

Report Card for Turfgrasses

The turf industry depends on the National Turfgrass Evaluation Program (NTEP) to grade the performance of new and existing turfgrass cultivars.

BY JEFF NUS



University field days are an excellent way for golf course superintendents to compare turfgrass performance in side-by-side plots such as this National Turfgrass Evaluation Program perennial ryegrass trial at Penn State University.



In addition to university trials, turfgrass trials have also been conducted on golf courses, such as this cooperative trial by USGA, GCSAA, and NTEP at the Southern California Golf Association members' club in Murietta, Calif.

The turfgrass industry has many players — numerous organizations that serve their members and provide benefit to us all. Since 1894, the USGA has served the game in many ways from hosting national championships, maintaining equipment standards, and developing rules to providing a handicap system, funding turfgrass and environmental research, and extending agronomic expertise to our nation's golf courses. Other organizations also provide valuable services to the industry. One such organization in the National Turfgrass Evaluation Program, and it plays an essential role in evaluating the very turfgrasses on which this game is played.

The National Turfgrass Evaluation Program (NTEP) is a cooperative effort between the non-profit NTEP, Inc., and the United States Department of

Agriculture and is headquartered at the Beltsville Agricultural Research Center in Beltsville, Md. From its inception in 1980, NTEP's goal has been to coordinate a nationwide network of universities to grade and report the performance of new and existing turfgrass cultivars. With an estimated over 50 million acres of the United States covered by turfgrass, it is an important responsibility for the third largest crop in America.

NTEP trials compare the quality and other performance measurements of experimental and commercial turfgrass cultivars at several locations across the nation and report this information to turfgrass breeders, seed producers, and interested end-users. The National Turfgrass Evaluation Program has conducted turfgrass trials with warm-season turfgrass such as bermudagrass, zoysiagrass, seashore paspalum,

and St. Augustine grass, as well as cool-season turfgrasses such as Kentucky bluegrass, perennial ryegrass, creeping bentgrass, colonial bentgrass, velvet bentgrass, tall fescue, creeping red fescue, Chewings fescue, sheep fescue, and hard fescue, among others.

Before the initiation of each trial, seed companies and turfgrass breeders are notified of the upcoming test and are asked to submit entries — new experimental lines or established cultivars currently in the marketplace. A fee is assessed for each entry, usually \$2,000 per year for a five-year trial. Therefore, for a cultivar currently in the marketplace, seed companies or turfgrass breeders are assessed \$10,000 for a typical five-year trial to see how their cultivars perform against all other entries.

In an effort to reduce upfront costs to seed producers and turfgrass



Much advancement in turfgrass quality has been made over the past few decades, including resistance to common turfgrass diseases such as leaf spot. The older susceptible Kenblue Kentucky bluegrass cultivar (left) is compared to the newer resistant cultivar Princeton (right).

breeders, the NTEP Policy Committee recently restructured the entry fee schedule to include a \$1,000-per-year fee for experimental turfgrass lines that have yet to be named as an official cultivar. If the experimental line performs well in the trial, and the seed company establishes it as a named cultivar within one year after the end of the trial, the company is required to make up the entry fee difference.

Having more entries in a trial enables the evaluations to be conducted at more locations, which is an important facet of any trial. For example, a specific cultivar of Kentucky bluegrass may perform well in Minnesota but may perform poorly in Massachusetts. Scientists call this *genotype by location interaction*, and it is useful information for seed companies. Cultivars that perform well in a specific region can be combined into high-performing blends (several cultivars of perennial ryegrass, for instance) that are then marketed to that region.

In NTEP trials, turfgrass quality is rated by university scientists using a scale of 1 to 9, where high-performing cultivars receive scores of 8 or 9, reflecting a deep rich color, high

density, excellent mowing quality, and fine leaf texture. Well-experienced turfgrass scientists can be surprisingly accurate using this standard NTEP rating scale. This continuous monitoring of turfgrass quality by many university cooperators and the labor of dedicated turfgrass breeders have yielded steady improvement in the quality of turfgrass cultivars over the years.

The economy demands that emphasis be placed on reducing inputs required for maintaining turf. Water for irrigation has become much more limited, the cost of fertilizer has risen significantly, and the cost of pesticides continues to escalate. It has been argued that more stressful growing conditions for NTEP trials might be more realistic and valuable in producing grasses capable of persisting with fewer inputs under less than ideal growing conditions. In response to feedback from the seed industry, NTEP is refocusing cultivar trials from non-limiting conditions to “trait-specific” trials.

“In the early days of turf there were very few improved cultivars on the market, so much effort was placed by turf breeders on improving aesthetic

traits, such as color, texture, and density. Now, however, with hundreds of turf cultivars on the market, there are many dark green, dense, fine-textured grasses to choose from,” says Kevin Morris, NTEP’s Executive Director.

“What is needed now is improvement in drought tolerance, salt tolerance, specific disease resistance, traffic tolerance, and low maintenance, while keeping the high aesthetic quality and other desirable traits in modern turfgrasses. NTEP is testing those specific traits to give breeders and seed companies an opportunity to develop grasses with those traits, as well as the aesthetic quality consumers have come to expect.”

Through it all, NTEP cooperators across the nation will continue to grade cultivars to find high-performing grasses at the top of their class. You can be assured that after they make the grade, these new high-performing cultivars will quickly find their way to golf courses.

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