

## Watering your Garden



Watering newly planted out courgette plants

Watering your vegetable garden seems simple enough: if it is dry, water it. But how much water is enough - and how much is too much? What time of day is best to water? When are the critical times to water to ensure a successful crop?

### How Much Water Does My Garden Need?

The rule of thumb is to make sure your garden gets at least 2.5 cm (1 inch) of water weekly. Use a rain gauge, a tin can, or other straight-sided container in the garden to keep track of rainfall and provide additional water as needed.

Some crops can get by on less than 2.5 cm of water per week, but this is a good general guideline. Aside from rainfall, many other factors come into play when determining how much water is needed. If it's cloudy, you can reduce watering, as there's less evaporation. When it's hot and dry, you'll need to water more.

Soil type also affects watering needs. Clay retains water well, while sandy soil retains it poorly. A good loam is well-balanced to hold moisture while providing adequate drainage. With clay soils, water takes longer to seep in, so slow watering is required to avoid forming puddles. Clay soil may become waterlogged. With sandy soil, water drains though quickly, so more frequent watering is required.

Once you've got the minimum watering needs of your garden taken care of, consider the needs of individual vegetables. According to Cornell University researchers, in good garden loam, 2.5 cm of water will penetrate to a depth of 38 cm (15 inches). This is fine for brassicas, sweet corn, lettuce, potatoes, radishes and spinach, which need to be

watered to a depth of about 30 cm (12 inches). Some crops need more water, however, for optimal growth. Beans, beetroot, carrots, cucumbers, peas, peppers and courgettes do best when watered to a depth of 45-60 cm (18-24 inches). Pumpkins and squash should be watered to a depth of at least 60 cm (24 inches).

Your vegetable garden will have a lot of 'cultivated', loose soil which can easily be damaged or eroded by heavy watering - including heavy rain. Gentle watering with the correct nozzle or rose is important. If you have not had enough rain, and need to water your vegetables, then make sure that they are thoroughly watered. It is the roots that need the water - not the foliage.

To meet the watering needs of all the plants in your garden without wasting water, you may want to use a combination of watering devices.

### **Too Much Water**

While lack of water isn't good, neither is too much water. Over watering can promote disease and encourage slugs and snails. It can also compact soil and wash away minerals. Too-frequent watering promotes shallow roots, making plants less drought-resistant. Deep roots seek out water during dry spells and are more resilient. One sign that your plants are getting too much water is yellowing and droopy leaves.

### **Time of Day to Water**

The best time to water is early morning. This is especially good in warm weather as it protects the plants from drying mid-day sun and keeps them from wilting. If you can't water in the morning, the next-best choice is late afternoon, so that plant foliage can dry out before sunset. Wet foliage overnight encourages fungal disease, a risk especially in damp climates. Don't water in the middle of the day when the sun is the hottest. This not only wastes water due to rapid evaporation, but hot sun on wet plants can damage leaves and fruit.

### **How Often to Water**

Water deeply and less often, rather than watering a little more frequently. One suggestion is to water an established garden every six to ten days, watering 15-30 cm (6-12 inches) deep, in the absence of adequate rainfall. The best way to determine if water is needed: use a trowel and dig into the soil. If the soil is dry to a depth of 15-30 cm (6-12 inches), it's time to water. Water to the depth of the plants' roots, as outlined above. Drooping plants are an obvious sign it's time to water. If your plants are wilting, you've waited too long - a wilting plant is under stress. But drooping leaves may also be a sign of insect infestation or disease. If your plants are still drooping after a good soaking, lack of moisture may not be the problem.

### **Watering by Stages of Growth**

Plants need water for photosynthesis and respiration, as well for absorbing nutrients. For vegetables, watering is more critical at some stages of the plant's development than at others.

Seeds and seedlings need diligent watering. Newly-seeded beds should be moist but not soggy. Water with a fine mist to avoid washing away seeds.

Transplants should be watered thoroughly after planting, especially important during dry weather. Plants can experience shock due to root damage when transplanting: a good watering helps them adjust.

Many vegetables need special attention to watering during two periods: when they're flowering and when fruiting. A critical time for watering legumes and sweet corn is when plants are flowering (in the case of corn that means when the tassels and ears are forming). A critical time for watering tomatoes and squash is when their fruit is developing. When peas and beans are forming pods and when sweet corn ears are filling out, they need attention to watering as well. Leafy greens and roots require steady watering throughout their growth.

Peas, beans, tomatoes, sweet corn, cucumbers and marrows will need extra water in dry periods. Make sure that your watering is thorough. Don't simply moisten the foliage. A drench occasionally is far better than a regular sprinkle!

With root crops, be careful not to give them too much water, which promotes leaf growth but hinders root growth and can also cause roots to split.

Vegetables that produce edible fruit, pods and seeds also shouldn't get too much water before they flower. This results in lots of leaves and shoots, but fewer flowers and consequently, lower yields.

### **Conserving Moisture**

Conserving water is not only good for saving money, it's also good for the environment and saves time spent watering.

Reducing watering Requirement:

- Addition of plenty of organic matter into your soil will help retain moisture in the soil for longer periods.
- Mulching with organic materials will help to conserve moisture.
- Hoeing - but just the top inch or so - will give a fine loose mulch which will help to stop the soil water from evaporating.
- Plant leafy crops a little closer and generally cover the soil with foliage, rather than planting at wide spacings. Although you will have more plants, the 'cover' of the soil will reduce evaporation.
- Remove weeds - as they will compete with vegetable plants for the moisture supply
- If high winds are a problem, a windbreak can be a good idea: drying winds can cause moisture loss

Understanding the principles of effective watering can end the guesswork of when and how much to water, increasing yields and saving time and money in the process.

### **Other references:**

- [http://www.gardenorganic.org.uk/todo\\_now/watering\\_vegetables.php](http://www.gardenorganic.org.uk/todo_now/watering_vegetables.php)
- [http://www.gardenseeker.com/vegetables/vegetable\\_plot/watering\\_vegetables.htm](http://www.gardenseeker.com/vegetables/vegetable_plot/watering_vegetables.htm)