Best Management Practices For Turf Under Drought Stress And Other Research In Progress At UC Riverside

By Pat Gross, regional director, West Region

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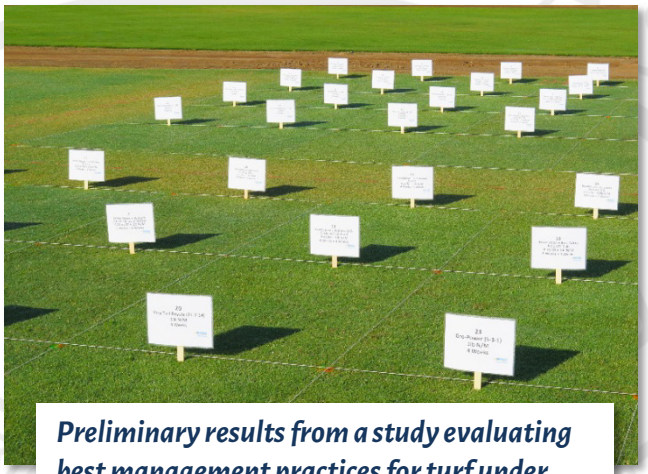
The University of California, Riverside Turfgrass and Landscape Research Field Day took place Sept. 17 and nearly 200 people attended. Information was presented on 12 of the projects that were in progress or completed over the past year. This update highlights three of the studies:

The bermudagrass breeding program at the University of California, Riverside currently is testing 30 hybrids to see which selections perform best under extreme drought while also providing the best winter color retention.

Best management practices for turf under drought or water use restrictions – This study was of significant interest to many attendees due to the mandatory water restrictions that were imposed by Governor Jerry Brown in April. The study was initiated in July on 'Princess-77' bermudagrass turf that was irrigated by hand at either 40 percent or 70 percent of the previous week's evapotranspiration (ET_o). Treatments included: plant growth regulator (Primo Maxx®); wetting agent (Revolution®); and fertilizer products (urea, Gro-Power® 5-3-1, Best Nitra King® 21-2-4, Loveland® 5-29-12, Turf Royale® 21-7-14). Preliminary results indicate:

- Growth regulator treatments had no effect on turf quality.
- As expected, the wetting agent had a positive effect on turf quality.
- The biggest impact on visual turf quality were the four fertilizer treatments, suggesting that proper nitrogen management could help reduce water use by 30 percent during the summer months.

Evaluation of products for alleviation of salinity – Managing salinity is a major concern for many turfgrass mangers in California, especially over the past four years with limited rainfall to naturally leach harmful salts from the soil. This study was initiated three years ago on a plot of 'Tifway II' bermudagrass that is irrigated at 75 percent ET_o with water similar in quality to water from the Colorado River (EC = 4.3 dS/m; Na = 523 ppm). Nine different treatments were evaluated including: seven experimental products, two commercially available products and gypsum. For the third consecutive year, the treatment combination from Ocean Organics® of DeSal® (0.75 fluid ounce per 1,000 square feet), StressRx® (6 fluid ounces per 1,000 square feet), and Exp 5-0-1 (6 fluid ounces per 1,000 square feet) applied every two weeks lowered salinity and produced the best turf quality.



Preliminary results from a study evaluating best management practices for turf under drought conditions indicates that wetting agents and proper nitrogen management can potentially reduce water use by 30 percent.

Improvement of bermudagrasses for improved drought tolerance and winter color retention – Dr. Adam Lukaszewski gave an overview of turfgrass breeding work going on at UC Riverside that includes a project to breed bermudagrasses with improved drought tolerance and winter color retention, which could potentially eliminate the need for winter overseeding. The study started with 113 accessions from different species of bermudagrass (*Cynodon dactylon*, *C. barberi*, *C. plectostachyus* and *C. transvalensis*) and has produced 350 viable hybrids. From the hybrids, 30 were selected and are currently being evaluated at Arizona Country Club in Phoenix, Arizona, the Coachella Valley Agricultural Research Station in Thermal, California and Preserve Golf Club in Carmel Valley, California Some of the grasses will be tested under extreme drought and all will be evaluated for the onset of winter dormancy.

Useful Resources:

The full proceedings from the field day

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