



Irrigation for the Garden



Article

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Give your plants the right amount of water at the right times so they can develop vigorous root systems.

QUICK START GUIDE (DETAILED INSTRUCTIONS BELOW)

1. **Know your soil type** to understand its ability to hold moisture.
2. **Observe your climate** to know when irrigation will be most necessary.
3. **Learn about the needs of individual crops** by studying the information on your seed packet and in our crop by crop Grow Guides.
4. **Choose the method** of watering that works best for you.
5. **Mulch deeply** to conserve water and control weeds.

WHY WATER?

The primary objective of irrigation is to provide your plants with the right amount of water at the right times so that they can develop vigorous root systems for extracting water and nutrients from the soil. While too little water can seriously limit plant growth, or even kill the plant, too much water is wasteful, and can also impair growth. Successful watering

requires careful observation, knowledge of your soil type, and of the specific needs of your plants throughout their life cycle.

KNOW YOUR CLIMATE

Plants growing under hot, dry conditions lose more moisture into the air than those in cooler, more humid regions. A good rule of thumb is that in temperate, humid regions most vegetables need about 1 inch of water per week over the course of a growing season (either from natural rainfall or supplemental irrigation). In arid regions they need about 2 inches per week. Heavy mulching can dramatically reduce the need for supplemental watering in many situations, with the added benefit of weed suppression.

KNOW YOUR CROP

Cool season annual vegetables such as brassicas (broccoli, cabbage, etc.) and leafy greens typically root at shallow depths and need to be irrigated frequently for shorter periods of time just long enough to moisten the root zone. Most warm-season annuals such as tomatoes and vine crops (squash, cucumber, melon, etc.), as well as perennials, have deeper, more extensive root systems. Irrigate deeper-rooted crops more heavily, but less frequently to encourage their roots to grow deeper.

Many crops, especially in humid climates, prefer to be watered at the base of the plant to discourage bacterial and fungal leaf diseases. These include beans, cucumbers, eggplant, gourds, squash, melons, peppers, tomatoes, okra, onions, and potatoes. Most flowers, herbs, and vegetables (including carrots, beets, chard, radishes, turnips, leeks, rutabaga, and parsnips) can be overhead or bottom watered regardless of climatic conditions.

CHOOSE YOUR METHOD

There are several methods of irrigating, each with particular advantages and disadvantages.

1. **Watering Can:**

The well-designed watering can is a great way to water a small garden and encourages an intimate relationship with your plants. By putting the water only where needed, you discourage weed growth in the paths and conserve a precious resource. Using two matching, well-designed watering cans, one in each hand, is more ergonomic and efficient than using a single can.

2. **Garden Hose:**

A quality garden hose fitted with an adjustable nozzle is a good method when the garden is too big to be handled with watering cans but you still want the intimacy and control of hand watering. Keep the nozzle on a gentle shower setting to prevent

washing away the soil. Care must be taken to prevent the hose from trampling over the plants as you move through the garden. Place pieces of pipe or stakes at the ends of the rows to guide your hose around corners.

3. **Overhead Sprinklers:**

Garden sprinklers are less precise and efficient, but are easy to set up and can be effective for small- to medium-sized gardens. For greater precision, micro-misters connected to plastic irrigation lines can be automated with a timer and are effective for cooling off leaf surfaces of lettuce and other greens, peas and brassicas in hot, dry climates. Avoid watering in the heat of the day to conserve water.

4. **Drip Irrigation:**

A drip system requires extra time in the initial setup, but it is the most water-conserving technique, especially when combined with deep mulching. It directs water only where needed and keeps unwanted weed growth to a minimum. In extremely arid climates, drip irrigation and deep mulching may be the only economically and environmentally feasible watering technique. Drip systems can be fully automated with programmable timers, keeping your garden moist even when you are away.

5. **Flood Irrigation:**

This ancient method of watering is extremely effective for deep watering and requires little hardware, especially if you're lucky enough to have gravity flow from a tank or a ditch. Flood irrigation requires a lot of water though, as well as labor to form the furrows and ridges. Flooding can also promote the spread of noxious weeds such as wild bindweed.

Finally, be sure not to wait until your plants are wilting before you irrigate. While they can recover, it slows their overall growth and makes them more susceptible to insect and disease problems. All plants will need consistent moisture in the early stages of establishment, either through frequent watering or deep mulching. When in doubt, stick your finger into the soil or pick up a handful and squeeze it to check for adequate moisture. If it is drier than a wrung-out sponge it is time to water.

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