Sustainable gardening

Save water, money and time!
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- Sustainable Gardening Australia sgaonline.org.au
Over 18 per cent of drinking water supplies used in Melbourne households are for outdoor use. In order to secure our water supplies for future generations, we need to change our approach to watering the garden.

We recognise how important gardens are to all our residents and the enjoyment gardening brings to many people. Gardens help people feel better, encourage social interaction, increase use of outdoor space, reduce heating and cooling costs in nearby buildings by up to 20 percent, provide oxygen and absorb significant amounts of carbon.

We want to share with you some practical and immediate ideas on how efficient water use can help you maintain a rewarding and successful garden. By following the advice in this brochure, you will not only save water, but also money, time and our environment!

**Royal Botanic Gardens**

The Royal Botanic Gardens, Melbourne, provides a great example of water-saving solutions in practice. It has reduced its water consumption by 60 per cent over the past 10 years, through improved water use and efficiency and changing plant selection, whilst still maintaining plush green lawns, healthy flower beds, shrubs and trees.


**Permanent water use rules**

Permanent Water Use Rules are in place in Melbourne, providing greater flexibility in garden watering while curbing water wastage.

For residential and commercial gardens and lawns, you can water using a hand held hose fitted with a trigger nozzle at any time on any day.

Watering systems for gardens and lawns can be used any day of the week between 6pm and 10am.
Eleven top tips for a water efficient garden

1. Don’t make major changes to your garden in summer

Summer is the time to maintain and enjoy your garden. You can maintain your garden in Summer by keeping up the mulch, pruning and increasing shade. The ideal time for new plants, installing irrigation systems and other major changes is Autumn as the garden has nine months to recover before the heat of the next Summer.

In Summer, higher evaporation rates means that disturbed soil loses its moisture rapidly, making it hard for gardens to recover.

In Autumn, particularly once rain has fallen, your new garden will be less labour intensive to create and more likely to prosper.

For expert advice on how to create and maintain a water efficient garden including plant selection, design and tips on how to improve your soil, contact your nearest nursery, or find one at plantlifebalance.com.au
2. Mulch

Mulch can reduce evaporation from soil by up to 70 per cent. Mulch is like a blanket on the soil, keeping it cool and protecting it from drying air and winds.

Mulch also improves soil structure and increases water retention, soil nutrients and worm activity. Mulch is essential if you are going to maintain your garden through periods of low rainfall. And don’t forget, it’s covered by the Living Victoria Water Rebate Program.

**Coarse mulch**

Chunky pinebark, fresh pea straw and lucerne, pebbles and even recycled concrete and bricks. All of these make long lasting mulch and are excellent for weed prevention and keeping soil cool, particularly if the mulch is light-coloured. If using coarse organic mulches, spread some nitrogen-rich fertiliser on the soil first, as some nitrogen may be lost from the soil as the mulch breaks down. This type of mulch can be 50 – 75mm (3 inches) deep.

**Medium mulch**

Medium mulches like pine bark or wood chips are usually spread at around 25 – 50mm (2 inches) deep and are excellent for weed prevention.

**Fine mulch**

Fine mulch may include sawdust, grass clippings, rotted pea straw and compost. It shouldn’t be laid more than 25 mm (1 inch) deep, as it may prevent water from reaching the soil. An added advantage of fine mulches is they break down quickly, attracting worms and improving the soil.

3. Compost

Soil is a living thing. Compost increases organic content in the soil and provides material to keep the soil alive and full of nutrients. The perfect growing soil is one that drains easily so it doesn’t get waterlogged, yet holds enough water to feed the plants.

Without good soil, no amount of water will allow your garden to thrive.

Compost is easy to make at home and if you don’t have a compost heap, you can start one by piling food scraps, leaves and garden waste.

To find out more about making a compost heap visit [sgaonline.org.au](http://sgaonline.org.au)
4. Rainwater tanks

Rainwater tanks are undoubtedly popular for saving water. Tanks are easy to use and available in styles to suit every home. Rainwater tanks can also provide you with free water all year round.

It’s best to invest in a tank that holds at least 5,000 litres with the tank plumbed to your toilet and laundry or garden.

Tanks plumbed to the toilet and laundry can be used effectively during periods of high rainfall when you don’t need to water your garden. Toilets use approximately 13 per cent of drinking quality water in the household and washing machines use around 13 per cent. The tank can also be easily connected to outdoor taps and hoses.

Tank water should be used in preference to greywater, especially for herbs and vegetables. Even better, use tank water in conjunction with other recommended water-saving measures like mulch, drip systems and soil additives.

If you are in the process of planning a new house we encourage you to ensure the design includes provision for a rainwater tank. At the planning stage you can arrange for a suitable space for your tank, including underground and bladder style tanks for under your decking. You will save water and add considerably to the value and enjoyment of both your house and your garden.

Visit tankulator.ata.org.au to calculate the tank best suited to your needs.

5. Water efficient practice

Make the following common practice in your garden:

- Don’t water in the middle of the day, in windy conditions, or if rain is likely
- Make a small dam from mulch and soil to avoid water running off the soil
- Water the roots of plants rather than the leaves, reducing windspray and evaporation
- Cool season grasses should be left longer in Summer but warm season grasses (couch, buffalo) can be kept short
- Avoid cutting grass by more than a third of its length at any one time
- Replace struggling plants in Autumn with drought-tolerant species
- Remove weeds frequently as they compete for water with your plants.

Hop onto smartgardenwatering.org.au to calculate potential water savings in your garden.
6. Greywater

Greywater is a great option for supplementing garden watering because it doesn’t rely on drinking water or rainfall variability, however it does need to be managed carefully. Basically, water can be recycled from your shower and washing machine but because it contains some bacteria, detergents, cleaning agents and waste material, it isn’t suitable for all garden uses.

Greywater systems can range from the humble bucket to more complex diversion, reuse and treatment systems. A greywater system that complies with the Environment Protection Authority (EPA) guidelines and is installed by a licenced plumber may be eligible for a rebate under the Living Victoria Water Rebate Program.

Visit GreySmart at savewater.com.au to find the system best suited to your needs.

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**Do’s ✓**

- Only use wastewater from baths, showers, handbasins and washing machines (preferably the final rinse water)
- Only use greywater around the garden and rotate which areas you water
- Select garden friendly detergents that are biodegradable and low in phosphorus, sodium, boron and chloride
- Wash your hands after handling greywater
- Stop using greywater during wet periods
- Stop using greywater if odours are generated and plants do not appear to be healthy

**Don’ts ✗**

- Don’t water vegetable gardens if the crop is to be eaten raw or uncooked
- Don’t use greywater that has faecal contamination, for example wastewater used to launder nappies
- Don’t use kitchen wastewater (including dishwashers) due to the high concentration of food wastes and chemicals that are not readily broken down by soil organisms
- Don’t store greywater for more than 24 hours
- Stop using greywater if odours are generated and plants do not appear to be healthy
8. Review your pot plants

Outdoor plants in pots use a lot more water than plants in the ground. They are more exposed to sun and wind, only have a small amount of potting mix to store water in and they dry out faster.

If you need to minimise water for your garden, one solution is to reduce your pot plants. Cuttings and nursery plants should be put into the ground in Autumn. Pot plants on terraces and small spaces that you really love should be collected together out of the wind and preferably in shade over Summer. This will reduce not only the water you use, but the time you need to spend watering.

When you water, try plunging your pot plant into a bucket or container of water. Once no more bubbles come from the potting mix, take the pot plant out and let it drain, ideally back into a container so the excess water can be re-used.

The right plant, for example a succulent, in good quality potting mix with soil additives, mulch and a glazed pot will tolerate dry conditions and can look fantastic.

7. Vegetable gardens and fruit trees

Vegetable gardens and fruit trees are an important aspect of many gardens. In addition to providing you with a source of food, they reduce transport costs for food provision and recycle household waste through compost. As for the rest of the garden the key tools are mulch, drip irrigation, soil additives and good plant selection. There is an interesting range of relatively drought-tolerant food plants.

You should mulch vegetable gardens and if you use pea straw it will also keep your plants cooler and improve your soil, but you will need to replace it regularly. Your irrigation system will have to make allowances for digging and soil renewal. A removable weeping hose under mulch can work well. Adjustable drippers to individual plants mean that you can turn the dripper up as plants grow and turn it off once the vegetable is harvested.

Fruit trees should be mulched and watered with a dripper system. Using good quality soil and maintaining healthy plant stock will mean the plants need less water and will be more disease resistant.

Following harvest, ensure you add manure or compost in preparation for the next crop. For fruit trees, mulch well and consider some early pruning to reduce water demand. Water from your rainwater tank is well suited to watering your vegetable garden or fruit trees.

Visit sgaonline.org.au or contact your local community garden for hints and tips for your fruit and veggies.
9. Soil additives

One of the problems with soil that has dried out is it repels water, wasting the precious water you put on it. Soil wetting agents and water retention products can dramatically improve the success of new plantings and water absorption in your garden, particularly if it is already very dry.

Water crystals absorb water and roots can access this as the soil around dries out. Wetting agents enable water to soak in and also hold water in the root zone.

The biggest problem with pot plants and raised beds is the soil drying out and becoming resistant to water. Wetting agents can reduce pot watering by 50 per cent and water storage products in the soil will also extend the periods between watering. These items are included in the Living Victoria Rebate Program.

10. Watering

Here’s a test. Before watering your garden, push aside the mulch and put your finger into the soil. If it is moist below the surface, then you don’t actually need to water.

Many healthy plants in good soils are drought-tolerant and even in dry weather conditions will not need additional watering once established. With your existing plants try watering less frequently and then not at all.

Observe them for signs of stress including wilting and leaf fall. You will be surprised how tough many of your plants are!

Less frequent watering forces roots down to find water, making the plants less reliant on surface water and better equipped to withstand hot, dry days.

Check the four-day weather forecast at bom.gov.au. If there’s rain ahead, let it do the watering for you.
11. Irrigation

There are many irrigation systems available to purchase and install. We suggest you seek the advice of a horticulturist, irrigation specialist or green gardener when planning to install an irrigation system.

Approximately 25% of gardens have spray irrigation systems. However, drip systems are more effective as no water is carried away by the wind, they don’t cause over spray, and they prevent excess surface evaporation.

In addition, a spray irrigation system operating above fine mulch will water the mulch rather than the plants, so much of the water is likely to be lost to evaporation, or absorbed by the mulch rather than the soil below. Drip systems on the other hand emit water at or below the ground surface, targeting your plant’s roots.

There are products that allow conversion of spray systems to drip systems. This can be achieved by removing the spray risers and inserting 6mm drip lines in their place. Drip irrigation systems are not permitted to emit more than 9 litres per hour per metre of hose.

Digital timers can also be attached to ensure you do not water for unnecessarily long periods of time. A rain sensor or a soil moisture sensor should be attached to the digital timer to ensure efficient and effective watering.

You may also consider connecting your irrigation system to your rainwater or greywater systems. By careful about using greywater in drip systems unless it has been well filtered. If the greywater is not filtered, it is likely the irrigation system will block up very quickly.

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Water weepers/porous hoses

Simple, porous hose that sweats water out along its length. Ideally laid below mulch in small trenches it can also be laid above ground in contact with the soil, but best not laid on top of mulch. Flow rates are likely to vary over the length of the hose in uneven terrain and depending on your water pressure.

The hoses can be combined with a filter, flow regulator and pressure regulator.

| Volume | Flow rates are measured by the volume of water in litres emitted every hour, per metre of hose. |
|        | Flow rates vary from 4-9 litres per hour per metre. |
| Pressure | These systems are generally designed to operate at low pressure 60-100 KPa. Most systems will need a pressure regulator. |
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Dripper Systems

Hoses with in-line drippers at regular intervals should be placed above ground and below mulch. Importantly these are also available in 4mm versions that can be used to retrofit existing spray systems by removing the risers and inserting drip tubes.

Some products have an inline pressure regulator and filter. Most products are not pressure compensated so there may be some variation in flow rates.
To find out more about water efficient gardening, see:

southeastwater.com.au
Information and educational material on water efficiency and the water industry.

water.vic.gov.au
Information on rebates, government initiatives and water re-use systems.

bom.gov.au
Weather forecast information.

sgaonline.org.au
At the Sustainable Gardening Australia site you can find advice on everything from mulch to plant selection and greywater systems.

epa.vic.gov.au
Visit the Environment Protection Authority for greywater guidelines.

ngiv.com.au
The peak body for the nursery and garden industry in Victoria.