

May 11, 2020

Volume 21:5

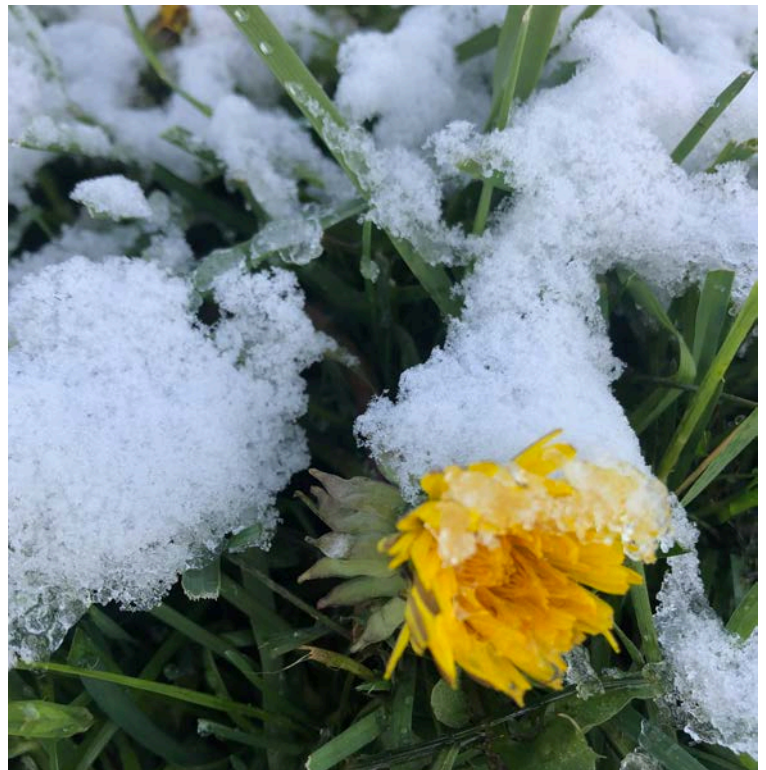
Gazing in the Grass

Frank S. Rossi, Ph.D.

Record low temperatures, 20 degrees below normal averages, and snow for many on Mothers Day will get lost in history during the pandemic. But for those in the involved in the essential work of caring for our urban grasslands (golf courses, lawns, sports fields, grounds management, cemeteries, etc.) it has put the entire growing season on **pause** for the month of April and now into mid-May! Soil temperatures entered the month of April in the mid50's at 2" depth North into the Hudson Valley and as of this writing (6 weeks later) those Hudson Valley soil temperatures are in the upper 40's and MetroNYC creeping into mid-50s. Temperatures are expected to rebound and moisture remain adequate throughout the region for the week. However, sensitive plants in the landscape may still be vulnerable to Frost and Freeze expected through Thursday.

Interestingly, the changing jet stream that has brought the cold weather to much of the Northern Northeast, upon until recently had not impacted the region south of NYC and Central NJ. However, much of the entire region now is falling behind the 30 year average heat accumulation.

Many of the Spring-time data triggers (eg., root pathogen fungicide drench, crabgrass emergence) that looked as if they were likely to occur in late March, are just starting or have still NOT occurred. Others such as annual bluegrass weevil migration appears to be prolonged. A "flat" migration curve will make it difficult to maximize adult control with a single application and multiple applications increase risk of resistance to pyrethroids if chlorpyrifos or cholantraniliprole are not available for use. Soil temperatures still under the target range for root pathogen fungicide drench (eg., summer patch, take-all, fairy ring). At these times of slow growth conditions, managing traffic stress and minimizing injury associated with maintenance are key.



Keys to Successful Crabgrass Control

Weed scientists from PA, NJ and MA were reporting early signs of crabgrass germination last week with most plants at 1-3 leaf stage. However, within a day or two of emergence, temperatures plunged into the 20's and comments were circulating about cold injury to seedlings. The "false" Spring conditions have become a regular aspect of a climate in transition. Management practices and chemical applications are more difficult to implement at the ideal, most efficient time based on predicting weed emergence heavily influenced by climate.

First, crabgrass (as well as any annual grassy-weed) are bad actors environmentally. Annual weeds exploit bare ground and produce seed then **leave ground bare** again late season and next Spring with high runoff volumes.

Crabgrass produces an annual seed supply that "rains" across the Northeast US, especially coastal areas dominated by smooth crabgrass (*Digitaria ischaemum*). Cornell Turfgrass alum Chris Sitko recently completed a MS degree studying weed seed banks from NY to Edgartown, MA. In areas with a history of crabgrass, the top 1" of soil contained approximately 1400 germinable seeds of crabgrass per sq ft.!



Credit:Matt Elmore

Crabgrass management programs begin with maintaining a dense turf so crabgrass has no area to grow. Studies have shown crabgrass can still emerge in dense turf but it is always at lower levels than in thin turf and plants stay juvenile and provide longer application window. If turf is thin, a well-timed Spring N application can enhance the competitive ability of cool season turfgrasses. Increased density from Spring applied N has been the premise behind the effectiveness of corn gluten meal, a common organic fertilizer shown to reduce crabgrass.

Reports to date on crabgrass emergence in the northeast show images of thin turf and bare ground, especially along pavement. These areas could still benefit from seeding but **minimize soil disturbance** as this will recruit more weed seedlings. Prolonged cool wet soils will allow for successful turfgrass establishment and provide adequate competition for the crabgrass seedbank in the next few weeks. Most crabgrass seedling emergence models demonstrate various phases of emergence. Over the next three weeks about 25% of entire crabgrass seedbank will emerge, then 50% by late June, 75% by late July and the remaining 25% late July into August. That same study found plants that germinated latest in season did not produce viable seed.

Beyond N fertilizer for increasing density and seeding for increasing competition, pre emergence crabgrass herbicides remain the traditional approach. Control failures in the last few years that can be attributed to products applied too early in the season and degrade when crabgrass germination persists into July. Recent Rutgers research has shown that early applications, followed by a second split application at Forsythia bloom will provide season long control. If some crabgrass has emerged, several pre-emergence products also are effective on 1-3 tiller plants. Delaying preemergence applications into June with long lasting products could compromise Autumn seedings. Best to consider shifting to postemergence control strategy. **△**