

**Water-wise turf irrigation practices****June 8, 2017**

After heavy and frequent rains this spring, hot and dry weather has returned to much of the state. While there has been some recent rain in central and western Nebraska, the southern and eastern parts of the state have been running significant evapotranspiration to precipitation deficits. This means professional turf managers and homeowners are relying on their irrigation systems to fill the gap. The following are just some recommendations to maximize plant health and reduce over-irrigation this summer.

- 1) Make sure your irrigation system, sprinklers and hoses are ready for the job. Nozzles wear, irrigation heads heave and shift, valves leak, wires corrode, hoses leak, etc. Give your system a thorough inspection or have a certified irrigation contractor tune-up your system.
- 2) Know how much water your system applies. This can be in inches per hour or even the change in soil moisture per hour for professional managers using soil moisture meters.
- 3) It is much better to stay on the dry side than to over-water. Excess moisture in the root zone reduces soil oxygenation, increases soil heat retention, and increases disease risk.

**Homeowner specific tips:**

- 1) Avoid watering until wilt symptoms are visible. The grass will have a blue-green color and footprints will linger. Then apply roughly one inch of irrigation to rewet the soil. The grass is not going to immediately die at visible wilt.
- 2) Consider turning your irrigation controller off. Manually run the program when drought symptoms are visible. An alternate approach is to clear the start times on the individual irrigation programs. Be sure you have a rainout switch installed to prevent watering during a rainstorm.
- 3) Irrigate in the morning because the wind and air temperature are usually the lowest compared to other times of the day. Irrigation to “cool” the turf in the afternoon should be avoided. It has very little long term cooling effect and increases disease risk, especially for brown patch.
- 4) Dogs can complicate irrigation requirements. Dog spots occur when salts accumulate in the surface of the soil. If you have issues with dog spots, more frequent irrigation events may be required. The goal should still be to irrigate deeply, however, to move the salts deeper into the soil.

**Professional manager tips:**

- 1) Resist the temptation to syringe if the turf exhibits no signs of wilt. The cooling effects are extremely short-lived (minutes), soil temperature can increase (root killer), and it creates the ideal condition for root diseases like *Pythium* root rot. In fact, Cole Thompson and Ben Van Ryzin intentionally irrigate their *Pythium* research greens with five minutes of irrigation three times a day. That creates the perfect environment for root pathogen development. You can read more about root disease control in the other *Turf iNfo* for today.
- 2) Know your wilt points. Many turfgrass managers use soil moisture probes to scout for hot spots. It is important to remember that every course and soil will have different wilt points. Your irrigation goal should be to sustain a soil moisture level slightly above the wilt point but not too low that the grass wilts during the day.

- 3) Try to deficit irrigate. A successful strategy to maximize plant health is to deficit irrigate. This strategy is most effective when soils are wet. Intentionally under-apply irrigation to slowly reduce soil water content. Then irrigate deeply when soil moisture content approaches the wilt point. Better yet, practice daily 100% replacement once soil moisture content is just above the wilt point. This type of irrigation will not deter rooting because the soils are so close to the wilt point.
- 4) It is important to know system output and ET when using irrigation replacement at low soil moisture levels. The standard way to measure irrigation output is with catch cans. An alternative way is to measure soil moisture, irrigate for a period of time, wait an hour, and then measure soil moisture again. This will tell you how much time is required to increase soil moisture by some amount. Daily evapotranspiration can be obtained from the [HPRCC](#). The National Weather Service now has ET forecasts available [here](#). Select the Daily FRET in the dropdown box and then move the slider left or right to see the forecasted ET for upcoming days. It's a very helpful tool.
- 5) Use wetting agents and infrared cameras to fight localized dry spots in sand. We recently noticed the temperature distribution on our research green was not very uniform. We then measured the soil moisture, watered, and measured soil moisture again. The number hadn't changed. The sand-based green was becoming hydrophobic (water repelling). We decided to solid tine aerate and apply a surfactant (wetting agent) to get ahead of the developing condition. The FLIR infrared camera helped us see this issue before LDS was visible.

Here are links to past *Turf iNfo* article for more water saving information:

[\*How much should I water my lawn?\*](#)

[\*'Set It and Forget It' is the wrong way to use your home lawn irrigation system\*](#)

[\*Syringing: an essential practice or a waste of time?\*](#)

[\*Use and abuse of soil moisture meters\*](#)

[\*Surfactants increase irrigation efficiency\*](#)

[\*Hunting hot spots with FLIR\*](#)

[\*Summer lawn irrigation\*](#)

[\*Scouting Turf Hot Spots with FLIR\*](#)

[\*Syringing Greens\*](#)

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