

Sustainable Gardening: Using compost

Environmental Educator Fact Sheet



WHAT IS COMPOST?

Compost is a natural organic material resulting from the controlled breakdown of organic matter. Compost can be made at home in a compost bin from garden trimmings and food scraps, or it can be bought commercially from landscape suppliers. Compost is an ideal addition to your garden, making plants grow better and helps to create a sustainable environment.

WHY USE COMPOST?

• Better for you

There is scientific evidence that the flavour and nutrient content of fruits and vegetables are improved when grown in good quality compost.



• Provides nutrients for plants

Compost is used as a 'soil amendment' rather than a fertiliser, as unlike fertiliser, nutrients are released slowly over time. It is an excellent source of essential plant nutrients, particularly those that plants need in smaller amounts such as manganese, zinc and iron which are often missing from artificial fertilisers. The nutrient-holding capacity of compost amended soil is also increased, reducing the need for fertilisers. In turn this reduces the potential for nutrient runoff into waterways, which cause problems such as algal blooms. Better nutrient retention in soils can also help to protect our precious groundwater supplies.

• Improves the chemical properties of soils

Compost has the unique ability to moderate acidic (low pH) or alkaline (high pH) conditions in soils. Many soils in WA are low in organic matter and

tend to be acidic, which affects the availability of nutrients in soil, and the ability of plants to grow. Compost can help provide a more neutral pH and improve the availability of nutrients for plant growth in soils.



• Improves physical properties of soils

Compost helps to bind clusters of soil particles, called aggregates, aiding in the development of tiny air channels and pores which helps plant roots grow and take up nutrients. Soils that receive regular additions of compost are less likely to erode and impact on waterways, and retain moisture and nutrients needed for healthy growing plants.

Many of our sandy soils in WA can benefit from compost to help hold water and nutrients. In clay or silty soils the addition of organic matter helps open up tightly packed particles, allowing for water and air to penetrate easier as well as roots being able to spread more easily. Compost amended soils also tend to be lighter and easier to cultivate.

• Improves soil health

Compost is a living material that contains a range of microbes that can improve the health of soils and improve the vitality of plants. Organic matter present in compost also supports the growth of beneficial bacteria, fungi, insects and worms that play an important role in suppressing plant disease and aerating soil.



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Research has shown that good quality compost can suppress specific plant diseases, such as club root and white rot that can occur in unhealthy soils. Regular use of compost can reduce the need for chemical pesticides, making your garden more sustainable.

- **Water retention**

Retention of water in many of our sandy soils in WA is a problem, as they drain quickly after watering, with much of the water bypassing the root zone of plants where it is needed. Regular additions of compost can help hold water in the root zone, and improve drainage, meaning that you can maintain gardens with less frequent watering. On heavier clay soils, improved drainage can reduce problems of waterlogging.



Healthy soils help to protect our water resources. Compost improves water retention, promotes the growth of plant roots and helps bind soils particles together. This can reduce runoff and transport of soil, fertilisers and pesticides into waterways. In some soils a 5% increase in organic material

can quadruple a soil's water holding capacity. Compost also reduces water loss through evaporation by up to 70% and increases the water holding capacity of soil.

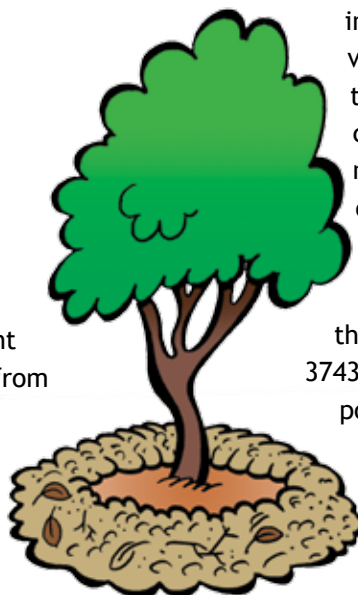
- **Save money**

Compost saves you money through using less water and fertiliser on your garden. Composting at home could also reduce your Council rates as it can save costs involved in:

- Waste transportation
- Waste disposal in landfill
- Constructing new landfill sites
- Maintaining landfill sites

- **Help reduce climate change**

Composting at home reduces the amount of waste that needs to be collected from households, reducing fossil fuel consumption in collection vehicles and the release of greenhouse gases that are responsible for climate change.



The disposal of organic wastes in landfill results in the formation and release of methane - a potent greenhouse gas - that is around 21 times more effective than carbon dioxide in its contribution to global warming. Methane is formed under low oxygen (or anaerobic) conditions in landfills. Composting at home avoids the disposal of organic wastes in landfill and reduces the effects of landfills on climate change.

Composting at home is often referred to as a 'greenhouse' neutral process as carbon dioxide released during the breakdown of organic matter is considered part of the natural carbon cycle.

COMPOST BLENDS AND MIXES

Compost can be blended with a range of materials to make it more suitable for a specific gardening use. Described below is the range of products that can be easily made with compost produced at home, or purchased as pre-blended products from nurseries or landscape suppliers.

You may like to trial the products on a limited basis in your garden to ensure the mix is suited to your plant's needs.

- **Potting mix**

Potting mixes are blended products that can contain a proportion of compost and other inorganic material to assist in drainage and aeration.

Compost is not usually used at a rate of more than 40% by volume in the mix, as it breaks down and can result in slumping or shrinkage in the pot. Other materials such as sand, vermiculite or gravel can be added to the mix to help keep it free draining and open so air can enter the mix. Starter fertiliser may be needed depending on the nutrient content of your mix and plant requirements.

Commercial potting mixes are available that contain compost. Look for potting mixes that are certified to Australian Standard AS 3743 (2003) to ensure you are buying a quality potting mix that will support the growth of your plants.



- **Garden soils**

When building new garden beds, and when you have poor soil or limited soil available on-site, you can save money by making your own soil blend or you can purchase it commercially. Compost made at home can be blended with soil on-site or you can purchase sand and blend it with compost to make your own garden soil. Depending on the fertility of your compost, you may need to use some slow release fertiliser to help plants establish in the garden bed.

Commercial garden soils are available containing compost. Look for soils that are certified to Australian Standard AS 4419 (2003) to ensure you are buying quality soil that will support the growth of your plants.



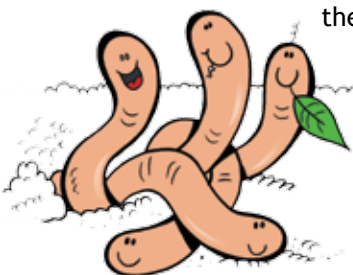
- **Topdressing**

Lawns during spring and summer benefit greatly from a topdressing of compost as it helps to provide nutrients and promote growth. To make topdressing from your home-made compost, screen out the coarse particles with an 8 or 10 millimetre garden sieve that can be purchased from hardware stores. Blend the fine compost with a small proportion of sand (approx 20%) to make it easier to spread and rake into your lawn.

- **Products containing worm castings**

Worm castings are a nutrient-rich organic material produced from the action of earthworms in home worm farms. Worm castings are best used like an organic fertiliser, and can be added as a small component to potting mixes, soils and topdressing (usually less than 10% by volume).

Worm farms also produce a watery liquid often referred to as 'worm juice' or 'leachate'. It is mainly water released during the breakdown of organic wastes in worm farms, and contains a range of soluble nutrients that can feed plants. Worm juice should be diluted with clean water at a ratio of 1:10 and applied directly to the soil surrounding the plant.



USING COMPOST IN THE GARDEN

Vegetable gardens

Compost can be used extensively in vegetable gardens to improve the organic matter content and fertility of soil. Compost can be surface spread and dug in a couple of weeks prior to planting.

Mulching

Mulching of the soil surface helps combat weeds, conserve water and also looks great! Coarse, semi-decayed woody material is suitable as mulch to put on top of the soil and around plants. It can be used as mulch around trees and shrubs. Make sure the mulch does not touch the stem of plants to avoid excess moisture retention which promotes disease such as collar rot.

Topdressing

Topdressing with compost on new and established lawns helps to replace organic matter and nutrients lost through mowing. Home-produced compost is ideal for this purpose as slow nutrient release helps in growth. Adding compost also means your lawn will hold moisture more readily and will need less watering. Topdressing with a 5-10 millimetre layer in spring and autumn is ideal.

Soil conditioning

Use compost to enrich your garden soil before planting. Compost is good for digging into the soil a couple of weeks before planting. It can be used in the planting areas of landscapes.

Seed starter and potting mixes

You can use your home produced compost for preparing your own seedling and normal potting mixes.



HEALTH AND SAFETY



If you intend making your own compost blended products at home, be sure to use gloves and wear a particle mask to avoid breathing dust. By keeping compost moist dust can also be limited and this will prevent spores or bacteria from becoming airborne. Avoid confined spaces for handling compost or soil materials.

MORE INFORMATION

Visit the ZeroWaste WA website: www.zerowastewa.com.au