

Provide sufficient water in the morning and then come to field day

July 18, 2015

It's going to be hot and windy this week. The weather forecasts suggest potential evapotranspiration (pET) values could range from 0.35 to 0.40" each day. When it's this hot, we can easily overdo it on the water because we want to keep that plant cool and well hydrated. The forecast on Wednesday calls for a high temperature of 100F, lows in the upper 70s, winds around 15, and a dew point of 71F. Assuming that the turfgrass receives full sun and the skies will be crystal clear all day, the pET would be 0.4 inches. When corrected for a cool-season turfgrass crop coefficient of 80%, we'd expect the turf to lose about 0.32" of soil water for the day. It's reasonable to expect a smaller amount will be lost when we factor in some clouds and the likely haze that accompanies the high humidity.

In most cases, our soils and roots are able to supply enough water to sustain our turfgrass for the entire day. Even a sand that holds 0.12" of plant available water per inch of soil depth can supply the turf with adequate water as long as the turf has 2.5 inches of root depth.

Another reason we over-water when it's hot out is to cool the turf. The most effective way to keep the plant cool is to ensure there is good airflow to disturb the boundary layer of humidity above the canopy and apply enough morning irrigation to get through the day. Syringing turf in the afternoon is a common practice to encourage cooling. Unfortunately, it is rarely an effective solution long-term because the cooling effect lasts only minutes. The plots in the video are irrigated to 80%, 60%, 40%, and 0% of potential evaporation (pET). The hottest plots aren't watered and the coolest plots are watered with 80% pET (Fig. 1). We then syringed the plots and saw brief cooling before the plots returned to the pre-syringe temperature. The syringing effect was gone in two minutes.

Syringing Video: <https://www.youtube.com/watch?v=7rASBJV06c0>

This Wednesday, deeply irrigate in the morning to ensure there is enough soil moisture to cool the plant during the day and then come to Lincoln for our field day. There is still time to [register](#). See you on Wednesday!

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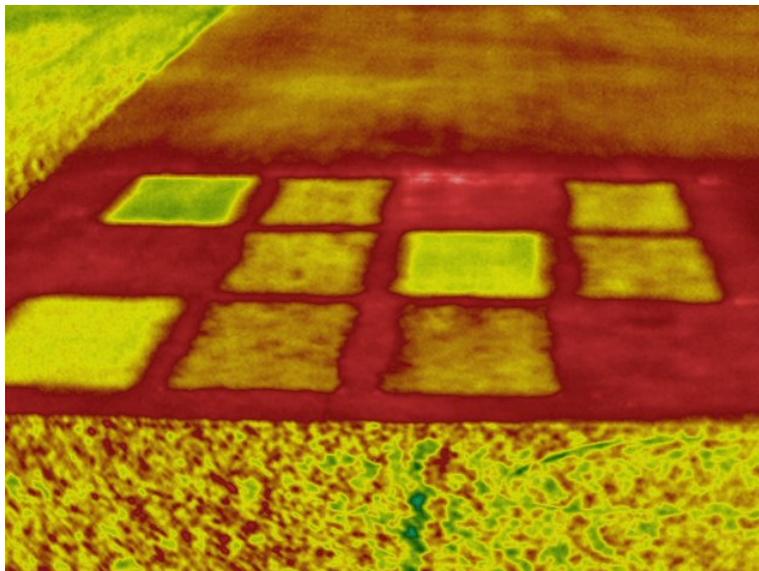


Figure 1. The temperatures of these turfgrass plots range from 88F to 100F. The only difference is the amount of soil water. The coolest plots (yellow) receive daily ET replacement while the hottest plots are not irrigated (red/white). Applying adequate moisture in the morning is essential to cool the plants all day.