



## Watering Techniques for Home Vegetable Gardens

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Rain seems to come when we need it least – like when we wash our car – and not when we need it the most, like for the garden. Water is needed for plant growth, mainly for dissolving nutrients into the soil, carrying nutrients through the plant, and for keeping plants cool. But most importantly, water is essential since many vegetables are composed of high amounts of water – tomatoes for example. When there is not enough water available, the fruits do not develop normally.

**When to Water.** There are two simple ways to decide when the garden should be watered: by feeling the soil, and by looking at the plants. When the soil sticks in your hand and you can form it into a ball, it is moist enough. But, if it barely holds together in the palm of your hand, or if the surface looks hard, baked, or cracked, it is probably dry and it's time to water. Another sign is that the plants may wilt and look especially droopy. Since they wilt on very hot days, wait until the sun sets to see of the plant recover.

**Critical Periods for Vegetables.** While most vegetables require adequate moisture from the time they are seeded or transplanted into the garden, there are critical times when they definitely require water. The crops and those critical periods are given below:

<b>Vegetable</b>	<b>Critical period for water needs</b>
Bean, lima	Pollination and pod development
Bean, snap	Pod enlargement
Broccoli	Head development
Cabbage	Head development
Carrot	Root enlargement
Cauliflower	Head development
Corn, sweet	Silking, tasseling, and ear development
Cucumber	Flowering and fruit development
Eggplant	Uniform supply from flowering through harvest
Melon	Fruit set and early development
Onion, dry	Bulb enlargement
Pea	Flowering and seed enlargement
Pepper	Uniform supply from flowering through harvest

Potato	Tuber set and tuber enlargement
Radish	Root enlargement
Squash, summer	Bud development and flowering
Tomato	Uniform supply from flowering through harvest
Turnip	Root enlargement

**How Much Water.** The amount of water the garden needs depends on the type of soil you have and the types of plants you are growing. A clay-like soil will hold more water than a sandy one and will not need water as often. Vegetables and flowers growing in containers may need to be watered every day since the pots dry out fast. A general rule of thumb is to water one inch per week when it hasn't rained. This one inch of water, which amounts to about 65 gallons of water per 100 square feet, soaks down to eight inches. Measuring the amount of water applied can be a concern for new gardeners. To measure overhead sprinkling, place 4 or 5 small containers (straight-sided) around the garden while the water is being applied. When 1 inch collects in the containers, that indicates that 1 inch of water was applied to the garden.

**How to Water.** Watering with a sprinkling can or hose is generally not recommended; this usually results in shallow watering and poor plant growth due to shallow rooting. A hose or sprinkler is probably the most common watering method used in Midwestern gardens. The disadvantage of using a sprinkler is that foliage is wetted by water dispersed via overhead application. This could lead to foliar diseases since the foliage remains wet for extended periods of time. An alternative is to lay the hoses directly on the ground near the plant so the water goes where it is needed. A board or rock placed under the water flow will prevent the water from eroding the soil. A good way to direct the water to the plants is to dig a little trench around the plants and allow water to flow into it. Drip or trickle irrigation is also successful in the home garden. This is done mainly with hoses or plastic tubes with small holes in them that deliver a relatively small amount of water directly to the root zone; by supplying optimum moisture, periods of water stress can be avoided. The hoses or tubes are placed down the rows and water slowly trickles out. Regardless of method chosen, be sure to apply sufficient moisture.

**Time of Day.** If you are sprinkling the garden, it is best to water early in the day so the foliage dries off by evening. When the plants are watered at night, the foliage stays wet for a long period of time and disease problems build up.

**Gardening in Drought.** There are summers when the rainfall is short and the heat abundant, making it difficult to have a successful garden. Here are some tips to help with that situation.

- Use mulches to help the ground hold water better. A mulch is anything that covers the ground around the plants. Besides helping to save moisture,

mulches also prevent weeds from growing. Organic mulches – such as grass clippings, straw, compost, and partially decayed leaves – break down over time and improve the soil. You can also use several layers of newspaper sheets or dark colored plastic. Be sure to weigh them down with soil or boulders to prevent them from blowing away.

- Grow cool-weather crops. Moisture usually is more available as the autumn rains begin (at least it's a hopeful thought). Cooler temperatures also cut down on the amount of drying by the sun. Crops such as beets, broccoli, cabbage, cauliflower, collards, kale, lettuce, mustard greens, spinach, and turnips grow well during the cool weather of fall.
- Harvest young vegetables. When picked young, vegetables don't use up as much water in the long run. They usually taste better too. Some crops, such as leaf lettuce, even produce more if you harvest them often.
- Pull weeds. Vegetable plants must compete with weeds for every drop of water so you should pull the weeds out as soon as they show up. If you use a hoe, do not dig too deeply.