Loving Garland Green

COMPOSTING

One of the most essential tools to a sustainable garden is compost; it conditions the soil and provides an excellent source of rich nutrients to your garden. It also reduces the amount waste in our landfills. The hot method of composting takes about 7 months to turn the materials into a rich soil. This is the method we recommend.

There are two methods of composting: Cold and Hot. **Cold compost is** made by piling up materials and letting them break down for a year or two with an occasional turn if possible. Add cold compost to the bottom of a planting hole, don't mulch with it or use it on the soil surface if you've added weeds or plants that will volunteer (such as tomatoes or hollyhocks). Weed and volunteer seedlings in the compost sprout and create problems.

Hot compost comes from a compost pile constructed with a balance of nitrogen-rich and carbon-rich materials that are turned regularly, at least once every week or two. It is also kept evenly moist with occasional watering. Hot compost becomes very hot to the touch, killing weed seeds and many disease pathogens.

There are three stages of composting:

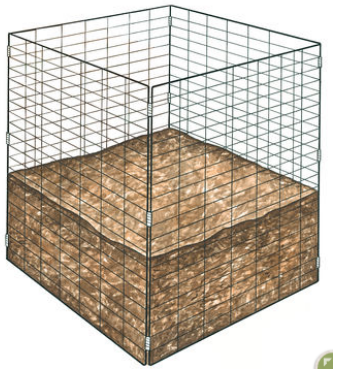
1) *Mesophilic Stage*
During this time the temperature of the core will begin to rise and microorganisms will start to form colonies and multiply within the pile. The mesophilic stage lasts for less than a week, during this time you should see your compost "sag," or settle.

2) *Thermophilic Stage*
During this stage the compost gets up to 140 degrees F. When organic materials reach that level of temperature, seeds from weeds are killed, harmful bacteria die off, and the pile starts to break down rapidly. The thermophilic phase can be assisted by making sure that your compost pile is damp (some suggest it should be as wet as a wrung-out sponge) and that there is sufficient air reaching the core of the pile.

Turning the pile once or twice during this stage will help get oxygen to the center, and turning the garden hose on the pile will supply enough water to keep the heat in. This stage can last up to three months depending upon how much attention you pay to the heap, what you are trying to compost, and what sort of bin or pile you are using.

3) *Cooling Stage*
This final stage can take up to 4 months where the final humus matures and the pile settles into a uniform mix. This can take up to 4 months, but you know your compost is ready to use when it is a rich brown color, earthy smelling, free of large pieces of debris. Turning occasionally is important, and during this final stage you may want to begin a second compost location and refrain from adding to the near complete one.

The type of compost bin you choose depends upon many factors: space, affordability, etc.



Tumbling composters are great, but, like the one shown in this photo, usually start at $99.00. Later in the year Loving Garland Green plans to offer classes for building a tumbling composter from recycled barrels.

Composting Begins in the Kitchen

Instead of tossing the ends of carrots and peels from vegetables into the garbage disposal, toss them into a can with a lid that you keep handy on the kitchen counter. A rule thumb for what to toss into your can is everything but animal material and citrus.

1. **Start your compost pile on bare earth.** This allows worms and other beneficial organisms to aerate the compost and be transported to your garden beds.

2. **Lay twigs or straw first, a few inches deep**. This aids drainage and helps aerate the pile.

3. **Add compost materials in layers, alternating moist and dry.** Moist ingredients are food scraps, tea bags, seaweed, etc. Dry materials are straw, leaves, and wood ashes. If you have wood ashes, sprinkle in thin layers, or they will clump together and be slow to break down.

4. **Add green manure** (clover, buckwheat, wheatgrass, grass clippings) or any nitrogen source. This activates the compost pile and speeds the process along.

5. **Keep compost moist**. Water occasionally, or let rain do the job.

6. **Cover with anything you have** - wood, plastic sheeting, carpet scraps. Covering helps retain moisture and heat, two essentials for compost. Covering also prevents the compost from being over-watered by rain. The compost should be moist, but not soaked and sodden.

7. **Turn.** Every few weeks give the pile a quick turn with a pitchfork or shovel. This aerates the pile. Oxygen is required for the process to work, and turning "adds" oxygen. You can skip this step if you have a ready supply of coarse material, like straw.

Once your compost pile is established, add new materials by mixing them in, rather than by adding them in layers. Mixing, or turning, the compost pile is key to aerating the composting materials and speeding the process to completion.

Additional Information on Composting and your Garden Soil

1. Two Elements of Compost: Carbon and Nitrogen

All compostable materials are either carbon or nitrogen-based, to varying degrees. The secret to a healthy compost pile is to maintain a working balance between these two elements.

> **Carbon** - carbon-rich matter (like branches, stems, dried leaves, peels, bits of wood, bark dust, sawdust, shredded brown paper bags, corn stalks, coffee filters, conifer needles, egg shells, straw, peat moss, wood ash) gives compost its light, fluffy body.
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> **Nitrogen -** nitrogen or protein-rich matter (food scraps, green lawn clippings and green leaves) provides raw materials for making enzymes.

A healthy compost pile should have much more carbon than nitrogen. A simple rule of thumb is to use one-third green and two-thirds brown materials. The bulkiness of the brown materials allows oxygen to penetrate and nourish the organisms that reside there. Too much nitrogen makes for a dense, smelly, slowly decomposing anaerobic mass. Good composting hygiene means covering fresh nitrogen-rich material, which can release odors if exposed to open air, with carbon-rich material, which often exudes a fresh, wonderful smell. If in doubt, add more carbon!

2. Weed Seeds in Compost

A liability in composting is the unexpected introduction of new weed seeds to your garden caused by slow or incomplete composting which did not generate enough heat to kill any and all weed seeds.

With home compost bins or piles, the way to eliminate weed seeds is twofold:

1. **Make sure your compost is hot enough.**
Reach your hand into the center of the pile - it should be almost too hot for comfort. Specifically, the temperature should be 130 - 150 degrees F. It takes about 30 days at 140 degrees to kill all weed seeds.

2. Mix your pile.
While your compost may be hot in the center of the mass, the outside of the pile is

cooler, giving seeds a chance to survive. Mixing brings cooler material to the warmer area and also increases aeration that helps attain the higher heat levels. Compost tumblers are very useful for this.

If you are buying bedding for animals, mulch or carbon-rich material to bulk up your compost pile, be aware of introducing seeds to your garden, via the compost. For example, make sure to get straw, and not hay, since straw is mostly weed-free. Ask the sales staff if there have been any complaints about seeds in these products.

One Final Word on Compost: <u>It is not exclusive garden soil</u>

Compost should be used as a soil additive, and not exclusively as the growing medium. Compost is a source of rich organic matter that provides nutrients for growing plants, but should be thought of as one component of a healthy garden bed.

Garden soil should be light and crumbly. Roots need to travel through the soil to access available nutrients that are essential to plant growth. If the soil is dense and compacted, much of the plant's available energy is directed to the struggling roots. By lightening the soil, you will facilitate root growth and, as a result, vegetative growth.

A simple test for soil density is to poke a finger into the soil. It should easily go down all the way to the third knuckle. If your soil fails this test, you need to add some peat moss or vermiculite to your topsoil to lighten it.