



TURFGRASS FOR DRY TIMES

How many times have you heard the term “water-thirsty Kentucky bluegrass” used in connection with landscape irrigation restrictions or incentives to homeowners to replace or reduce the size of their lawns? If you answer “too often,” you know your turfgrass.

Research has verified a wide range of responses to drought among bluegrass cultivars. Some varieties, in fact, compare favorably to the better-performing turf-type tall fescues, the cool-season species most often touted for its ability to stay green during periods of extended dryness.

“We were shocked that we had bluegrasses in the upper percentages of what we’ve surveyed in the best of the tall fescues,” says Kenneth Hignight, director of research NexGen Turf Research, Albany, OR. His company has been testing cool-season turfgrasses for a range of environment-friendly characteristics, including drought tolerance, for almost 20 years.

Bluegrasses that can stay acceptably green even during dry periods are significant for obvious reasons.

Landscape architects, landscapers or lawn care professionals can now confidently specify or recommend these water-efficient cultivars for customers desiring the beauty and texture of Kentucky bluegrass

lawns while still requiring reduced landscape water use.

To that end NexGen initiated the formation of the Turfgrass Water Conservation Alliance (TWCA), described on its website as “an unbiased independent foundation whose number one goal is water conservation focusing on live plant material.” Other founding members include ProSeeds Marking, Inc., Turf Merchants Inc. and Pennington Seed.

Research cooperators include Dr. Cale A. Bigelow at Purdue University, Dr. Mike Richardson and Dr. Douglas Karcher at the University of Arkansas, Dr. Jeffrey Derr at Virginia Tech and Steve Langlois, Langlois Turf Consultants in New Jersey. Drought stress testing continues at turf research sites in Albany, OR; West Lafayette, IN; Fayetteville, AR; Virginia Beach, VA and Pitman, NJ.

NexGen’s collaboration with Karcher (and the impetus of the idea for the TWCA) began in 2004 after Hignight, attending an agronomy meeting, learned of Karcher’s use of digital imaging analysis to evaluate specific turfgrass characteristics. He realized that by taking digital images of selections of turfgrass as they dry down and analyzing these images, researchers could very accurately determine the percentage of green tissue for each selection over a period of days and weeks and, in

NexGen researchers evaluate the results of their drought tests plot by plot.

effect, measure its drought tolerance.

“A percentage of total pixels tells you the percent of green tissue color,” says

Hignight. “Now we have a system, counting the pixels, that says when a particular cultivar contains any level of green tissue between 100% and 0%, and compare its performance to other cultivars.”

Hignight says his company takes more than 30,000 digital images of turf plots each year of all popular cool-season lawn grasses which are being subjected to drought conditions inside of rainout shelters and out in the field.

“We could see differences in the first trials we ran. They were dramatic,” he says.

The difference in the ability of the most drought-tolerant bluegrasses to remain acceptably attractive under dry conditions is not insignificant. For example, using the cultivar, Mallard, one of the top performing varieties, as opposed to one of the least drought-tolerant cultivars can mean the difference between applying 8,000 and 19,000 gallons of water per summer to keep a typical 5,000 sq. ft. lawn in Albany, OR, acceptably green.

Hignight, however, doesn’t recommend using a single cultivar of bluegrass (or any species, for that matter) to establish a lawn. Each species and each cultivar of each species has unique characteristics. The strengths of one mask the weaknesses of others, he explains.

To that end, he and cooperators across the United States, continue to investigate all species of cool-season grasses and are measuring warm-season species, as well, for their drought tolerance.

To date the TWCA has certified 24 cultivars representing five cool-species meeting its criteria for offering end users “proven water conservation benefits.” They and other information about the TWCA can be found at tgwca.org. — RH