

Using water wisely

gardening food on a dry continent



MAKING BEST USE OF LIMITED WATER

In community and home gardens we can adopt the permaculture design principle of **use and value renewable resources and services** to harvest rainwater from the roof of our shelter and sheds, store it in a tank and use it for garden irrigation.

Combined with the compost and mulch, harvesting and using rainwater is another water-conserving technique to keep our gardens growing through the hot summer months and during drought.

MAKE A SELF-WATERING GARDEN

Self-watering container gardens, or wicking gardens as they are sometimes called, are useful in places with hot, drying summers and in gardens that are untended for days at a time.

They are sealed containers with a water reservoir below a sheet of geotextile over which the growing medium is filled and planted into.

The reservoir is filled with gravel or 100mm flexible agricultural pipe to give it structure, then filled with water via a filler tube connecting it to the surface of the growing medium. Water moves through the geotextile into the growing medium and to the roots of our plants. Growing medium works best when it is no deeper than 30-35cm. The reservoir is topped up as needed.

See our container gardens information sheet for details.



Above: The Randwick Organic Community Garden crew show off their newly-painted water tank.

The tank stores rainwater for garden irrigation.



Right: Green Square Growers make a self-watering garden in a public park.

Geotextile was laid over a gravel-filled water reservoir and growing medium filled on top and planted into. The planter was then mulched to reduce evaporation.

WATER CONSERVATION IN THE FOOD GARDEN

Method	NOTES
Mulch Mulching our garden is one of the simplest and most effective ways to conserve water held in the soil.	- mulches can reduce evaporation from the soil by approximately 60% https://www.abc.net.au/gardening/factsheets/how-to-mulch/9426510 - mulch, such as pea straw and leaf litter, improve the water-holding capacity of the soil and restricts weed growth that may compete for water with plants - apply a 7-10mm depth around plants to reduce water evaporation (Sydney Water).
Soil Maintain a compost-enriched soil.	- apply compost, worm castings and manures to your soil to improve its water-holding capacity and provide nutrients to plants - if your soil is repelling water add compost, sometimes you may need to add an organic wetting agent: https://jerry-coleby-williams.net/2007/02/27/wetting-agents-are-you-buying-trouble/.
Irrigation Select irrigation methods that conserve water.	- lay a network of permeable weeping hose through which water leaks - lay a network of soaker hoses with the holes turned towards the soil - hand watering with a hose fitted with a nozzle with a trigger to control the flow of water – apply water towards the roots rather than the foliage and water in the early morning to reduce fungal disease - drip irrigation for trees and perennial plants (those lasting more than two years); a dripper system uses around four litres per dripper per hour. Sprinkler system can waste up to 80% of the water due to evaporation - install timers on garden taps to limit water use - water garden plants less often to encourage deeper root growth - watering to a depth of the feeder roots of your plants.
Use a watering can	for smaller urban gardens, a watering can is one of the most effective ways to reduce water use in the garden as the water is applied directly and accurately to the plants
Plant drought-resistant plants	join a local seed savers group to find seeds of herbs, vegetables and flowers adapted to local conditions
Harvest rainwater in tanks	use to irrigate garden
Garden design	- minimise lawn areas and the use of exotic plants that need a lot of water and that do not produce food or contribute to pest management and pollination - use intensive gardening methods to minimise the size of the garden - establish low, shrubby windbreaks of perennial plants, such as flowering herbs, to reduce evaporation from your vegetable garden - group together plants with similar water requirements – avoids over or underwatering and simplifies installation of irrigation systems.
Construct microcatchments	On sloping land, microcatchments retain rainwater runoff until it soaks into the soil. - coutour ditches or swales are dug so that they follow the same level across the garden and hold water rather than draining it off - microcatchments such as a pit with the excavated soil mounded around it and planted to moisture-needing plants can be fed with runoff from shallow drainage lines dug across the garden; make a shallow catchment around perennial plants.
Use greywater	use treated greywater from laundry, but not directly on the edible leaves of vegetables; avoid cleaning agents containing synthetic chemicals so as not to contaminate greywater.

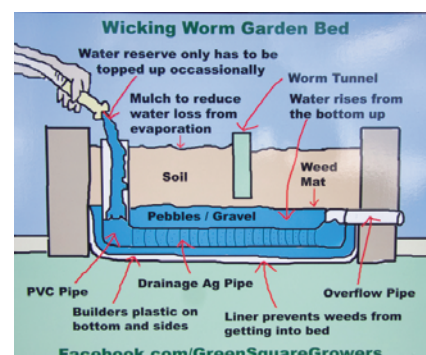


Diagram of a self-watering or wicking garden. Green Square Growers.