Gazing in the Grass
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Warm and dry conditions to the north and west of NYC has continued to advance the season, with some mild heat stress beginning to emerge to the south of NYC. Base 50 Growing Degree Days (GDD) have caught up to within a few days of normal and where moisture is not limiting active growth is underway. The dry conditions are in stark contrast to the 2 plus inches of rainfall that fell from Orange Cty., NY to Washington DC. These areas have adequate/excessive soil moisture that will create high risk for soil born pathogen infection. Additionally the FORECAST dollar spot and foliar anthracnose models indicate high risk for the early part of this week.

Rising soil temperatures has spurred summer annual weed germination across the region. Soil temperatures over the last few weeks has been into the 70's at the 2” depth. Crabgrass plants begin to germinate when the average daily soil temperatures reach 57 to 64 °F at a one-inch depth although large quantities of crabgrass seedlings will not start germinating until soil temperatures increase to 73 °F or above at a one-inch depth. Population studies have found that about 20% of the crabgrass will germinate until mid-June through much of the Northeast, then about between 70% of remaining plants will germinate until mid-July then the last 10%, round out the 12-14 weeks of persistent germination. A single crabgrass plant can grow into a large available bare spot, producing many tillers and seed heads. However, if many crabgrass seedlings were to emerge in that same bare spot, the individual plants would be very crowded by their neighbors, but in total, the same number of seed would still be produced. This allows plants to compensate for variability in germinating seed population and still produce sufficient number of seed to overwinter. A dense actively growing turf has been shown to significantly reduce the amount of crabgrass pressure but it will not always eliminate the threat. Small plants in dense turf areas develop very slowly and are very susceptible to early post control programs using sprayable Dithiopyr or Tenacity. These products offer excellent early to mid-post control of
emerged crabgrass plants but have some caveats. First, delayed dithiopyr applications can persist into September and reduce seeding windows. In contrast, Tenacity offers excellent mid-post and only 6-8 weeks of pre-activity on crabgrass. Additionally, cool season turf can be seeded into the applied herbicide barrier. The Tenacity will “bleach” the existing crabgrass plants, as well as any creeping bent grass in the turf. This might warrant some communication with clientele or the use of triclopyr in a tank mix combination that has been shown to reduce bleaching.

**Frequently Asked Questions (FAQ):**

**How Do Dry Conditions Influence Herbicide Activity?**

Dry soil conditions have several effects on herbicide activity. The most important and often overlooked is the role of moisture in “activating” the preemergence barrier in the turfgrass rootzone. Preemergence herbicides will require moisture to migrate into the turf root zone and become available for absorption by newly germinating weed seedlings. Remember preemergence herbicides require weed seedlings to germinate for them to be controlled. In fact some breakthrough might be visible if herbicide is soluble but could be controlled over time as herbicide becomes available and disrupts crabgrass rooting. Be sure to follow label directions if using preemergence herbicide and irrigate as stated on label. Monitor turf density and consider using N fertilizer to increase density as studies have found fertilizing a thin turf alone will reduce crabgrass invasion by 70 percent.

Many preemergence herbicides, such as dintroanilines prodiamine (Barricade) or pendimethalin (Pre-m) can influence turfgrass root growth. Under very dry conditions the affect on rooting might be pronounced. Finally, dry conditions will reduce desirable turf vigor possibly creating voids that can be filled by invading weeds. Dry conditions also influence performance of post emergence herbicides that might be used at this time for early post crabgrass and broadleaf weed control. In general, moisture stress conditions that limit plant growth also reduce the effectiveness of foliar applied herbicides such as 2,4-D. Simple solutions for maintaining effectiveness are to irrigate within 24-48 hours of application, either pre or post application. If irrigating after application be sure product dries on leaf surface before applying water.

**Note of Passing**

The Cornell Turfgrass Program will add our voice to the choir of praise for Dr. James B. Beard who passed away May 14, 2018 at 82. It would be virtually impossible to over estimate the impact James Beard had on our lives as turfgrass professionals. In fact some might argue the concept of science-based decision-making began with Dr. Beard. I was fortunate to have had several visits with Dr. Beard over the years. Most recently at the International Turfgrass Society meeting last summer in New Jersey, where I snapped this photo of Dr. Vargas, Dr. Rieke, Past President ITS Pam Charbeneau, and Dr. Beard. During my years at Michigan State in the early 1990’s I worked with Professors Rieke and Vargas and heard many stories of Dr. Beard’s early years building the MSU program. I'll remember Jim for his love of northern MI, especially the Leelanau Peninsula that he would speak of often. His legacy is assured by so many textbooks and articles from his own hand, but to me his legacy is the Turfgrass Information Center @ MSU. This topic-specific database dedicated to turfgrass science ensures the professional will have easy access to latest in scientific and trade publications. Access to this information lays the foundation for science-based management decisions, and everytime we use it we have Dr. Beard to thank. Visit it @ [https://tic.msu.edu/](https://tic.msu.edu/).