

*How to Water the*

# EDIBLE GARDEN



## Why is it Important to Water Plants Regularly ?



Water serves many required functions for plants. When plant roots take up water from the soil, they also transport nutrients present in the soil and make them available for all of the parts of the plant to use. Water facilitates the process of photosynthesis. Chlorophyll in the leaves of plants absorbs the sun's energy, which in turn splits the water molecules drawn up by the plant roots into hydrogen and oxygen. The leaves release the oxygen into the atmosphere, while the hydrogen is combined with carbon dioxide absorbed by the plant from the air to form sugars called glucose. This is essential food for the plant, helping it to grow and develop. Plants also need water for transpiration. This is a special way for plants to recover water loss due to evaporation. To keep plant cells firm and prevent the plant from wilting, water must be taken up from the roots to replenish the moisture that is released from the leaves.

Finally, seeds need water to germinate. Dormant seeds can't wake up if they are kept in a dry location – they need moisture to kick start the process of sprouting. Whether you garden indoors or out, it's easy to see why it is important to stick to a regular watering schedule to keep your plants happy and healthy.

# CONSISTENCY IS KEY

Watering plants only when they start flopping over with thirst isn't recommended. Perpetually drought-stressed plants tend to be more susceptible to other problems, such as pests and diseases. There is also a chance that you might leave the watering just a little too long and the plant will reach the point of no return. If there isn't sufficient, regular rainfall in your region, or if you garden indoors, you need to provide irrigation at regular intervals and at the rates required by your plants. Underwatering isn't the only issue to watch out for. Overwatering can be a huge problem, as well. Too much water reduces the amount of oxygen in the soil and can hinder root development and growth. It can also contribute to serious and potentially deadly conditions such as rot, mould, and mildew. It's a good idea to allow plants to dry out a bit between waterings – just don't let them reach the wilting stage!

Watering consistently can also prevent common problems such as the splitting of produce, particularly in plants such as cabbages, kohlrabi, and radishes. Keep the bounty from these plants free of cracking right up until harvest by carefully watering at a consistent rate, at regular times.

Maintaining a regular watering schedule can also help prevent common afflictions such as blossom end rot in tomatoes. Without enough water, your plants can't take up the nutrients they require to thrive. If tomatoes can't obtain the amount of calcium they need from the soil, they may rot at the blossom end. (This isn't deadly, but it makes for really ugly, less desirable tomatoes). It's fine to add calcium to the soil for your tomatoes to use, but they need water to transport the nutrients to all of their parts. Without sufficient applications of water, the calcium just sits in the soil, doing nothing.

For many edible plants, applying enough water at the right time is critical to obtaining the best flavour. An underwatered or inconsistently watered radish or cucumber plant, for example, yields hot or bitter-tasting produce – and we definitely don't want that!





## BEST TIME TO WATER?

As a general rule, try to water in the morning. This is particularly important in the heat of summer, when high temperatures during the day will cause the water to evaporate more quickly than in the morning. You may as well water when the plants can most efficiently use it. That way, you're not wasting your energy and hard work, either!



## HOW SHOULD I WATER?

Splashing water into the leaves of plants can sometimes spread pathogens which can lead to disease, so it is best to try to direct irrigation to the base of the plant whenever possible.

If you garden in containers, you can fill the saucer with water and allow the potted plant to stand in the saucer for about ten to fifteen minutes until the growing media absorbs as much moisture as it can through the drainage holes in the container.



# HOW MUCH SHOULD I WATER?



The general recommendation is to offer your edible plants in raised or in-ground beds 2.5 centimetres (one inch) of water per week during the height of the growing season. It is always better to water deeply and infrequently than to frequently apply light splashes of water. If the water is sitting too close to the surface, it has a greater chance of evaporating quickly and never becoming available to the plants that need it.

There are several factors that influence how much water plants need, however. Some plants, such as lettuce, have shallow roots and don't need as much water as carrots, which have long taproots, or tomatoes, which have extensive, deep root systems and tend to be quite thirsty. Because of this, you won't need to water lettuce as deeply as you'll need to water carrots or tomatoes – the water doesn't have to percolate down to a significant depth in the soil. Try to learn the individual water needs of your plants and irrigate accordingly.

Some plants simply do not need as much water as others. Generally, most vegetables and fruits cannot produce well in low water conditions, but some herbs, such as rosemary and thyme, are tolerant of drier soils. Knowing which plants prefer more water will help you decide how much to give them. It is also helpful to situate plants that have the same water needs together in the garden – it makes it easier when applying irrigation.

The type of soil you have in your garden will play a large role in how much you need to water – and how often. Soils that are predominantly composed of clay are able to hold water better than sandy, loose soils, where the water rapidly runs through. Sandier soils will need to be watered more frequently than clay-based ones. Likewise, if you water clay soils too much, the water may pool and cause boggy conditions for plant roots, which may ultimately rot. Watch how quickly water moves through your soil and adjust how much you water to suit. To ensure deep penetration of water through the soil, you may need to water for a few minutes, then stop, and allow the soil to absorb it all before watering a bit more.



# ...HOW MUCH SHOULD I WATER?



Keeping an eye on the weather forecast will also help you decide how much to water. If the weather service predicts that several millimetres of rain are going to fall over the next few days, you may not need to water that week. A forecast of plus thirty temperatures and clear skies means you're going to be using the garden hose a lot. If the region you live in has high humidity levels, you won't have to water as often than if you live in a more arid climate.

The site of your garden will make a huge difference, as well. If your garden is in full sun and exposed to the wind, it will dry out faster than if it is in a spot shaded by trees or the house. Plants grown in containers and raised beds will dry out more quickly than those grown in the ground. Remember, as well, that plants will need more water in the hot months of July and August than they will during the cooler, wetter months of May and June.

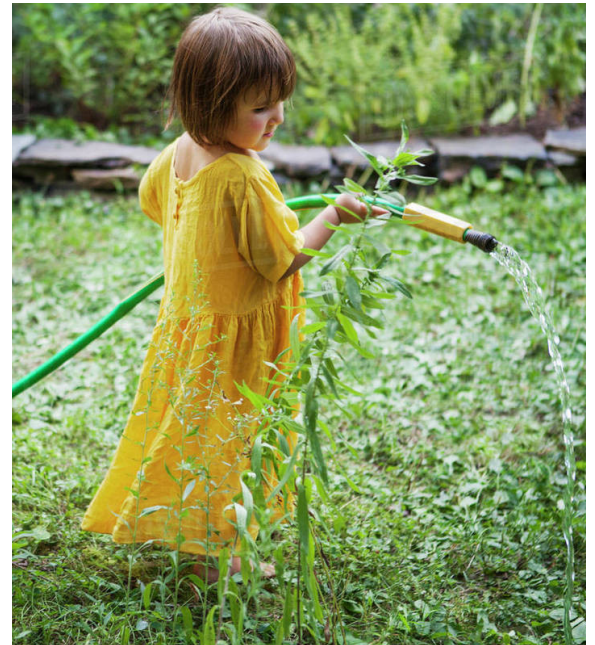
If you garden in containers, the types of materials the containers are made of may cause the potting media inside them to dry out more quickly. Clay pots, for example, are porous and will draw moisture away from the potting media. Switching to plastic pots or those made from a less porous material may be a better option if you find your containers are constantly drying out.

Before you water, do a simple test to ensure that the job is necessary. If you are gardening in a raised bed or in-ground, sink the blade of a trowel into the soil, up the handle. When you pull it up, if there are crumbs of damp soil clinging to the surface, it's probably okay to wait another day to water. If your plants are in containers, test the moisture level by poking your index finger into the soil up to the second knuckle. If you feel that the soil is moist, you don't have to water just yet. (Alternatively, if you are able to lift the container, you'll know it's time to water when the pot feels light). The soil may be dry on the surface but it's wet a few centimetres down, where the root zone of the plant are. You won't know this unless you test it.

# WHAT ARE SOME USEFUL WATERING METHODS?



Watering by hand – with a watering can or using a garden hose – is the ideal way to give plants the proper amount of water according to their individual needs. Watering by hand is a slow process, so it also gives you a chance to look at every plant while you are watering and see if there is any evidence of pests or diseases, if the produce is ripe for picking, or simply to admire your handiwork. Another benefit of watering with a can or a hose and nozzle is that they are both relatively inexpensive to purchase and very easy to use.



If you are using a garden hose, be sure to put the nozzle on a gentle setting, not a heavy, blasting one, which can possibly damage plant foliage, knock off flowers, or dislodge newly-sown seeds. If the day is hot and the hose has been sitting out in the sun, run water through it for a few seconds before turning the nozzle on your plants, as the water sitting in the hose will be extremely hot and unfavourable to plants. (Likewise, if you leave water sitting in your watering can, keep it in the shade if possible).



Sprinklers are sometimes used in very large edible gardens but there is no way to direct water to the base of plants instead of the foliage. This method isn't highly recommended unless there is no other option.

Soaker hoses laid between rows or drip irrigation systems installed alongside plants are excellent options which ensure that the water stays at the base of plants, quickly reaching the root zone where it is needed. The slow, steady application of water over a few hours allows the soil to properly absorb the moisture. Drip irrigation can be pricey depending on the size of the system, and it is important to monitor it for clogging, but it is generally straightforward to set up and may be easily packed up for storage in the wintertime.

*Don't forget to consider passive water storage, such as keeping a rain barrel. You may as well collect and use some of the rain that falls. Not only does it save you money on your household water bill, but it is healthy for plants as well.*

# Ways to Increase Moisture Retention in Your Soil

If you find yourself always lugging around the garden hose, there are a few things you can do to help prevent your garden from constantly drying out. If it is possible, changing the site of your beds or containers to get them out of areas highly exposed to hot sun and strong winds may be necessary. (Remember that most vegetables and fruits perform best in full sun locations – although not necessarily extremely hot ones – so you’re not going to want to put them in an area that receives too much shade).



Use mulch to conserve moisture in the soil and to regulate soil temperature. In vegetable gardens, adding a five centimetre (two inch) layer of clean, weed-free straw, weed- and herbicide-free grass clippings, or sawdust around the plants may be helpful. Do not pile the mulch right up against the plant stems, to prevent rot and other issues.



Adding organic matter such as compost to the soil can improve soil texture and increase water retention.