

Landscape Irrigation Management Part 3: How Much Water?

Quite a bit of water use information is known about agronomic crops such as tomatoes, cotton, and peaches. Most of this information was determined from research that compared crop yields (and other factors) to the amount of water applied. However, there are many landscape plants that have little water use information available. We simply don't know if "plant A" requires 2 gallons or 10 gallons of water each week. Finding all of the figures that are available and trying to apply them to the landscape irrigation schedule may be overwhelming.

The "Rule of Thumb"

Fortunately there is a "rule of thumb" we can begin with in South Carolina. If we do not know the water requirements of a plant, we can start by applying **one inch of water per week**. Monitor the landscape at least weekly and increase or decrease the amount applied for each section as needed. *Please note that this is a starting point* – some plants may take more, others may require less.

The amount of water required by any plant will vary with type of plant, stage of plant growth, climate, and time of year. An irrigation system programmed to apply the correct amount of water to a landscape each week in April will fall far short of the landscape water need in July. The climate in July is hotter, less humid, and more stressful to the plant, which increases the plant water need. Likewise, an irrigation system programmed to apply the correct amount of water in July will greatly over-water the landscape in late September. As mentioned, the one inch per week figure mentioned is simply a starting point. Adjust your irrigation schedule throughout the year to match the varying water needs of the landscape.

Determining the Amount of Water Applied

How does one inch of water translate into time on an irrigation timer? Quite simply, it doesn't. Each section or "zone" of irrigation may be installed using different nozzles, closer or wider sprinkler spacing, and a host of other factors that change the application rate of that zone.

The simplest way to tell how much water is currently being applied is to randomly place 6 to 8 straight-sided cans in the area that a single zone covers. Irrigate that zone for the time currently set on the timer and then measure the depth of water in each can. The average depth found in the cans is the actual amount of water applied to that zone of the landscape. This method is a quick and easy way to determine the amount of water applied to a zone with no math required. If the average amount measured in the cans is not the amount you desire to apply, increase the time the zone operates and measure again. If the amount in the cans is too much, decrease the time the zone operates and measure again. This will help the homeowner find the proper "starting" point for the irrigation system.

Do not use a single can! You will invariably choose the driest or the wettest spot in the zone. Use several cans to get a good idea of the average water depth applied to the entire zone.

Timers - The Bane of Irrigation

The key word for an irrigation system is management! An unmanaged irrigation system can be more of a hindrance than a help. Walk through the landscape every week or two and note the condition of the plants. If the soil appears drier than it should be and the plants seem stressed, increase

the amount of water applied each week. If the plants seem to be suffering and the soil seems too wet, decrease the amount of water applied.

The automatic irrigation timer is installed to relieve the homeowner of the burden of turning valves on and off. It does not consider the landscape's changing needs and therefore cannot replace a homeowner's management ability. Once again, the key to irrigation and a healthy landscape is management, management, management.

How Much is One Inch of Water?

Most homeowners have no idea of how many gallons of water are required to properly irrigate the landscape. A simple comparison may help provide a frame of reference – and prevent a nasty shock from an unexpected water bill.

An average household in South Carolina will use 120 to 150 gallons of water per person per day. Using the 150 gallon per person per day figure, a four person household may use (150 gallons of water per person x 4 persons x 7 days =) 4,200 gallons of water each week.

When a homeowner applies one inch of water each week to a one acre landscape, the homeowner uses 27,154 gallons of water. This is approximately six times the normal water use for a household of four persons.

The moral to this story is simple – if the landscape is irrigated properly, the homeowner should expect a higher water bill!

Summary

One inch of water per week is a good starting point for most South Carolina landscapes. Some vegetable crops, such as sweet corn and yellow squash, may require more than 2 inches of water per week during certain growing stages. Other plants, such as hardy natives and cacti, may require no additional water. Adjust your irrigation system to your landscape's particular design and water needs.

Adapted from the 2007 South Carolina Master Gardener Training Manual.

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