

## COMPOSTING

### What is compost?

Compost is a mixture of organic matter, as from leaves and manure, that has decayed or has been digested by organisms, used to improve soil structure and provide nutrients.

### Benefits of Using Compost

1. Improves the soil structure, porosity, and density, thus creating a better plant root environment.
2. Increases infiltration and permeability of heavy soils, thus reducing erosion and runoff.
3. Improves water holding capacity, thus reducing water loss and leaching in sandy soils.
4. Supplies a variety of macro and micronutrients. (However amounts not known)
5. May control or suppress certain soil-borne plant pathogens.
6. Supplies significant quantities of organic matter.
7. Improves cation exchange capacity (CEC) of soils and growing media, thus improving their ability to hold nutrients for plant use.
8. Supplies beneficial micro-organisms to soils and growing media.
9. Improves and stabilizes soil pH.

### WHAT YOU NEED

1. Green stuff (high in nitrogen) to activate the **heat** process in your compost. Perfect heat-generating materials include: young weeds (before they develop seeds); comfrey leaves; yarrow; chicken, rabbit or pigeon manure; grass cuttings; etc. Other green items that compost well include fruit and vegetables; fruit and vegetable scraps; coffee grounds and tea leaves (including tea bags - remove the staple if you

wish); vegetable plant remains; plants.

2. **Brown stuff** (high in carbon) to serve as the "fiber" for your compost. Brown stuff includes fall (autumn) leaves; dead plants and weeds (avoid weeds with seed); sawdust straw; old flowers (including dried floral displays, minus plastic/foam attachments); and hay.
3. **Air.** It is possible to compost without air (anaerobically), but the process employs different bacteria and an anaerobic compost pile will take on a sour smell like vinegar. It may also attract flies or take on a matted, slimy appearance. If you believe your compost pile needs more air, turn it, and try adding more dry or brown stuff to open up the structure. Turning a compost pile can be labor intensive and hard on the back. Some people use a shovel or pitchfork. There are also compost aerating tools that aim to make the process easier that are either of the "winged" type or "corkscrew" type.
4. **Water.** Your pile should be about as damp as a sponge that has been wrung out. Depending on your climate, you can add water directly or rely on the moisture that comes in with "green" items. A lid on the compost bin will help to keep moisture in. If a pile gets too much water in it, it might not get enough air.
5. **Temperature.** The temperature of the compost pile is very important and is an indication of the microbial activity of the decomposition process. The simplest way to track the temperature inside the heap is by feeling it with your hand. If it is warm or hot, everything is decomposing as it should, but if it is the same temperature as the surrounding air, the microbial activity has slowed down and you need to add more materials that are high in nitrogen to the bin.
6. **Soil or starter compost.** This is not strictly necessary, but a light sprinkling of garden soil or recently finished compost between layers can help to introduce the correct bacteria to start the compost cycle a little more quickly. If you are pulling weeds, the soil left on the roots may be sufficient to serve this purpose. Compost starters are available, but probably not necessary.

## **THE PROCESS**

Dig the hole for your compost pit. Your compost hole should be about 2 feet (60 cm) deep. The area of the hole will be determined by the amount of organic matter you want to add. Keep in mind that the compost will be finely chopped and piled to a height of 4 inches (10 cm) in the bottom of the hole when estimating the hole's size. Dig a trench 25cm deep

Chop your composting materials finely. Underground composting proceeds more slowly than above ground setups, and maximizing the surface area of your scraps is key to speeding the process. Kitchen scraps can be ripped apart by hand, chopped with a knife, or even pulverized in a food processor. Yard scraps can be broken down using a lawn mower. Aim for pieces no bigger than 2 or 3 inches (5 - 8 cm) in any dimension. Start with a 4 inch layer of brush, twigs, hay or straw at the bottom of the bin.

Then add a 4 inch layer of brown material

Then a thin layer of finished compost or good garden soil.

Then add a 4 inch layer of green material topped with a thin layer of compost or soil.

Cover your compost with soil. Once you have finished adding your organic scraps to the compost pit, you can backfill it with the soil you removed. Add the soil on top of the compost, filling the pit until it is again level with the surrounding soil. Recover with sod or seed with grass if desired.

Moisten each layer by misting it lightly with a garden hose.

Keep adding materials in alternating layers of greens and browns until the bin is full.

Once you have a full bin you can turn the pile every 14 days or so. The more you turn the pile the faster you will have finished compost!

Within a few days, the pile should heat up significantly, to about 160° F. This is a necessary stage in composting, as the temperature will kill many weed seeds and harmful organisms. If the pile fails to heat, there is insufficient nitrogen or water in the pile, and more should be added. The pile will decrease in size after a few weeks if it is composting properly.

The pile should be forked over after about a month (2 weeks if the material is shredded), putting the outside materials on the inside and vice versa to make sure everything gets broken down. Turn again 5 to 6 weeks later. Composting may be completed in 1 or 2 months if the materials are shredded, kept moist, and turned several times to provide good aeration. It will take longer if the materials are very coarse.

*Please see the following image with a summary*



*Make good compost by layering different waste*

To make good compost:

- Collect all waste from the cowshed, poultry house and farm
- Dig a pit 1 foot deep for each layer and 4 - 5 feet wide in the shade
- Layer the materials (see picture at left)
- Cover with polythene to stop water from getting in
- Leave it to rot
- Turn it every month
- It is ready for use after 4 - 6 months
- Take compost from one side as you add to the other end to let it rot well.