## THE ROOT OF THE PROBLEM IS ON THE ROOTS

### ROOT ROTS:

Over watering is the most common lawn problem in landscapes with automatic watering systems, while under watering is a very common lawn problem where no automatic irrigation system exists. Pest control services deal mostly with landscapes watered by automatic irrigation systems.

For most plants, ideal conditions exist for healthy root growth and function, when soil pore space is occupied by about equal volumes of water and air. When soil pore volume taken by water increases, the volume of air in the soil decreases. Most homeowners being most concerned about plant and lawn water needs, tend to over water their landscapes, being unaware of the consequences of reduced aeration. To increase the awareness of the roots' need for air, it helps to remind homeowners of something that they already know; human life will tolerate days without water, but will soon die if deprived of air and this applies as well to plant roots.

Roots suffocated by lack of air are invaded by water molds, with a rot that starts at the root tips and progresses upwards from there. Treatment with fungicide drenches will inhibit the proliferation of root rot fungi. But to provide an opportunity for survival of new roots, soil aeration also needs to be increased.

### WHEN SHOULD LAWNS BE WATERED?

The common sense answer is that lawns should be watered on an as needed basis. And this need can be assessed by appearance of grass blades. A lawn does not need watering when mature leaf blades look flat, are or normal color and tend to spring back after being walked upon. On the other hand, lawns that need watering show initial signs of moisture stress, such as grass blades that fold along the middle vein in a V pattern. If water is not applied, continued dryness causes the normal green color to turn dull, the grass blades start to curl and traffic leaves prints that do not spring back. Continued dryness will damage the turf.

If watering is done on an as needed basis, that is, when first signs of moisture stress are visible, the upper crust of soil will then be dry, while soil will still be moist at deeper layers. The drying of the upper crust of soil will inhibit the growth of shallow lawn grass roots, as well as the growth of weeds. An additional benefit is less disease on grass blades, because fungi causing leaf spots require constant humidity to thrive.

## PROGRAMING IRRIGATION SYSTEMS

### SETTING FREQUENCY OF WATERING:

The various zones of an automatic irrigation system differ in the number and type of sprinkler heads, pipe sizes and water pressure, so different irrigation intervals are usually required for each zone. Also the watering needs of each zone may vary because of differences in amount of shade and natural drainage.

To set the watering interval for a given zone, proceed as follows: following an irrigation, disconnect the system and count how many days it takes for the lawn in that zone to show initial signs of moisture stress. That sets the watering interval for that zone during that season of the years. As climate changes with different seasons, the watering intervals need to be readjusted as described above.

**SETTING LENGTH OF WATERING:**
Length of watering determines how much water is applied to the lawn with each irrigation. The amount of water that lawns require is much less from late fall to early spring because of less evaporation losses in cool weather during the shorter days and longer nights, as well as the slowed growth of the grass.

In southwest Florida, the amount of water per irrigation required to water lawns may vary from about ½ inch during most of the cool season to about ¾ inch of water during dry, hot weather. To calculate the length of time needed to irrigate a given zone, proceed as follows:

1. Place several open cans scattered over a given zone to collect irrigation water during a period of time. (For example: Use 4 cans to collect water during 15 minutes).
2. Place all the water collected into a single can and measure water depth in inches. (For example: Combined water measures a depth of 1 inch).
3. Divide the figure obtained by the total number of cans used. The result is the average inches of water applied during 15 minutes. (For example: ¼ inch applied in 15 minutes).
4. Figure now how long it would take to apply the ½ inch of water desired. (In our example that will be 2 times 15 minutes equals 30 minutes).

**MOWING HEIGHT:**
The harm from over watering is often compounded by mowing the lawn grass too low. Mowing grass low reduces considerably the leaf blade volume. Grass leaf blades are where plant food is produced by photosynthesis with energy from sunlight. Reduction of food production due to low mowing results in a weaker, shallower root system.

Shallow root systems have a lesser volume of soil to draw water and nutrients from and tend to produce weaker, open, weedy lawns that are quite susceptible to drought damage.

A lawn of either Bahia grass or most St. Augustine grasses, mowed at a height of 4 inches would have a much stronger and deeper root system, than one mowed at a height of 3 inches.