

## Effective Irrigation

By Susan Camp

“Does every plant require one inch of water each week?” asked a visitor to the Gloucester Master Gardeners’ booth at the Daffodil Festival. That is a good question, because care instructions for most plants use the “one inch per week” rule of thumb. Many factors affect the amount of water any species will need. Ice plant (*Lampranthus* spp.), a succulent groundcover that is native to South Africa, grows in full sun and tolerates drought conditions. Lily-of-the-valley (*Convallaria majalis*) prefers part shade and moist, organically rich soil. If both plants were given one inch of water per week, the ice plant likely would rot and the lily-of-the valley might dry up. Watering needs depend on several factors, including climate, sunlight, humidity, and proximity to other plants that require more or less water.

The Clemson University Extension publication HGIC 1801 “Landscape Irrigation Management Part 2: Determining When to Irrigate” offers two techniques to help you determine when plants need watering. Push a standard screwdriver four to six inches into the ground and check the loosened soil for moisture. Use this method for flower and vegetable beds. For lawns, you can use the “footprint” technique. Walk on the grass, then look for your footprints. If you can see them, the grass is dry and needs to be watered.

A healthy plant is composed of 75 to 90% water, which it needs for photosynthesis, the process by which it creates its own food from the sun’s energy. Water is important in the process of transpiration, where the plant loses water from minute openings in its leaves. Water also is necessary to maintain a plant’s rigidity and to aid in transport of nutrients, and it acts as a solvent for minerals as they move through a plant’s structures.

The Virginia Cooperative Extension (VCE) Publication 426-322 “Irrigating the Home Garden” likens watering the garden to making a bank deposit. When you water the garden, you aren’t adding water to the plant, you are adding it to the soil. When a plant uses the water in the soil, it is making a withdrawal, and when the plant withdraws all the water, it doesn’t go broke, it dies. Soil cannot hold an unlimited amount of water. Depending on soil type, the top 12 inches of soil can hold only two to four inches of water. If you try to add more, you are wasting water, and will likely create a mud puddle.

If you spend every growing season watering clayey or sandy soil, your plants are likely not receiving the benefits of irrigation. Heavy clay content prevents moisture from absorbing into plant roots, and sandy soils allow water to drain quickly, preventing the water from reaching the roots. Both types of soil are improved by the addition of organic matter, which forms air pockets to retain water in clay and provides bulky particles in sandy soil.

Organic mulch not only prevents weeds, but helps the soil retain moisture and raises the humidity around plants. Black plastic may raise the soil temperature too much during hot, summer months and should be covered with organic mulch. Shade and windbreaks help protect plants from dehydration.

Many gardeners use hand-held watering cans for small beds and containers, but this method is tedious and time-consuming. Water applied by an overhead sprinkler can evaporate before reaching plant roots and wet leaves and flowers are breeding ground for fungal diseases. Use of automatic sprinkler systems can result in overwatering and waste. Better methods include drip or trickle irrigation systems that deliver water slowly to plant roots.

If you decide to try a new irrigation method or product, talk to friends and neighbors about their failures and successes; read online product reviews; inspect products before you buy for quality of construction and ease of use. I speak from experience. A self-watering grow box worked very well for cultivating herbs; self-watering window boxes, on the other hand, became clogged with roots and remained boggy throughout the summer.

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