



## Backyard Composting Basics

### What is composting?

In nature compost happens. Composting is a natural process by which organic materials decompose. Backyard composting is a controlled or managed version of the natural process.

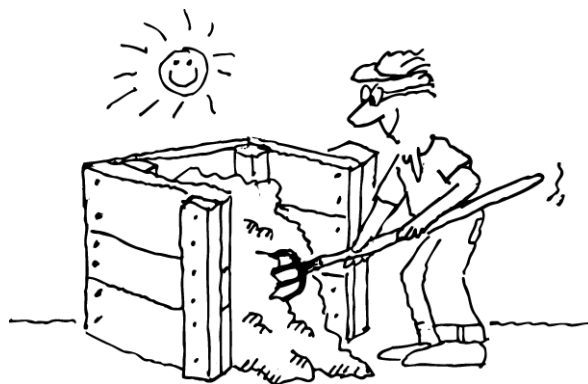
### What is compost?

Compost is the soil amendment product that results from proper composting. The end product of the compost process is a humus-like material that will increase the health of the soil. Definition of humus: The end product of organic compost that has gone through the full decay process and all of its nutrients have been released back into the soil.

### What is in a compost pile?

There are many different species of microorganisms in a compost pile. The microscopic bacteria and fungi are the real workers in the compost pile but they are just one part of the complex and fascinating ecosystem we call the “**Compost Food Web.**” Many other organisms are in the compost such as protozoa, nematodes, springtails, mites, beetles, millipedes, sowbugs, and worms.

**In one teaspoon there can be up to 1 billion bacteria or 250,000 - 500,000 bacteria within the dot of a period at the end of a sentence!**



## Why compost?

- Composting saves money
  - Lowering garbage bills
  - Replacing store bought soil amendments
  - Knowing what is going into your garden
- Improves the fertility and health of the soil
- Saves water by helping the soil hold moisture
- Reduces soil erosion
- Benefits the environment by recycling valuable organic resources extending the life of landfills
- Replaces the need for harsh chemical fertilizers
- It's surprisingly easy, anyone can do it...on any budget... compost happens
- If done correctly there is no offensive odor, no annoying insects or critters
- Compost bins can look attractive too!

## How does compost affect the soil?

- Compost is like a multivitamin for your soil
- It helps prevent soil erosion, promotes soil fertility, and stimulates healthy root development
- Compost improves soil structure by adding organic matter
- It increases water-holding capacity of soil so that you don't need to water as often
- Compost helps keep heavy clay soil from compacting, meaning that the soil is easier to work (crumbly)
- It also improves the structure of sandy soil

## How long does it take to produce compost?

- Compost happens but your level of attention dictates how quickly
- Generally, it should take from three to six months to make a single batch of compost
- Depending upon the blend of materials, how often the pile is turned, and the moisture content

## How to know when compost is ready?

- The pile no longer heats up even when turned or moistened
- The pile volume has decreased by roughly half
- The majority of the material looks like dark, rich, crumbly soil
- It smells sweet and earthy

## Composting methods

- Cold method called passive composting or static composting
- Hot method
- Vermicomposting (worm composting)
- Sheet or lasagna
- Pit or trench

There are five control factors that maintain an environment that encourages the composting organisms to thrive 24 hours a day.

1. **Aeration**
  - Turn pile when activity slows
2. **Moisture**
  - Should be at a level of 45-60%. Consistency of a wrung out sponge
3. **Volume**
  - Minimum of 3'x 3'x3' (one cubic yard)
4. **Particle size**
  - 1" to 3" diameter at the largest point
5. **C:N Ratio**
  - 30:1 equal volume of "browns" and "greens"

Greens/Nitrogen	Browns/Carbon
Grass clippings	Fall leaves
Fresh landscape trimmings	Dried landscape trimmings
Alfalfa hay	Straw
Fresh weeds (no seeds)	Dryer lint (cotton or natural fibers)
Fruit and veggie scraps	Cardboard, cardboard rolls
Coffee grounds/tea bags	Shredded newspaper
Aged chicken manure	Wood shavings
<b>Do not add:</b>	
Dairy, meat, fat, oils, bones, pet and human waste, treated or painted wood, metals, glass, seafood scraps, stickers from fruits and vegetables	

## How to Use Compost

### 1. Soil Amendment

- As much as six inches of compost can be turned into the soil each year. Compost reacts with the soil to slowly release both plant nutrients and essential trace elements. Compost can be turned into the soil in the spring in preparation for planting. If only a small amount of compost is available, it can be incorporated in the seed furrow or a handful can be added to each transplant hole of annuals, perennials, or vegetables. Large amounts of compost can be used to plant trees, shrubs and vegetable gardens, or to repair or replace lawn area.

### 2. Mulch

- Superior to bark mulch in that it is a slow release source of plant nutrients and beneficial microbes. Spread a two to four inch layer around plants, trees, shrubs and exposed slopes. This will deter weeds, prevent erosion, conserve water, and attract earthworms.

### 3. Potting Mix

- Compost can be combined with equal parts of sand and soil to create an excellent potting mix. The compost should be screened to ensure that only fine particles are used in the mix. Finished compost is not soil and cannot be used alone as seed germination or potting media.

In nature, the process of decomposition is erratic, depending on temperature, moisture levels and the types of decaying materials. A well managed backyard compost bin favors aerobic (with oxygen) microorganisms. If anaerobic (without oxygen) conditions develop you need to troubleshoot and figure out why and fix the problem.

## Troubleshooting

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
Bad Odor (rotten smell)	Too much moisture	Turn the compost or add dry, porous material
Bad odor (ammonia smell)	Too much nitrogen Compacted leaves Inadequate air	Add high-carbon materials Turn the compost Make pile smaller
Low compost temperature	Pile too small Too little moisture Too much moisture Too little air Lack of nitrogen Cold weather Particle size too large	Increase size, insulate sides Add water and turn Turn the compost Mix in dry materials Increase pile size or insulate pile with straw or plastic Chip or grind materials
Pile is dry throughout	Not enough water, too much wood	Turn pile and moisten, cover pile
Compost pile is damp and warm only in middle	Pile is too small	Mix pile with more material and moisten
Pest infestation –dogs, rodents, insects	Improper food scraps added Food scraps not covered	Don't add meat or meat by-products Place kitchen waste in center of pile Use rodent resistant bin
Neighbor complains	Compost is ugly	Get attractive bin or cover

## References

Clark County WA Master Composter/Recycler Training Manual 2006

*California Master Gardener Handbook* c2015

*WSU Master Gardener Training Manual 2005*. Composting section by Craig G Cogger Extension soil scientist & Dan M Sullivan, Extension soil scientist, Oregon State University; and James A Kropf, Extension agent, Pierce and King counties, WSU

Regional Recycling Backyard Composting Guide

UCCE Placer and Nevada Counties Basic Composting flier

Clark County Master Composter/Recycler Program Home Composting flier

*Home Composting Made Easy* by C Forrest McDowell, PhD & Tricia Clark-McDowell c 1998, 2002

*Backyard Composting Your Complete Guide to Recycling Yard Clippings* by Harmonious Technologies, Sebastopol, CA c 1992 – 1997

*Let It Rot the Gardener's Guide to Composting* 3<sup>rd</sup> Edition by Stu Campbell c 1975 – 1998

*The Complete Compost Gardening Guide* by Barbara Pleasant & Deborah L. Martin c 2008

