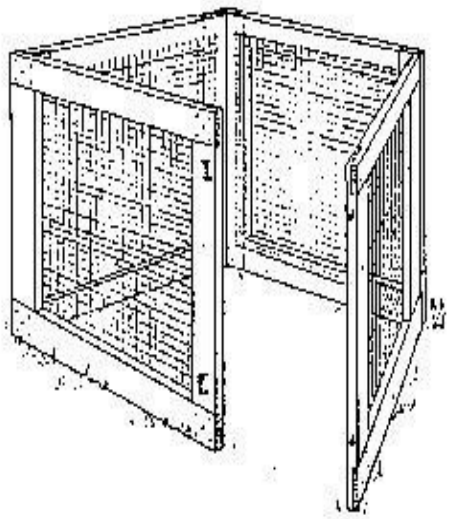
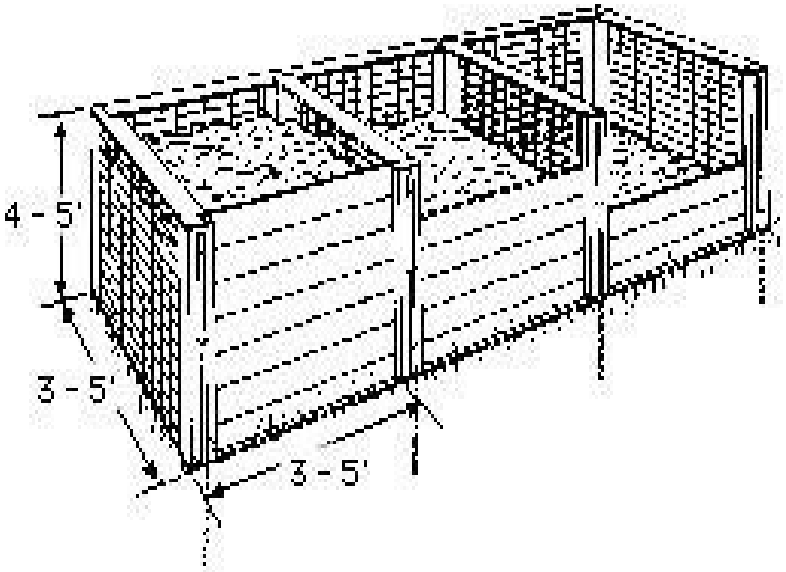
Examples continued

Portable wood and wire bin



Three chamber bin



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Store Bought Compost Bins

Tumbler

Canister

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Shredding the compost

The smaller the items are that are placed in the compost pile, the quicker it will break down and the better quality of compost you will have. The items will also not mat down and mold.

Shredding Examples

- Leaves, twigs, and straw can be placed on the ground and run over with a lawn mower multiple times to chop them up.

- Or they can be placed in a metal or plastic trash can and chopped up with a weed eater.

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Green vs. Brown

- Green refers to grass, plants and food.
- Brown refers to leaves, straw and twigs.
- In the compost pile you want to have a mixture of both, in the approximate ratio of 1:3, green to brown. Worded another way, 3 times as much brown stuff as green stuff by volume.

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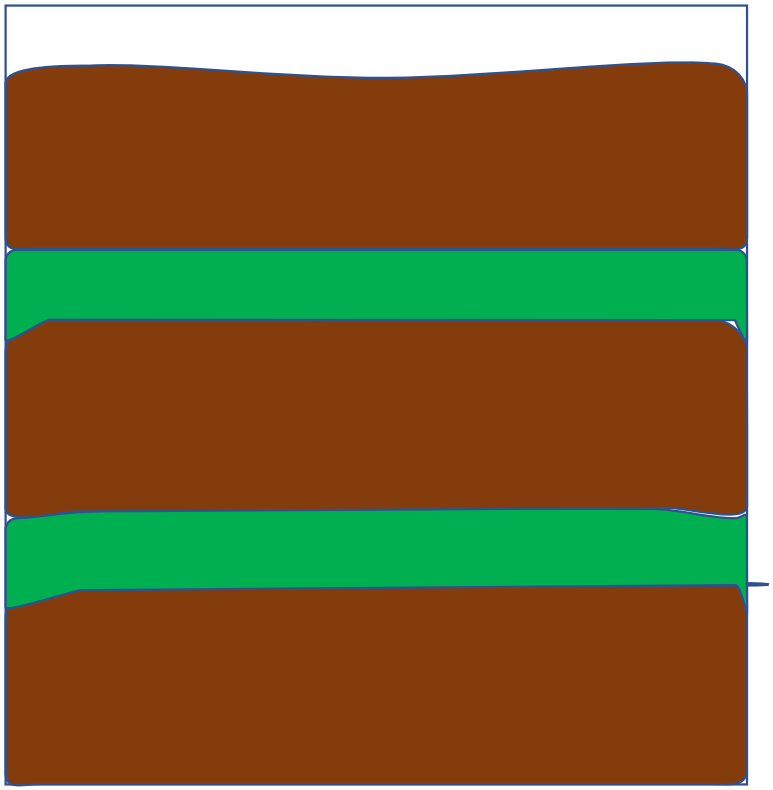
Layering



When filling the compost pile, do it in layers. Add a layer of brown stuff followed by a layer of green followed by a layer of brown etc.

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Moisture and Heat

- The pile should be damp, about as wet as a wrung-out sponge.
- When building the pile, add water as necessary.
- Cover the pile with an old piece of plywood, tarp or piece of sheet metal to retain moisture and keep the rain out.
- A well-built compost pile will heat up to 140 degrees or warmer.
- A backyard compost pile tends to heat up in the center and not on the edges.

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Turning the pile

- The compost pile should be turned (forked over) after the temperature exceeds 140°F for three to five days (usually in the first week after the pile is created).
- When turning the material, try to move it from the top and outside edges of the pile to the inside portion of the pile and vice versa, to give all the material a turn at the hotter center of the pile.
- Composting to this temperature is optimum for destroying most pathogens and weed seeds, while allowing for maximum growth and reproduction of fast-composting bacteria.
- I use a manure fork to turn my compost pile.

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When to use compost.

- Compost is ready to use when it is dark in color, crumbles in your hands, has a fresh earthy scent and doesn't have any large chunks of material.
- Add compost to the garden bed when planting new seeds or seedlings.
- Side dress vegetable plants, flowers or shrubs.
- Add to garden beds in fall to suppress weeds.

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Sources of Information

https://resources.ext.vt.edu/contentdetail?contentid=1275

https://extension.umn.edu/managing-soil-and-nutrients/composting-home-gardens#composting-structures-882310

https://extension.oregonstate.edu/crop-production/soil/herbicide-carryover-hay-manure-compost-grass-clippings

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