

Water in the Garden

A Good Advice Guide for Gardeners

The Garden Clubs of Australia Inc.

The Garden Clubs of Australia Inc. encourages all affiliates and their members to be as economic as possible in the use of water in gardening practices irrespective of their location across Australia.



Australia is noted as a dry continent although we know that some areas can measure their rainfall in metres. The reliability of rainfall across the whole of the country is variable; we experience periods of serious flooding as well as times of extended droughts and it is this characteristic of Australian climate that places great pressure on the supply of water, not only for the agricultural and pastoral industries but also for the vast majority of Australians living in towns and cities.

The provision of high-quality water services has become an expected part of the Australian way of life and States and water utilities have made large investments in the provision of domestic water services including desalination of sea water, processing and recycling of grey water and stormwater run-off. This has been accomplished at costs to the consumer that at the moment are reasonably affordable. We can simply not assume that this situation will continue indefinitely and all sections of society, including gardeners, need to accept responsibility for their water use to sustain our lifestyle at least at the current level.

What can gardeners do to be responsible users of water in the garden?

Given the spread of Australian communities, the differences in climate, including the irregularity of rainfall and the diversity of gardeners' interests, it is not possible to prescribe practices that meet the needs of all gardeners irrespective of their location; however, the following suggestions are made from which you might select to hone your practices.

Watering

Successful gardening will always depend on watering at the right time and in the right quantities. Plants will always get greatest benefit if water is applied early in the mornings or late in the evenings when evaporation rates are lowest.

Most gardeners adopt the practice of using personal judgment in making decisions on when their gardens need watering and when they have been watered enough. While some sources of advice suggest *"poke your finger below the mulch level in the garden and if it is damp, plants don't need watering"* also depends on a certain level of personal judgment. It may be that gardeners need to adopt more empirical approaches to their watering practices in the future if we are to continue the activity we so enjoy. There are many commercially available instruments that gardeners can use to assist them in their watering decisions and these should be considered.

Many gardeners have invested in reticulated watering systems to reduce the time involved in hand-watering allowing time to complete other tasks in the garden. However, reticulated watering installations using spray delivery systems have been shown in several research studies to be particularly wasteful in their water use. Dripper delivery systems appear to be much less wasteful, are not affected by the effects of strong breezes and can be more accurate in delivering water to particular plants.

In some circumstances, "weeping hoses" are worth considering as an effective delivery system. They should be placed underneath mulch so that water is delivered directly to plants. But they do suffer from variations in pressure across their length which results in differing amounts of water being delivered.



Composting

All gardeners understand the value of using compost, worm castings and manures in increasing the fertility of the soil and having a beneficial effect on the plants we grow. It should also be remembered that the use of composts increases the water-holding capacity of soils reducing the frequency with which we need to water.



Mulching

Mulching is highly recommended since its application brings multiple benefits to the garden. Mulch can reduce evaporation from the soil by up to 70%; it keeps the soil cool and prevents it from drying out in hotter months; it creates a blanket against frost in winter; and like composts, it contributes to the water-retentive capacity of the soil, adds soil nutrients and encourages worm and other valuable microbial activity.

If you are using coarse mulches like pine bark, pea straw or similar, it is wise to spread some nitrogen fertiliser on the soil first as some of the existing nitrogen might be lost from the soil as the mulch breaks down. Coarse mulches can be spread to a depth of 50 – 75 mm.

Medium mulches, like some pine bark and woodchips, are usually spread at 25 – 50 mm deep while fine mulches, like sawdust and grass clippings, can form a waterproof mat and should be no more than 25 mm deep so that water can reach the soil. (See above how straw is used both as mulch and as pathways.)

Watering Rates

As outlined earlier, the rate at which we water our gardens can result in significant waste through the inability of our particular garden soil to absorb the water provided.

It is worth reflecting on the *Best Practice Guidelines* issued by the Nursery and Garden Industry Association Australia to its members on overhead water delivery rates in production nurseries. Remembering that this industry uses highly developed potting media in its operation which are effective in absorbing water, NGIA advises maximum water delivery rates in excess of between 10 mm and 20 mm per hour (depending on the size of containers used) simply wastes water through run off.

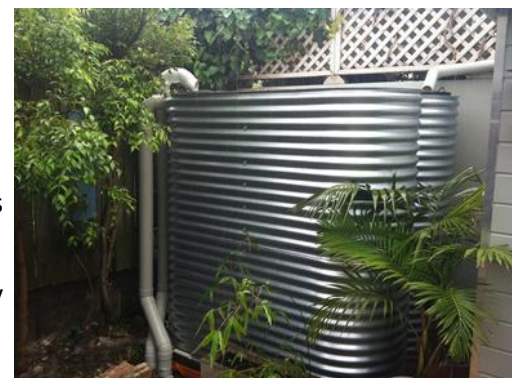
Clearly it not possible for The Garden Clubs of Australia Inc. to suggest a particular rate that will meet the needs of all gardeners, but we encourage members to explore this issue in their own contexts.

Rainwater Tanks

Rainwater tanks are popular for saving water, easy to use and available in sizes, colours and styles to suit most homes. Industry advice is that it is best to invest in a tank that holds at least 5,000 litres. Many users have them plumbed to their toilet and laundry. Some local authorities are requiring new developments to include rainwater tanks while others provide some financial assistance to retrofit rainwater tanks.

Gardeners should be aware that watering from the tank expends energy in running pumps and this additional expense needs to be considered.

Also, water tanks do need maintenance particularly at the inlet point so that leaves and other debris don't impede the inflow. Open inlets allow water tanks to become a major breeding location for mosquitoes which is a cause of concern in some local authorities. A fine mesh filter to prevent both debris and mosquitoes is strongly recommended.



'Grey water' refers to water from domestic laundry and bathroom (not toilet) use. Untreated, grey water is not normally recommended for watering the garden although it can be used if it's delivered underground buried to a depth of at least 10 cm. Care needs to be taken with the types of detergents used in the home to ensure that there is not a build-up of chemicals in the soil that are detrimental to gardening. Under no circumstances should grey water be used on vegetables or fruit for domestic consumption.

Drought Tolerant Plants

Using drought tolerant plants in the garden doesn't mean we are limited to growing only the "scruffy" varieties of Australian natives, agaves and lomandras. There is a huge range of drought tolerant plants avail-



able in Australia for all types of gardening — formal gardens, cottage gardens, subtropical gardens. These plants are suitable for hedging and screening, ground covers, mass plantings and include clumping plants, shade plants and trees.

Using drought tolerant plants can provide significant and varied foliar colour and texture in the garden so that the aesthetics of our gardens doesn't need to be compromised. We recommend that gardeners explore the many types of drought tolerant plants and consider introducing some of them into their gardens. Your local nursery can offer plenty of advice for suitable plant varieties.

Watering Lawns

Watering the lawn is a particularly difficult area to give advice on because of our great geographic variations and the variety of grasses we grow in our lawns. There are some broad principles that we all can follow. Lawns in warm weather need about 25 mm of water a week. (Place a container under the sprinkler for an hour and then measure how much water you have delivered. This also allows you to make sure your watering is even across the whole lawn.)

Water Early

If you water early in the morning when the air is cooler, there will be less evaporation. The grass also has the opportunity to dry off before the sun beats down to boil droplets on the leaves.

Water Evenly

Make sure you're getting coverage over your entire lawn.

Water Slowly

Only water as much as your lawn can absorb – excess water will run off.

Water Infrequently

It is better to give your lawn a good soak every few days than to water a little every day. You might try the screwdriver test – pushing a screwdriver into the ground will be difficult if the soil is very dry.



Finally, it is not intended that this document be used solely as a do-it-yourself manual for gardening watering practices. It is strongly recommended that gardeners seek out further specific advice appropriate to their area from their local nurseries and irrigation suppliers, State Governments, local water authorities, commercial operators and fellow gardeners who will be able to give advice and direction as to the most appropriate and up-to-date advice on various practices.



There are over 200 water authorities in Australia, most with websites and many with advice on using water effectively in your garden appropriate to your local area.

Several have extensive educational resources suitable for students at all levels of education which some teachers/gardeners will find very useful.

All are worth exploring at your leisure and are easily found. Just search on your city/town 'Water Authority'.



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