Grow Your Own Garden

What is Composting?

Composting is a great way to add organic matter and nutrients to your soil. It is produced when organic matter (anything that was recently living) rots down/decomposes. 'Hot' composting is an 'all-in-one' method that makes an excellent soil improver and nutrient-rich fertiliser. Mature compost consists largely of stable decayed organic matter, or humus, that builds soil structure and moisture-holding capacity. It is normally dark brown, crumbly, there are no visible plant parts and it has a pleasant, earthy aroma. Compost is alive! Microorganisms in compost are like living 'capsules' – they hold onto nutrients in their cells and also make them available at the roots in a soluble form that plants can absorb.

Making Compost

Composting is carried out by thousands of micro-organisms which live naturally in soil. A teaspoon of soil contains a billion microrganisms such as bacteria, fungi and protozoa. Micro-organisms need organic matter as food, air, warmth and water to grow and multiply. This is best achieved by constructing a compost heap all at once, rather than adding 'little and often' to a cold pile of rotting vegetation.

Size matters

You need to have all your ingredients ready at the same time and then build it all in one go. Heat is generated by beneficial bacteria breaking down organic matter. Within 24 hours a properly constructed heap can reach temperatures as high as 60 °C, killing weed seeds and harmful bacteria and fungi. Keep the heap warm by making it big enough, at least 1 cubic metre is best, and well insulated with a cover and solid sides.



Air

Aim to mix ingredients to create plenty of air spaces. Over time, as it settles, turning the mix adds in more air. This is better than leaving holes in the bin sides, which can cool the compost down. The freshly assembled heap will heat up, reduce in volume, and cool down – then is the time to turn it, adding air to 'jumpstart' microbial activity, heating and further decomposition.

Water

Bacteria and other composting creatures need moist conditions. Too much water results in cold wet slime and nutrients leaching (being washed away). Covering the heap keeps moisture in and excess rain out.

Compost Ingredients



"Greens and Browns"

The mixture of green materials and brown is important for maintaining rapid hot composting (a 3-6 month process).

Greens = Wet, soft, leafy, Nitrogen-rich vegetable peelings, grass clippings, fresh plants, coffee grounds, tea bags, animal manures, urine, green manures. **Vital** for getting the pile to heat up.

Browns = Woody, hard, absorbent Carbon-rich, generally bulky and dry, such as paper, cardboard, straw, autumn leaves, woodchip Grow Your Own Garden

Stack alternate layers of browns and greens on top of each other. Repeat 'til all ingredients used. Add water as you stack the layers.

Golden rule: add one part green to at least one part brown by **volume** e.g. use a bucket as a measure.

The best 'starter' material for activating a compost pile is mature compost because it contains nitrogen and a vast number of microbes. Urine also works well. Adding herbs such as comfrey, yarrow, chamomile, valerian, nettle and dandelion leaves results in a compost high in micronutrients such as potassium, magnesium, calcium, phosphorus, sulphur and iron.



Role of soil microorganisms

COMPOST MICROORGANISMS MAGNIFIED 1,000 TIMES



Microorganisms that decompose organic matter use up Carbon as a source of energy and Nitrogen to make proteins for building cell structure. They need more carbon than nitrogen. Carbon-rich browns takes longer to breakdown than nitrogen-rich greens. Getting the mix right is important: too much Carbon – nothing happens! If too much Nitrogen different bacteria produce smelly (ammonia) gas.

Using compost in your garden:

As a mulch: Compost can be laid on soil **surface** as a mulch 5-8 cm thick. Do not incorporate into the soil. Keep compost mulch 5-8cm away from plant stems. Nutrients will be washed by rain into soil. Benefits: soil moisture retention, insulates soil from extreme temperatures, breaks down slowly to provide nutrients and organic matter for soil structure.

As a soil amendment:

- Improves soil condition, and structure
- Increases the soil's ability to hold water and nutrients
- Supports living soil organisms (provides food and shelter)
- Helps dissolve mineral forms of nutrients (action of humic acids)
- May provide biological control of certain soil pests
- Helps return organic materials to the soil, and reduces landfill

As a potting mix: offers good water retention qualities and some basic nutrients.

As a compost tea: inoculant to boost soil microorganisms populations and increase diseaseresistance in plants.