

TURF FUNDAMENTALS

UNDERSTANDING WEEDS & CRABGRASS



While every lawn owner has the same desire . . . namely a weed-free, perfectly green lawn . . . the truth is that many lawn programs actually create soil profiles which favor weeds and crabgrasses rather than turf. They typically indicate soils that are compacted and nutritionally out of balance . . . especially as it relates to calcium and soil pH.

Every plant has a preferred soil profile in which it will thrive while competitive plants will not. Each soil profile includes:

- ✓ the combination of all the various
- ✓ nutrients (and their inter-relationships)
- ✓ soil pH
- ✓ porosity
- ✓ compaction
- ✓ amount of air and water
- ✓ critical soil biological communities
- ✓ soil characteristics
- ✓ and so much more

There are literally trillions of possible combinations of all these factors and one plant that is perfectly suited for the existing combinations at any moment in time. The secret is to understand the current profile; discover what profile is required for the plant(s) you want to grow; and take whatever steps are needed to modify the soil profile from where it is to where it needs to be for your desired turf or plant(s). By doing so, the turf or plants will thrive including being more naturally resistant to insect and disease issues.



NATURAL AERATION VS. MECHANICAL AERATION

The importance of having porous soil cannot be over emphasized. Nearly all plants desire well-draining soils that can easily exchange air (both for the roots and biology) and allow the soil nutrient solution to freely move throughout the root zone.

While the supposed benefits of mechanical aeration are widely promoted, the fact is, mechanical aeration is used to counter-balance the negative consequences of nearly all lawn programs which rely on chemical applications.

MECHANICAL

- ✓ Affects 5-10% of total surface area.
- ✓ Extends 2-3" (if soil conditions right).
- ✓ Creates holes to provide porosity.
- ✓ Brings biology to surface to decompose thatch.
- ✓ Damages irrigation heads and underground wires.
- ✓ Soil brought to surface contains weed seeds.
- ✓ Looks and makes a mess.

NATURAL

- ✓ Treats 100% of surface area.
- ✓ Works deeper into soil whenever it rains.
- ✓ Holes close back up within 2-4 weeks.
- ✓ Underground biology can't survive above ground.
- ✓ Liquid applied on surface does no damage.
- ✓ Weed seeds remain dormant in the soil.
- ✓ No muss, no fuss . . . just outstanding results!

The only time mechanical, core-aeration might be advised would be to introduce a soil amendment into the soil profile by dragging something like sand or peat into the holes.



WATER YOUR LAWN

WATER... from Nature is seldom reliable enough all season long to keep lawns green. After all, the Grass Plant is 85% water! And without a constant resupply of water, your grass will become off-color, may wither, or even die. The ideal rate is 1" of water once a week.

AIR... in the form of wind and its moisture content (humidity), has a lot to do with how much water you must supply on a weekly basis. The more wind you experience, and the lower the humidity, the more water is evaporated from the grass blades. You may have to add extra watering(s) a week (see the chart below) in order to supply enough water.

TEMPERATURE... plays the most significant part in how much water is needed for your lawn to stay healthy and beautiful. The hotter the temperatures, the more water is needed. The grass plant **MUST** have a constant supply, as it needs the water circulating through its vascular system in order to keep its delicate tissues cool enough to live.

EFFORT... is required. Most of the rain showers we get during the summer, when water is most need, can't be counted on because they are too brief to do much good. And, if your lawn has a layer of Thatch, the moisture from showers will never reach the roots. Refer to the chart below to know how much water is required. But... you need to measure how much your sprinkler, or sprinkler system puts out in order to know how much time the sprinklers must run in order to get the required amount of water. Using a large coffee can, time how long it takes to accumulate 1" of water. Then you'll know.

RESULTS... are what YOU are after. The correct materials properly applied are extremely important, but having the correct amount of water applied at the right time is absolutely critical to keeping the lawn healthy.

WATER NEEDS & TIMING

Consistent Temperature	Ideally apply 1" of water
78-85°F	1x weekly
85-90°F	2x's weekly
95°F+	3x's weekly





HOW TO MEASURE YOUR IRRIGATION SYSTEM

Since plants can be as much as 85% water, having an irrigation system can be very helpful in promoting and maintaining healthy plants . . . especially turf. Unfortunately, most irrigation manufacturers and installers do not know how to properly water plants resulting in systems which create more problems for the turf and plant health care professional including:

- ✓ Shallow / Reverse Rooting
- ✓ Soil Compaction
- ✓ Wet / Dry Spots
- ✓ Thatch Build-up
- ✓ Thinning Turf
- ✓ Reduction of critical soil biology activity
- ✓ Increasing various disease and insect damage

These are all serious issues resulting in significantly higher costs to maintain turf and plants.

The Water Your Lawn Flyer provides guidance on “how much” and “when to water,” but the entire process must begin by knowing how much water is actually being sprayed out over a specific amount of time. Every system is different. In fact there can be significant flow differences from one zone to another. There are many reasons why this occurs starting with the fact that the water pressure varies from site to site, even if operating on public water. Within each system other variable include: pipe size and valve sizes; lengths of runs; numbers of heads on the zone; and the actual size of each spray head.

An irrigation consultant can conduct an “Irrigation Audit,” which can be costly, but you can DIY with a few straight-sided, large cans. Turn on the first zone to determine what area is being covered. Randomly place the cans within this area with one or two placed closer to the head, another one or two in the middle area and another one or two towards the outer perimeter. However, take care NOT to place any cans so close to an edge that it would catch the over-lapping spray pattern from the adjacent zone. Now re-start that zone and allow to run for exactly 15 minutes. Shut off the zone and measure the water in each can. Hopefully the amounts will be very similar. If the cans have approximately $\frac{1}{4}$ ” of water then you know that zone must run for 1 hour to get 1” of water applied. If only $\frac{1}{8}$ ” then that zone needs to run for 2 hours . . . and so on. Repeat this process for every zone.

Depending on the final timing required to achieve the desired 1” of water and trying to avoid have the lawn/soil wet all night, you may have to water every night but only 2-3 zones per night perhaps starting at 3 am and finishing by 6 am. As an example: Sunday zones 1-3; Monday zones 4-6 and so on.