The Quick and Dirty on Fall Fertilization
September 10, 2015

Fall is still the most important time to fertilize cool-season turfgrass. That statement is especially true after a pretty challenging summer in 2015. Fall fertilization helps promote recovery, builds roots, and increases sugar reserves going into winter. Here are the current recommendations for fertilizer applications:

- Newly seeded areas: Starter fertilizer with higher levels of P_2O_5 should be applied at or slightly after seeding. A second application of starter fertilizer should then be applied 4 weeks after emergence or mid-October (whichever occurs first). Newly seeded golf or sports turf can also benefit from frequent applications of soluble nitrogen (urea or ammonium sulfate) every 10 to 14 days to accelerate establishment.

- Newer turf areas (<10 years old) or thin turf: New stands of turf require more fertilizer than older turf areas. Additionally, turf areas that are thin or were damaged by a pest will also benefit from additional fall N to accelerate recovery prior to winter. For these sites apply a balanced (50% soluble and 50% slow-release) nitrogen fertilizer in late-August to early-September. Then make a follow-up application of a quick release fertilizer in mid-October. Again, aim to apply 0.5 to 1.0 lbs N per 1000 ft^2 or buy a fertilizer with your spreader setting on the bag.

- Established turf (10+ years old): One application of a balanced released nitrogen source in mid-September. Look for a fertilizer product with 30 to 50% of the total nitrogen as quick-release/soluble nitrogen. This will provide even release during the fall. Aim to apply 0.5 to 1.0 lbs N per 1000 ft^2. If unable to calibrate your spreader, then buy a fertilizer with spreader settings for your particular fertilizer spreader on the bag.

- Highly maintained turfgrass: Continue to spoon-feed these areas every 10- to 14-days with soluble nitrogen such as urea until growth ceases in late-October to early-November. This will sustain uniform growth, provide even color, and maximize carbohydrate storage.

What about potassium? The research is slightly inconclusive regarding potassium fertilization in fall. Active research by UNL alum Chas Schmid and Dr. Jim Murphy at Rutgers suggests that some potassium during the year is required to help annual bluegrass harden off and survive winter (greater than 50 ppm Mehlich-3 K or 2.0% tissue K). While other research from Dr. Frank Rossi at Cornell suggests that high rates of potassium fertilizer increases snow mold incidence in annual bluegrass. Long-term potassium research at UW-Madison by Dr. Doug Soldat indicates that frequent applications of potassium during the growing season increased pink snow mold incidence on creeping bentgrass compared to areas that haven't been fertilized with potassium for the past four years (Less than 30 ppm Mehlich-3 K or 1.5% tissue K). A conservative recommendation for turf in general would be to ensure that the soil has 30-50 ppm Mehlich-3 K or leaf tissue tests from 1.7-2.2% K by dry weight in season. Don't apply more K than N this fall.

Bill Kreuser, Assistant Professor, Extension Turfgrass Specialist, wkreuser2@unl.edu

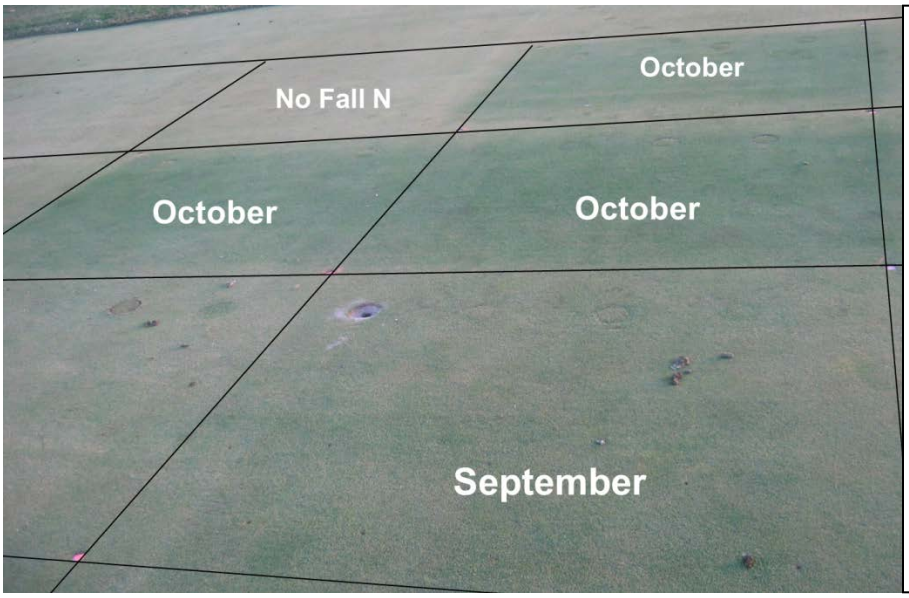

Figure 1. Benefits of 100% quick-release nitrogen too early in the fall quickly disappear. This fertilizer is better applied four weeks prior to winter dormancy. Early fall applications of N should be with a balanced release fertilizer. Photo courtesy of Dr. Doug Soldat and Dan Lloyd.

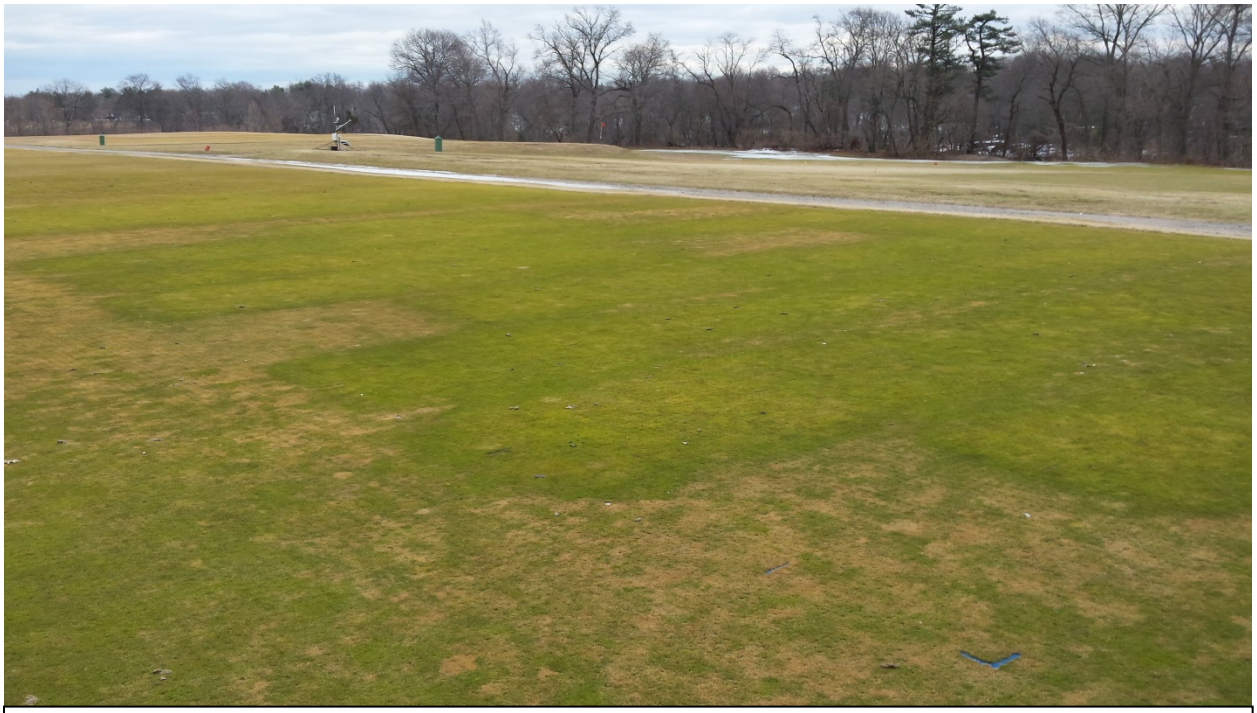

Figure 2. Lack of potassium fertilizer to these annual bluegrass plots at Rutgers University delayed winter dormancy in annual bluegrass. This lead to winterkill the following spring. Their recommendation is to have soil test K levels greater than 50 ppm and average leaf tissue P of greater than 2% for annual bluegrass. Photo courtesy of Dr. Jim Murphy and Chas Schmid.

Figure 3. Potassium fertilization to this creeping bentgrass green in Wisconsin resulted in more pink snow mold the following spring. The plot on the left had a soil test K value of 46 ppm and average leaf tissue potassium content of 2.2% the following season. The plot on the right had a soil test value of 21 ppm and tissue level of 1.4% K. Photo courtesy of Dr. Doug Soldat.