

IMPORTANCE OF FALL FEEDING

Fall fertilizing is the most important application a turf manager can make. Promoting good color and stimulating shoot growth are important but many times the importance of carbohydrate reserves and root growth is overlooked. It is important to build the carbohydrate reserves to prepare the turf for winter. The accumulation and storage of carbohydrates is greatest during the fall and early winter because there is minimal shoot growth in late fall, but good photosynthetic conditions. In addition, roots of most cool season grasses continue to grow in autumn as long as the soil is not frozen. The carbohydrates that are not used in growth are stored in the crown and other storage tissues in the plant. These carbohydrate reserves help the turfgrass green up earlier in the spring and sustain growth into May.



John Meyer - Regional Manager
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On-Course Observations From Spring 2009

By Dr. Brian Horgan, University of Minnesota

Plants use water, air and light making sugars required for plant growth and development. Remember photosynthesis? The other factor driving cool-season turfgrass growth is daily average temperatures of 70-85 F. Let's take a trip back into your short term memory. Spring 2009 was unseasonably cool and through June, we were 7 inches below average for moisture. For MSP, May received only 0.53" of rain making it the 3rd driest May dating back to 1891 (Rochester and International Falls were the two exceptions to the spring drought). Without the rainfall and with cool temperatures, turf just didn't grow!

The good news from spring 2009 was that winter injury was not extraordinary. Most of you had small blemishes on your putting surfaces. There were some of you that lost considerable turf due to crown hydration following the February rains. But when it comes down to spring golf and Minnesota, we can defend all the reasoning in the world and it does not matter. Golfers do not want to see temporary greens, greens covers or dead grass. They don't want you to close parts of greens to seed or sod. They don't want excuses. They want June 1 conditions on April 1.

How did you look on June 1? Did you even see any crabgrass by June 1? This was where logic was thrown out the window. Logic would have it that by June 1, average temperatures would be 70 F and the spring rains would warm the soil leading to a flush of growth. Average temperature for June was 67 F in MSP. Not bad when compared to the norm. But look at April (47 F), May (61 F) and July (70 F). Remember, cool-season turfgrasses like temperatures between 70 and 85 F.

With all that said about weather, I did observe a few items from this past spring that may be of interest to you.

1. **You cannot control Mother Nature.** You cannot speed up global warming. You cannot make grass grow when conditions are unfavorable for growth.

2. **Develop a game plan:** When you have dead grass, whether it is only the back of 10 green or large portions of all your greens, you need a game plan that is discussed and approved by your GM/owner/committee chairs. I'm not thinking of a signing ceremony but a drive around the course to describe your plan of action, timeline, and potential SNAFU's. Yes, you need to discuss what may limit the successful implementation of your plan. For example, this year you could have seeded, fertilized, irrigated, limited traffic and still not see any growth. This year's limiting factor, temperature.

3. **Implement your game plan:** Don't second guess yourself. Don't succumb to the pressure of the member who makes you feel like an ant by saying "my yard is sure green this spring." Stick with your plan. I saw a lot of you this spring that were seeding every week and job-saving dead areas almost daily. You wanted to be seen doing something. I understand that position but you can overwork blemishes to the point of slowing down recovery.

4. **Once the plan is implemented:** Concentrate on polishing your course. Focus on the 98% of the course that wasn't hurt by winter. Get the bunkers in shape, remove winter debris, polish the ball washers, etc...

5. **Get the irrigation system fired up early:** Again, this was the perfect year to prove this point. If you waited to get the irrigation system primed, you may have lost some turf. The downside to this argument is the potential for breaks. As one of your colleagues said to me; "I would rather explain the irrigation break than how I lost turf this spring." An irrigation break is familiar to golfers. They see you fix breaks periodically throughout the year. If you could have a planned SNAFU, a pipe break isn't necessarily a bad one.

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Remember photosynthesis requires water and this past spring it didn't come from rain.

6. **Seed vs Sod:** As part of your game plan, you considered sod or seed as part of your solution. Unless you are absolutely required by your employer, stay away from sodding putting greens. Just because you sod does not mean you can immediately let golfers put the surface. Time to surface readiness when comparing seeding versus sodding is not too dissimilar on a putting green. Sod also introduces issues like soil layering, cultivars that vary in color and growth rates, and the need for aggressive cultural practices (aerification and topdressing). One caveat to this rule is minor patching or plugging from on-sight sod/soil. If you have a nursery green of like soil, use it. If you need to hex-plug from the perimeter of your green to areas within, do it.

7. **Fertility:** When overseeding an area or establishing an area, don't forget the phosphorus. Phosphorus may be abundant in your soil but it is immobile and required for seedling growth and plant development. I also like to keep control of the fertility during establishment of those patchy dead areas. Small doses of N will help prevent a flush of growth from surrounding healthy turf while giving seedlings the nutrition it needs.

8. **Late Fall N:** Large doses of late fall N left unused by the plant can lead to a spring flush of growth causing rapid depletion of sugars. New research from University of Wisconsin-Madison and the University of Minnesota suggests that N uptake significantly decline as temperatures cool in the fall. Ten days following a soluble N application, an average of 73% of fertilizer N was taken up in September, compared to 57% and 38% in October and November, respectively. The results of this new research indicate that N uptake is greatly reduced in cool temperatures (upper Midwest) and the agronomic benefits of late-fall N fertilization may be less significant than turf managers believe. High N rates currently recommended (1 lb soluble N per 1000 ft²) may be agronomically unimportant and environmentally and economically undesirable.

9. **Covers:** Lets divide this discussion into winter covers and spring covers. Winter covers: I didn't see widespread death from putting surfaces properly covered last year. There were a few instances of ripped seams or water seepage under an impermeable cover that caused winter damage. All bets were off when that February rain came. If you have poor surface drainage and were not protected with an impermeable cover, low spots on your greens suffered. If you were part of the unlucky group that had long-term ice cover in the north, you may have exceeded the timeline for poa survival (60 to 75 days). Spring covers: These covers are permeable and they help. However, they are also labor intensive to install and remove. The use of a spring cover helps to moderate night-time temperatures and the longer you can use them into the spring, the better your chance of seedling germination and survival. On greens with large dead areas, the use of a cover will also help to manage traffic and limit wear. This also means limiting pin locations.

10. **Write about it:** You know the key players at your club that request information. Don't assume they are sharing that information with the rest of the membership. Keep members informed of your game plan and progress. Some of your colleagues are blogging and tweeting (yes that is now a word) about conditions on the course. It doesn't take long to update members when using this new technology. Facebook or MySpace are other options. Take advantage of your time this off-season and learn how to twitter or blog.

For those of you that had problems this past spring, hopefully something was learned that will help you navigate a similar scenario the next time it occurs. As you well know, in Minnesota, it will happen again.

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