Keep An Eye on Spring Swings

Weather

Winter has come and gone, and spring has arrived. Mowers, particularly on creeping bentgrass greens, have fired up throughout much of the region to greet the newly anointed spring of 2019. Winter temperatures (Dec – Feb) averaged just a degree above average for Missouri, with February the only colder than average month in the winter season. February was also an odd month for Missouri, however, as a strong polar jet stream resulted in considerable temperature disparities across the state. A twenty-five degree separation occurred in the average monthly temperature from the NW corner in Atchison County (18.6°F) to the SE tip of the Bootheel (43.6°F). March has continued the trend thus far, with 3 – 6 degree below average temperatures throughout much of the region.

Rain & Snow a Plenty This Winter

A. Over the last 14 days, heavier precipitation in middle and eastern MO. — High Plains Regional Climate Center
B. Wettest winter on record since 1984-85. — Missouri Climate Center
Keep An Eye on Spring Swings

While temperature may have been inconsistent over the last three months, precipitation has been steady and continual. Missouri had its wettest winter in 35 years, and for a 4-6 week period it seemed as if a snow/rain storm disrupted the region in the middle of every week. The Bootheel region was hit hardest with heavy February and winter totals that encouraged flooded roads and fields. Nebraska and Iowa are now feeling the brunt of the increased precipitation and snowmelt, and considerable concern of increased threat for flooding is also here in Missouri. Strong winds, saturated soils, and heavy snow also caused numerous downed trees and tree limbs through February and mid-March (see below).

The forecast calls for much of the same, with below average temperatures throughout the end of March – early April, and unfortunately a high likelihood for continued rain, precipitation and potential flooding. Make sure to monitor soil conditions prior to mowing or driving any machinery on turfgrass areas, as traffic on saturated fields will lead to compaction and a difficult growing environment for roots that need to go down prior to summer.
Keep An Eye on Spring Swings

Quick Hits

- On the cool weather disease front, some minor Microdochium patch (aka pink snow mold) and red thread has been noted in the region on creeping bentgrass and perennial ryegrass, respectively. If Microdochium patch is on your bentgrass greens now, it’s critical to control since it will spread in during this wet, cool weather pattern. A standard curative fungicide control is a chlorothalonil + iprodione tank-mix, but other products with a combination of active ingredients such as Enclave, Fame C, Fame T, Pillar, Tartan, etc should also halt disease progression. Red thread is normally not a big issue in this region since perennial ryegrass is most harshly affected by this disease and not a long-term desired turfgrass species. A bit of nitrogen fertilizer (1 lb urea/1000 sq ft) can be used if this disease is a problem.

- Make sure your mower blades are sharp, and don’t forget to calibrate the sprayer. For more information on sprayer calibration and using the easy to use 128th method, see this article.
Keep An Eye on Spring Swings

Spring Weather Watching in Missouri

Major league baseball is back for our viewing entertainment, but the most important spring swings take place with our weather. Monitoring the progression of spring temperatures and precipitation every year in Missouri is crucial to managing turfgrass effectively. From determining the best timing for pre-emergent weed control on lawns to coming to grips with root development on bentgrass putting greens, understanding the impact of the sometimes wild environmental shifts over a Missouri spring sets the course for management for the entire season.

The last two seasons are case studies demonstrating the importance of spring weather. Spring 2017 roared out of the gate with record-breaking warm temperatures in February that shot plants into bloom and crabgrass out of the ground. Last year, was the spring that wasn’t, as April was the 2\textsuperscript{nd} coldest ever followed by 90-degree temperatures the first week of May spurring record warm temperatures for that month. Cool-season turfgrasses, particularly bentgrass putting greens needed constant and careful nurture last year since mild spring temperatures were non-existent for consistent root growth after winter.

I personally watch the forsythia outside my window like a hawk (no buds on it yet in 2019) for inspiration, and hold a healthy disregard for the findings of Punxsutawney Phil. Below are a few other better science- and data-based “decision support systems” that help keep an eye on the spring weather and the potential management decisions that need to be made from it. I’m certain I’ve missed a couple of them, but these are on my short list of use over the last few springs.
Keep An Eye on Spring Swings

Frost/Freeze Probability Guide to Guide Planting – While turfgrass seed is fairly resistant to periodic freezing temperatures and should be put down sooner rather than later in late winter/early spring, other plants in our landscape are not. Pat Guinan, the weatherman and Missouri state climatologist designed a very useful website that analyzes data from 1981-2010 to determine the probability of a freeze event ranging from hard freeze (24°F) to moderate (28°F & 32°F) to a light frost (36°F). Every year is obviously different (2017 – 80 degrees in March; 2018 – snow in the last week of April) but the contour map and particularly the individual point maps with associated probability table should give an important historical framework for when less hardy plants should go in the ground. For golf superintendents, this information may also indicate a likely date when you don’t have to give the morning call in to your pro shop to hold golfers back for another long sip of coffee in the 19th hole.

Daylength – Daylength (i.e. photoperiod) has been expanding in the northern hemisphere since December 21. As spring continues, the photoperiod has a profound effect on turfgrass greenup and future health. The Astronomical Applications Department of the US Naval Observatory provides a form here that can show the annual duration of daylight for any U.S. or worldwide city. A more user-friendly interface showing photoperiod by month can also be found here.

Soil temperatures – Fervent readers of these reports know that I will aid with this aspect throughout the season. Tracking the two-inch soil temperature, specifically in some cases as a five-day average to take away variation, provides good spring threshold-based timing for preventive disease control. If in Missouri, get this information sent to your inbox every day like I do by signing up at http://agebb.missouri.edu/horizonpoint/. Select the closest weather station to your location and make sure to select Spring Planting and Fall Fertilizer Soil Temperature.
Keep An Eye on Spring Swings

Charts at a minimum. To see an example report, for data from March 19th for the St. Louis area, click here. Daily two-inch soil temperatures have crept up in the last few days, but in urban areas are in the high 40s for Springfield, mid 40s in St. Louis, and lower 40s in Kansas City.

- **GDD Tracker** – I’ve written a few times in past March reports (2016, 2017, 2018) about this fantastic service provided by the Michigan State University for growing degree day accumulation and turfgrass pest prediction across the region. The url is [http://www.gddtracker.net](http://www.gddtracker.net), and for more personalized service I suggest making a profile and signing up for email alerts here - [http://www.gddtracker.net/alerts/view/](http://www.gddtracker.net/alerts/view/). Models will help you time applications for preemergents, Proxy/Primo, and a number of other pest controls. Right now, according to the degree day model southern Illinois and the Bootheel are in the early optimum stage for applying crabgrass/annual bluegrass preemergent as indicated by base 32-degree day accumulation. The system also includes forecasted data, which indicates St. Louis will be in the early optimum stage for preemergent application by next week (~ March 24). The developers (led by Dr. Kevin Frank) also added a very interesting feature in a table that shows the degree day accumulation at various bases (22°F, 32°F, 42°F, 50°F, 55°F) not only for the current year but also for the previous. This gives the turf manager an excellent quick snapshot of how our application timing may differ from the current year to the previous. For example, St. Louis has accumulated 216 base 32°F growing degree days as of March 19th this year, whereas last year had already accumulated nearly 400 base 32°F degree days. This is the difference between being squarely in the window for preemergent application on the 19th and past it by March 28 last year vs. not being in the application window yet in 2019.