

## CHAPTER THREE: WATERING EFFICIENTLY & IRRIGATION PRACTICES

Watering Tips  
Calibrating Irrigation Systems

Even though watering restrictions are not yet commonplace throughout Alabama, homeowners should still take measures not to overwater. Overwatering does more than deplete the water supply; it also makes plants prone to pests and adds to stormwater runoff, which pollutes our water systems. By choosing and operating a watering system correctly, you can reduce water bills, insect and disease problems, and maintenance requirements. To maintain a healthy lawn can require as much as 2" of water per week during peak growing season. The more you water your lawn, the faster it grows and the more it needs to be mowed. Established trees and shrubs may require less than half as much water as an established turf.

When severe drought leads to water restrictions, water authorities will typically restrict irrigation to certain days and times. But realize that even if it is your assigned day to irrigate, that does not mean you must irrigate. Pre-scheduled watering can waste time, money, and resources. Don't let the calendar tell you when to water. Look not only at your plants for early signs of **wilting**, but also evaluate soil moisture on a daily basis.

### GLOSSARY BOX:

**Wilting:** the drooping of plant parts, especially leaves (leaf blades folded in half, blue gray color, and footprints remain on the lawn), sometimes because of a lack of water. However, plant wilting can also be a sign of overwatering.

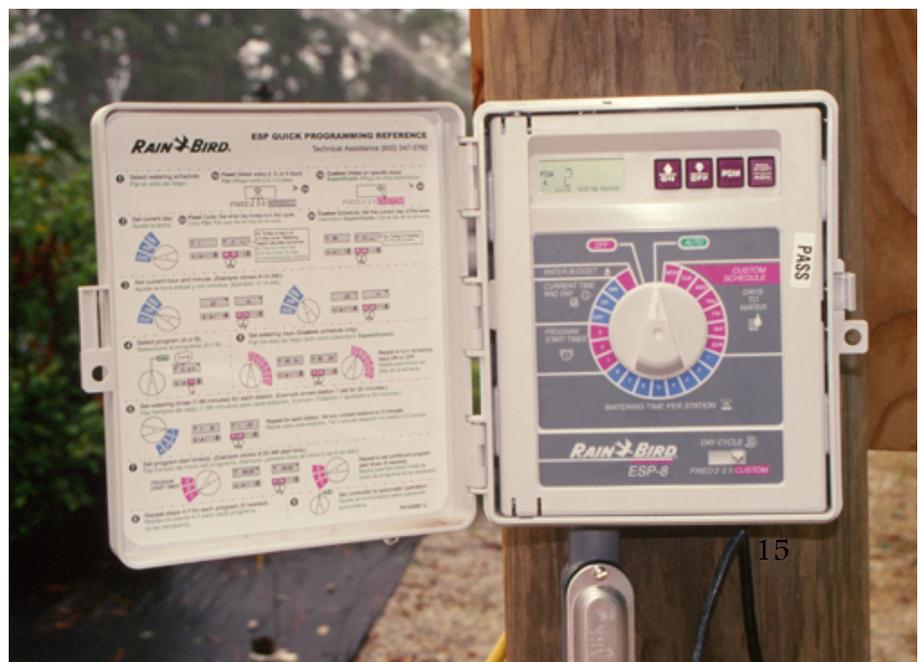
## WATERING TIPS

### ☞ Reduce the need for watering

by choosing water efficient and drought tolerant plants, including those native to your site, and plant them in the right place. If you group plants according to their water (and light) needs (called a hydrozone), you can simplify watering methods and systems. For example, turf areas and shrub areas should always be separated into different hydrozones.

### ☞ Install a rain shutoff device or soil moisture sensor

(if you have an automatic sprinkler system) that will override the system when it rains or when the soil reaches a preset moisture level. Your county's Extension office, the Natural Resources Conservation Service (<http://www.nrcs.usda.gov/>) or a certified irrigation professional can provide technical assistance.



**☞ Water in the early morning (4 to 7 a.m.)**

This is the most efficient time because temperature and wind speeds are at their lowest, which reduces evaporation and, more importantly, drift. Also, grasses are less susceptible to fungal problems if water is applied at the time that dew normally forms.

**☞ Avoid watering between 10 a.m. and 4 p.m.**

Temperature and wind speeds are at their highest during this time so water waste is more likely.

**☞ Follow a simple watering schedule for grass:**

apply ½" to ¾" of water when grass shows signs of distress (bluish gray color/folded leaf blades). Do not water again until symptoms reappear.

**☞ If rain is predicted within the next 24 hours, delay watering**

**☞ Experiment with gradual reductions in your watering times and frequencies**

to see if plants can tolerate less water.

**☞ Little or no supplemental water is required in cooler months**

(November to March).

**☞ Sprinkler system should operate properly and apply uniform coverage**

Sprinkler calibration is one of the most effective ways to conserve water in an irrigation system.

**☞ Check your system periodically**

for broken heads or leaks.

**☞ Use a rain gauge**

to measure rainfall depth.

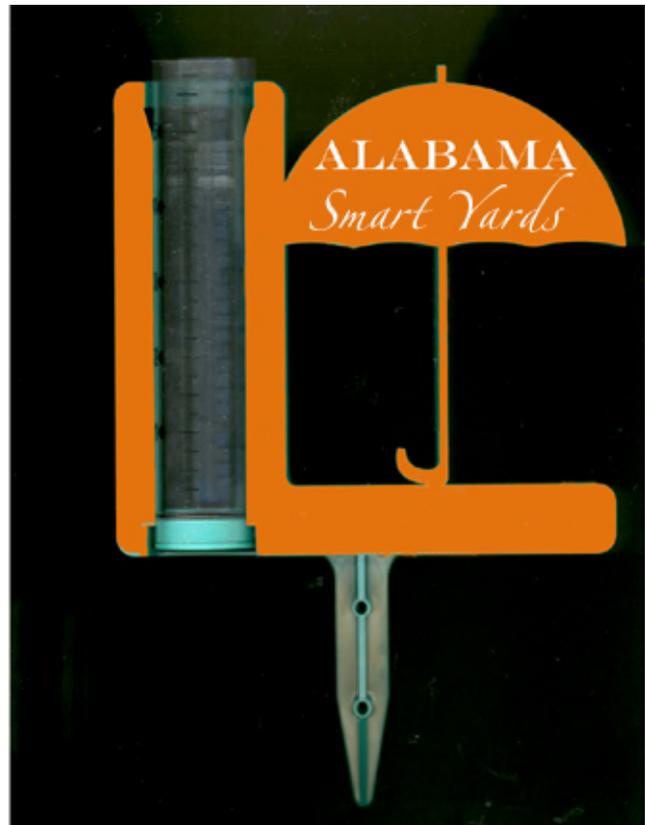
### Overhead Irrigation or Drip?

You are probably familiar with automated pop-up sprinklers that are part of a residential irrigation system. For lawns, those kinds of sprinklers are usually the best watering method. However, for other landscape plantings, consider drip irrigation as a water conserving alternative.

Drip irrigation systems can be designed to deliver water directly to the root zone through low-flow-rate emitters. Other micro-irrigation devices such as bubblers, micro-sprays, and misters can be used effectively if properly designed and operated. As with any system it is important to avoid runoff, overwatering, and the irrigation of paved or non-landscaped areas. Proper installation and design will insure that each plant receives sufficient water.

#### **GLOSSARY BOX:**

**Precipitation rate:** The rate, in inches per hour, that an irrigation system applies water. The precipitation rate should not exceed the infiltration rate (capacity) of the soil. Precipitation rate is a critical design component used by an irrigation professional, along with plant water requirement, to set irrigation system run times and cycles.





## Soil Moisture

If the soil in your yard appears dry that does not mean the root zone is dry. A soil coring tool, like the one shown, pulls up a soil sample that allows you to see and feel the moisture in a plant's root zone. A soil core also reveals whether you are watering so much that water is wasted below the root zone. Using a soil corer can help you judge when to water. Look for coring tools at most irrigation and some garden supply stores. Nutrient **leaching** can occur under certain conditions. If the system runs for excessively long time periods, the soil will become saturated. Once the soil is saturated, sandy soils found in coastal areas are more prone to leaching. However, clay soils found in other areas of the state are more prone to runoff when the **precipitation rate** exceeds the soil intake (infiltration) rate.

### GLOSSARY BOX:

**Leaching:** the downward movement of water (and any particles dissolved in it, such as nutrients or pollutants) through soil.

## Water Wise Advise

Get practical advice on state-of-the-art irrigation systems from several sources. The Irrigation Association (<http://www.iaainfo.com/>) provides information on irrigation system selection, maintenance and appropriate watering practices, as well as links to professional organizations, manufacturers, designers, installers, and educational materials. Also visit the U.S. Environmental Protection Agency site (<http://www.epa.gov/watersense/>).

## ☞ CALIBRATING IRRIGATION SYSTEMS ☜

### Follow These Steps to Estimate How Much Water Your Irrigation System Is Applying:

1. With wind conditions calm (you cannot feel a perceptible breeze on your face) turn on sprinklers for 15 minutes, recording the time of this operational test.
2. Set several similar, flat bottomed, straight sided containers (all must be of equal size) equally spaced within one watering zone. Tuna cans work well for this.
3. Add the collected water from all containers into one container (must be the same size). Measure the depth of the water in the container to the nearest 1/8".
4. Divide the measurement, in inches, by the number of collection containers. This determines the average depth of water applied in that zone in 15 minutes. Multiply this depth by 4 to get an approximate precipitation rate in inches per hour.

In the future, do not run the system any longer than needed and apply no more than 1/2" of water per application. Adjust run time as necessary based on soil type to avoid runoff or leaching.