



Watering

Water is precious. If you are on a water meter, you may know its cost. Despite living in a temperate climate in the UK – especially the North - where we are usually lucky (yes, really) to get a lot of rain (obviously not levels of rain that create floods), we should still value water.

Knowing how to use water carefully and cleverly in the garden will become more important, not just during the occasional droughty period, but more regularly if scientists are correct about long term climate change that will bring hotter, drier weather.

These tips will help you keep expenses down and use valuable water to its full potential.

How much you need to water your fruit and veg will depend on a number of circumstances such as:

- What kind of soil you have: clay retains water better than sandy soil
- Whether your plants are in pots or in the ground
- Whether the weather has been wet or dry
- Whether windy weather has dried the soil
- What stage of growth the plants are at: whether they are young or established with a good root system

1. When to water and how to tell if a plant needs watering

Observe your plants every day. Get used to the way they look. You will almost start to see them ask for water when they are thirsty. For many plants in the fruit and veg garden, watering one or twice a fortnight should be enough; and if there's rain, less often.

- Plants need variable amounts of water depending on their stage of development. Well-established perennial plants, shrubs and fruit trees need less frequent watering as they will have a stronger root systems to reach water (and nutrients). Newly planted, shallow rooted plants (eg lettuces) will need more attention with watering. Likewise, seedlings need regular watering, although shouldn't be overwatered as this can lead to rotting. A newly-planted fruit tree, like any tree, will need regular watering to help it establish a strong root system and is best planted late winter, early spring to ensure this.
- When a plant is flowering before setting fruit, say tomatoes or runner beans, they will be grateful to be kept moist but will cope with less water after that.
- Of course when there's a lack of rainfall, in times of heat and drought, plants need watering more than during wet, cooler periods. Sometimes rain after a dry period runs off very dry soil, so it is worth checking below the surface rather than assuming a rainfall has adequately watered the vegetable garden. Similarly, windy weather will dry the soil out more than on less breezy days.
- Shade decreases evaporation. In the height of the season, when water is critical, put up some temporary shade if you can.
- Tell-tale signs that plants need watering: if the ground is so dry it is cracking, the plants will benefit from a good long soak. If the soil is dry and the plants are looking limp, they are probably thirsty! You can check the moisture of the soil by digging in a little with a trowel rather than just making assumptions by damp looking soil on the surface. Some plants' leaves will go yellow if they are not well watered.

2. How to water your plants

- As you probably know, plants drink through their roots, not their leaves, so direct your watering efforts to their roots. In fact it's helpful to avoid getting water on, for example, courgette leaves in the summer as this can lead to mildew (see diseases section).
- You can help water reach larger plants' roots by cutting a bottle in half and up-ending the top part into the soil next to the plant so that it acts as a funnel direct to the plants' roots. This is also a helpful way to find the root for some plants if they are large and rambling like many squashes.



- Alternatively, make a very small hole in one side of the base of a plastic bucket, and then stand the water filled bucket with the hole near to the stem. It will trickle out very slowly and seep down into the soil.
- Water plants thoroughly, not just the top few centimetres of the soil which are likely to dry out faster, to ensure the water goes right to the roots. A plant affected by drought through not being watered enough will become stressed and not flourish. Perennials like young fruit trees will struggle to get established (ie grow a strong root system) and be more susceptible to disease or pest attack. So don't be too thrifty by underwatering as that can be a false economy.
- Watering cans v hoses: it's probably stating the obvious that you are likely to use less water if going backwards and forwards to a tap with a watering can.
- If you are using a hose, don't leave it running on the ground by your plants unless they need a seriously long drink. Likewise, sprinklers use a lot of water and don't direct the water to plants particularly effectively. They are often used on lawns, which are resistant to drought anyway; the grass might brown but is not dead and will recover when the rain comes.
- Grouping together plants that have similar watering needs helps you to measure the water to each.

3. How to minimise watering

Water as infrequently as possible but water deeply when you do, so that the water reaches deep into the soil. This means that it will dry out more slowly and the roots will learn to go deeper and search for the water already in the soil.

- Watering plants in early morning or at dusk minimises evaporation, so you can water less.
- Your plants will dry out less if you mulch them by covering the soil around plants with a water-retentive layer. There are many ways to mulch plants including newspaper, lawn clippings, cardboard, woodchip and others. The most effective mulch is one that will also feed your plants such as compost, ideally homemade and well-rotted. It will keep in moisture and help your plants not to dry out. Mulching, whatever matter you use, will also help keep weeds down, so it's win-win. Just be careful not to use mulches that attract slugs to eat your plants – in UK an example would be grass or straw. Some people advise to put mulch around trees but not touching their trunks as this can lead to diseases.
- Keep your fruit and veg plot clear of weeds or other unwanted plants that they may be in competition with for water.

- When you plant out your plants, make a little dip in the level of the soil into which you plant, allowing the water to gather around the stem before draining onto the roots. Watering into the dip ensures less runoff.
- Put up some temporary shading to reduce the effect of the hot sun. You can even stand a garden chair near to the plant just to shade it for an hour or two.
- When you plant large plants, like young trees, fix a length of hose under the soil slanting from the roots to the surface and sticking up for about 6 inches, so that you can water into that, and the water reaches the roots immediately.
- Plant only healthy robust plants. Ailing or sad looking plants will struggle and need more water and may die anyway.

4. Capturing rainwater

- As well as being a free resource, rainwater is healthier for your plants as it doesn't contain the same chemicals as tap water. Cats and dogs know this: they often prefer drinking from puddles than their tap-water filled bowls. Some plants in particular, thrive on rainwater, such as blueberries, which like the slightly more acid content of rainwater compared to tap water.
- Water-butts are a great way to harvest rainwater from your drainpipes. They are most commonly attached from the house drainpipes, but can also be linked up to a shed, garage or other garden building. You may be able to find one on a give-away group. Check out if your water supplier/ local council sells cheap water butts. Be aware though that their 'special offers', may not be any cheaper than other retailers so do shop around.
- It is possible to make your own water butt, for example from a large plastic container like an old wheelie bin, however it is not something I have done or know of so can't share any instructions here. Bear in mind that the biggest water butt may only hold a few days' worth of water for you so do combine this with other methods for minimising watering.

A note about using rainwater on seedlings. Garden Organic says not to use rainwater on seedlings as they can get damping off disease – fungal diseases. “Because of this danger, seedlings should only be watered using tap water, which has been treated by the water company to be free of any pathogens. Once your seedlings are past the first potting-up stage, harvested rainwater can safely be used.”

5. Choose plants that need less watering

- If you really want to minimise the amount of watering your veg garden needs, choose plants that do not need much water, often described as drought-tolerant plants.
- Large older plants will need more watering than younger plants when first planted. So buying bigger is not better. Smaller plants will establish more quickly, and they are cheaper too. Win-win.
- As mentioned above, well-established perennials plants, shrubs and fruit trees need less frequent watering as they will have a stronger root systems to reach water (and nutrients) so you could aim to focus more on them when planning and developing your garden.

The chart below shows the watering needs of a few vegetables. It's always worth looking them up individually to find out more about their own particular watering needs, especially at different times of development.

Plants needing little water	Plants needing a medium amount of watering	Plants needing plenty of water or regular watering
After they have established, these plants don't need much watering: Leeks Beans Onions Shallots Garlic Rhubarb Jerusalem artichokes Grape vines Asparagus Mediterranean herbs like thyme, rosemary	Squashes Beetroot Sweetcorn Parsnip Carrots Swiss chard Radishes (otherwise they can become woody) Potatoes Cucumbers Peppers Tomatoes Fennel Celeriac Courgettes	Green leafy vegetables like lettuces and cabbages Celery

6. Container gardening

Plants in pots and other containers dry out faster than those in the ground so need more watering.

- If you have the space for bigger pots, they will be better than smaller ones as they can contain a large volume of moisture-retaining compost and have a larger surface area to soak up water when it rains.
- Some people use water-retaining gels but that's another expense, and you may not want whatever chemicals they contain in your food plants.
- Mulch your containers to help retain moisture in the same way as plants in the ground.
- Although terracotta pots look lovely, cheaper plastic pots will retain moisture better.
- Plants in pots that do not need much watering will benefit from being watered at the roots through a saucer, rather than direct into the plant pot. This applies to cacti and succulents – ornamental plants – more than edibles.
- Whilst plants in the ground will need less watering than those in pots, a vegetable garden in raised beds will need even less watering due to the depth of the accessible soil that retains water.
- At the height of summer, or when you go on holiday, it's good to fill a child's paddling pool in a shadier area with 2-3 inches of water and put all your pots in. They will not be troubled by standing in water for a while. You can even treat the paddling pool as a hospital, reviving really stressed plants.
- Putting a plastic pot - say from a take-away - filled with water in the bottom of hanging baskets will create a secret reservoir of moisture.

7. Re-using household water

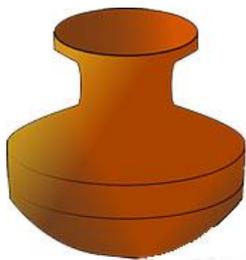
- Have you noticed how much water is wasted going down the drain when you're waiting for the hot tap to reach the right temperature? Try capturing this in a bowl or watering can. This water is completely clean. Similarly you can catch fairly chemical-free water if you rinse fruit and veg in a colander over a bucket. It might initially seem like a faff, but you'll be amazed at how much water is usually wasted. Try it before you dismiss it 😊
- Grey water diversion. There are methods for diverting used water from the kitchen sink, showers, baths and washing machines to use in the garden but these can be complex to set up and manage. There are likely be chemical detergents from washing in the water that you won't want in your vegetable garden. There are also issues with storing this kind of water safely to prevent incubation of diseases, so it is generally recommended to use this 'grey water' on ornamental

plants, rather than on edibles, especially not on fruit or vegetables eaten raw, like salads leaves. In permaculture gardening there are systems where grey water is diverted through reed beds to clean it before being led to where the water is needed in a vegetable garden. However I only know about this practice in theory, so if interested you will need to undertake your own research. There is more information on the website of the Centre for Alternative Technology who operate this system on their site <https://www.cat.org.uk/>

8. Irrigation and drip watering systems

Apologies for sharing ideas that I've not yet trialled but it's hopefully better to share information and ideas that people can then pursue if interested.

- Watering systems with tubing that snakes its way round your vegetable garden can be set up for pots or plants in the ground. These can be very effective in targeting water to plants' roots and can even be linked to timers on taps for self-watering. I currently have no experience of these to share, either thrifty or extravagant, so can't comment, but there will be information on the internet for those interested in finding out more.
- In hot, dry climates, ecological gardeners may set up underground water tanks to harvest, store rainwater, store and automatically feed it through to plants. These are complex to set up but undoubtedly an excellent investment in those climates.
- At a simpler level, plastic or terracotta spikes that screw into a plastic bottle directed at the plants' roots are available to buy, a bit like the homemade funnel described earlier, but providing a slower release of water over time.
- Clay pot irrigation is a traditional technique used in hotter countries that submerges water-filled clay pots, sometimes called Ollas pots, in the ground. The unglazed clay pots are sunk next to plants, gradually releasing water as needed by the plant. Plants' roots are said to grow towards the pot to water themselves. When the soil around it is moist, it stops releasing water. These are available to buy in UK but are quite pricey. Luckily it is possible to make your own with ordinary clay plant pots. You need to use unglazed clay pots to ensure they are porous. There's a video guide on Tanya Andersons' wonderful garden website, Lovely Greens, at <https://lovelygreens.com/>. Just type in Ollas as a search word.



An image from Windows clipart of a traditional ollas



I am planning to try this with a circle of plants around the clay irrigation pot.

Here's a simple no-cost way to make a free-standing drip-feeder from an old bottle. I haven't tried this myself so made a mock-up as shown in the image.

Cut a series of holes or slits in a good size plastic bottle, submerge in the ground by plants, then fill with water so that it acts like a hose beneath the soil. Is it a lot of input for the job it does?

Considerations might be how often it needs filling; how many would be needed and whether they are taking up space that could be used by additional plants. Would a good soaking with a watering can or hose be more efficient if you have to refill the bottle regularly?

It's fun to try different techniques, so let me know if you try it!



Hopefully you will find these tips for minimising water help you both to reduce your water bill and the time spend watering. But having said that, walking round your garden with a watering can or hose, nurturing your plants with a good soak can be quite a pleasing and relaxing activity, especially if you make a rainbow where the hose water meets the sunshine 😊

A last tip: If you're keen to save water, instead of urinating in the toilet and using water to flush it away, urinate in a bucket or large tub with a lid then use the urine as a compost activator or watered down to add nitrogen to your plants. Win-win!

Danielle Lowy, with input from and thanks to Paula Whittell.