Putting the Chinch on Zoysia in St. Louis

Weather

The one-two drought punch of 2012
A. Temperatures from May-July are exceeding 1980 levels and are more closely related to the mid 1930’s.
B. The heat combined with the low rainfall totals are making 2012 reminiscent of the Dust Bowl era.

This current 2012 weather pattern is one for the record books. July 2012 will go down as the hottest since 1980, and ties as the 5th hottest July on record. As of July 31, Columbia, Kansas City, St. Louis, and Springfield reported 20, 19, 18, and 14 days, respectively, with triple digit heat for the year. If you look at it from the context of our “months without R’s”, 2012 Missouri weather easily compares with those of the early dustbowl 1930’s era. An early hot spell combined with a lack of precipitation in our normally rainiest month (May) has led to catastrophic conditions for farmers and a potential loss of unirrigated lawns throughout the state. As mentioned in the last update, golf, athletic field, and sod farm managers are putting out exorbitant amounts of irrigation water to keep turf alive and viable during this difficult period. The good news is we are into August, and the September recovery period (aka month with an “R”) is around the corner. There also are some favorable temperatures forecasted for later this week (although little chance of rain).
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Chinch bug damage on STL Zoysia Lawn
A. Chinch bugs often cause large uniform areas of dieback. In this case, the previous year’s damage was replaced with a garden, yet the chinch bugs started back right were they left off.
B. Chinch bugs congregate at the leaf sheath and inject a toxin that can turf leaves yellow or orange. This can lead to a misdiagnosis of large patch, which is not active in the summer months.
C. Chinch bugs are small, and the adults are fast. Nymphs are orange with a white band, and are more obvious than the dull colored adults. Inset: Blown up image of the red eyed devils...

- A few cases of severe chinch bug damage on zoysiagrass have come into the diagnostic lab over the last week from St. Louis. Unfortunately, it appears that insecticide applications may be needed for lawns in St. Louis that have recurring insect issues (see hunting billbug article from 6/13). A point of confusion is that chinch bug injury from toxin injection can appear much like large patch injury; with orange-colored leaves along margins of damage. Large patch, however, is not active during the summer months when zoysiagrass is growing at full tilt. In these cases, numerous chinch bug nymphs (very small as noted above) were found associated with the very consistent non-patchy and uniform damage. If detected, a contact insecticide application is often warranted. Applying a contact insecticide in and 2-3 feet outside infected areas is suggested with a sprayable formulation or hose-type applicator.
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- We are in the dog days of August, and some bentgrass greens have had it. As mentioned in the last update, we’ve had a few greens samples in the last few weeks where bentgrass has simply “given up the ghost”. In some cases, Pythium root rot or summer patch has contributed to the damage, but the real root of the problem lies in the roots. High organic matter and greens in poor locations (heavy shade, lacking air movement) have been the real cause of bentgrass decline in this unrelenting heat stress period. In the diagnostic lab, these conditions are painfully apparent in thin, shallow roots that have sloughed off epidermal cells. This is an open avenue for any scavenging root pathogen to invade the root vascular cylinder and finish the job. In many cases, the superintendent has restricted pathogen presence with fungicide application, leaving the weak roots to tell the story of an extremely maintained cool season grass with poor soil conditions in relentless 100+ degree temperatures.

**Bentgrass Physiological Decline**

A. High amounts of organic matter and short rooting are typical of bentgrass that is declining due to abiotic (non-pathogen) causes.

B. Sloughing off of roots typical to bentgrass suffering from physiological decline.
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Several complaints in the last week have come in from golf superintendents dealing with tunneling damage in their greens. Due to scouting diligence of the superintendents, several of these cases have been attributed to the seed corn beetle (Stenolophus lecontei). Despite their name, very little of what they feed on is seed corn, but instead is other insects found in soil. In this current drought situation, insects are congregating in anything irrigated because life-saving water is constantly being applied. The seed corn beetles are following the water and food source to golf putting greens. A contact insecticide such as Dylox or Sevin is suggested if the infestation is intolerable and affecting play (as in the picture above). We should be in the second, and last generation of these beetles. If the damage is bearable, the seed corn beetles are providing a free form of aerification much like earthworms. Just trying to accentuate the positive...

University of Missouri Field Day Highlights

The University of Missourri Turf and Ornamental Field Day held on July 10th was a rousing success with “cool” 90 degree high temperature, 155 attendees, 18 vendors, and a helicopter flyover. Field stops ran the gamut of turf herbicide and fungicide trials to tree and ornamental recommendations for use in Missouri. If you would
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like to download the program, you can do so here. If you weren’t able to attend the field day, the following few photos are just a few of the highlights you missed.

Tree & Ornamental Presentations
A. Soon-to-be-retired (and sorely missed) Dr. Chris Starbuck closely examines a tree limb during his presentation describing disease impact on evergreen trees
B. Dr. Dave Trinklein looks upon the yonder beauty of his ornamental research plantings, and gives his observations on the aesthetics and suitability of cultivars for the Missouri climate.

Turfgrass Physiology Research Updates
A. Dr. Xi Xiong discusses the impact and safety of pre-emergence herbicide applications targeted for large crabgrass control on bentgrass putting greens.
B. Research assistant (and M.S. student) John Haguewood details the use of new herbicide chemistries to take out one bluegrass (annual) from another (Kentucky).
C. M.S. student Enzhan (Steve) Song, with an assist from Ph.D. student Xiaowei (Natalie) Pan, explains his evaluations of bermudagrass cultivar tolerance to the AOPP herbicides.
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Turf Pathology Graduate Student Research
A. M.S. student Derek Cottrill explains his multi-faceted factorial field experiment examining the effects of nitrogen source, nitrification inhibitor, sulfur, and fungicide on spring dead spot of bermudagrass.
B. Ph.D. student John (JB) Workman describes the construction of a 7200 ft² USGA spec. putting green dedicated to research on Pythium root infecting pathogens of creeping bentgrass.

Rockin’ Rhizoctonia
A. As an alternative to trying to pinch the pathogen to death, I talked about the impact of cultural practices (particularly irrigation and nitrogen scheduling) and fungicide formulation on the severity of brown patch on tall fescue.
B. My research assistant Daniel Earlywine presented our work on trying to maximize efficacy of large patch control with fungicide timing and selection.

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