

water saving ideas
soil improvement



Good soil is the foundation of a good garden. In order to ensure you use water efficiently in your garden, it is vital to improve the soil prior to planting. Soil improvement is fundamental when establishing lawns, plants and gardens in Perth, as the most common soil type in the metropolitan area is sand.

The table below summarises the characteristics of the main soil types.

				Benefits from:	Benefits from*:
Soil Type	Non-wettable	Water holding capacity	Nutrient holding capacity	Organic Matter	Soil Amendment (various)
Sand	Very common	Poor	Poor	Greatly	Greatly
Clay	Very rarely	Good	Medium	Greatly	A little
Loam	Rarely	Good	Medium	Greatly	A little
Gravel	Occasionally	Medium	Medium	Greatly	A little

** For more detail ask your Waterwise Garden Centre or Landscaper, or attend a free Great Gardens workshop.*

soil improvement

Various products can be added to soil to improve its water and nutrient holding capacity. Adding these products will:

- Improve soil structure
- Allow both water and nutrients to be retained around a plant's root system for longer, encouraging steady and healthy growth
- Ensure that the soil remains healthy and teeming with life

In all cases please be sure to follow the manufacturer's application and safety instructions.



what to add

1 organic matter

Organic matter is anything that was once living but has been broken down by natural processes.

Whichever material you choose, it should be well composted and fine in texture with small particles.

Waterwise Garden Centres sell a range of organic matter products that are suitable for adding to the soil; including soil conditioner, soil improver, soil concentrate and compost. Products that meet Australian Standards are recommended. To find a Waterwise Garden Centre near you go to www.watercorporation.com.au, and follow the 'Being Waterwise' links.

2 soil amendments

Soil can be amended by the addition of a different soil type (see table left) or by use of soil amendments. These are products which, when added to a soil, permanently change its water and/or nutrient holding capacity.

Soil amendments include Spongolite, Zeolite, Bentonite Clay (for sandy soils only) and Gypsum (for dispersive clays only). Amendments should be applied at the manufacturer's recommended rates.

3 soil wetting agents

Many West Australian soils do not absorb water well. If there is any indication that water is not penetrating the soil, a soil wetting agent should be applied during the planting or laying process.

Wetting agents should be applied to sandy soils at the start of the winter rains, in early summer and again as recommended by the manufacturer.

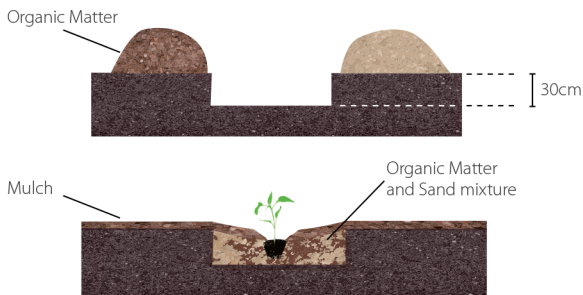




how to add

sandy soils

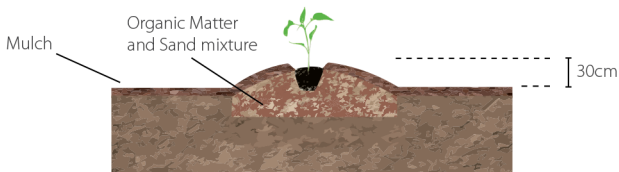
Dig a hole at least 30cm deep and as wide as possible but never less than three times the diameter of the pot. Half the soil from the hole should be removed and replaced with organic matter and soil amendment as per product directions.



Mix thoroughly before replacing soil in the hole around the plant. The plant should be hand watered immediately.

clay soils

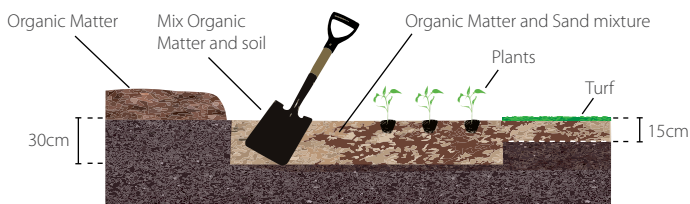
Digging a hole in a clay soil is not recommended. However, a combination of mound and shallow hole is acceptable. The mound above ground level will ensure adequate drainage.



Create a mixture of one third each of clay soil, sand and organic matter and use it to form a planting mound approximately 30cm high and as wide as possible. The plant should be hand watered immediately.

The majority of a plant's feeder roots are in the top 25-40cm of the soil. Organic matter and amendments should be added prior to planting or laying a new lawn, especially on sandy soils.

For new garden beds a 10cm layer of organic matter should be spread over the entire surface and mixed through to 30cm deep. Soil amendments should be added at the same time, according to the manufacturer's instructions.



mulch

Look for a mulch which has a Smart Approved WaterMark logo. A good waterwise mulch with large irregularly-shaped particles that hold little (if any) water has many benefits. These include;

- Saving water
- Preventing erosion
- Reducing weed germination
- Reducing stress on plants' root systems
- Improving the look of the garden
- Feeding the soil

Before you apply mulch, make sure you prepare the soil properly. Organic mulches should be topped up regularly to maintain a minimum thickness of 50mm.





establishing a new lawn

Soil amendment is essential to establish and maintain your new lawn. Without it, your established lawn will not grow satisfactorily when watered according to the sprinkler roster for your area.

Watering exemptions are available when establishing a lawn or garden if you meet certain criteria. To apply call the Waterwise Helpline on 13 10 39.

Before applying soil amendment, the area should be cleaned of weeds and debris, then smoothed and levelled.

Sandy soils should be improved by spreading a 7cm thick layer of organic matter, loam or a mixture of the two, and then mixing it through to 15cm deep. Add soil amendments before levelling the soil surface.

Clay soil may benefit from incorporating a 7cm thick layer of sand to improve drainage and soil structure, as well as a 7cm thick layer of organic matter.

Loam makes an excellent medium for supporting growth but still benefits from the inclusion of organic matter prior to planting.

When laying turf the recommended process is:

- 1) Firm the soil surface
- 2) Treat the area with a soil wetting agent
- 3) Lay out the turf and firm down with a roller to ensure contact with the improved soil beneath. An anti-transpirant can be applied to the turf to reduce water stress. Anti-transpirants are available as a spray from Waterwise Garden Centres and are applied to preserve and protect plants from drying out too quickly.

Establishing a lawn during periods of extreme heat is difficult. For more information on establishing or maintaining a lawn, visit Turf Australia's website at www.turfaustralia.com.au

Improving your soil and then looking after it results in better use of our precious water, promotes a healthier garden and is much kinder to the environment.

For more detailed information on soil amendment please refer to *Good Gardens with less Water*, Handreck, K, 2008, CSIRO Publishing.

For more information and expert advice, contact a Waterwise Specialist in your area by visiting www.watercorporation.com.au or calling 13 10 39.

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www.watercorporation.com.au

ISBN 1740434595 July 2010

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on request.